

# Load Holding, Counterbalance Cartridges

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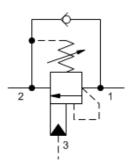


# Cavity Information

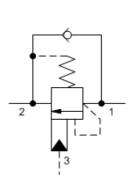
Series	Ports	Cavities
Series Z Cartridges	3-Port	T-382A
3/8-24 UNF Cartridge Thread		
5 mm Valve Hex Size		
1 - 14 Nm Valve Installation Torque		
Series P Cartridges	2-Port	T-8A
M16 Cartridge Thread	2-Port (Deep)	T-8DP
22.2 mm Valve Hex Size	3-Port	T-9A
27 - 33 Nm Valve Installation Torque		
Series 0 Cartridges	2-Port	T-162A
	2-Port (Deep)	T-162DP
M16 Cartridge Thread 19,1 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 1 Cartridges	2-Port	T-10A
M20 Cartridge Thread	2-Port	T-13A
vi20 Carmage Thread 22.2 mm Valve Hex Size	3-Port	T-11A
11 - 47 Nm Valve Installation Torque	4-Port	T-21A
The state installation forque	4-Port	T-31A
	6-Port	T-61A
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
1 - 68 Nm Valve Installation Torque	4-Port 4-Port	T-22A
	4-Port (Dual path)	T-32A T-52AD
	6-Port	T-52AD T-52A
	6-Port	T-62A
Series 3 Cartridges	2-Port	T-16A
•	3-Port	T-17A
M36 Cartridge Thread 31,8 mm Valve Hex Size	4-Port	T-23A
203 - 217 Nm Valve Installation Torque	4-Port	T-33A
2	4-Port (Dual path)	T-53AD
	6-Port	T-53A
	6-Port	T-63A
Series 4 Cartridges	2-Port	T-18A
M48 Cartridge Thread	2-Port (Undercut)	T-18AU
11,3 mm Valve Hex Size	3-Port	T-19A T-19AU
174 - 508 Nm Valve Installation Torque	3-Port (Undercut) 4-Port	T-19AU T-24A
	4-Port (Undercut)	T-24A T-24AU
	4-Port	T-34A
	4-Port (Dual path)	T-54AD
	6-Port	T-54A
	6-Port	T-64A



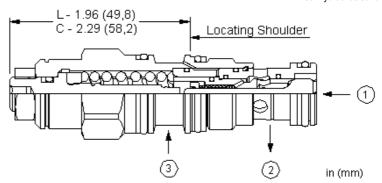
sunhydraulics.com/model/CBCB



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

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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

#### **CONFIGURATION OPTIONS**

# Model Code Example: CBCBLHN

L Standard Screw Adjustn

C Tamper Resistant - Factory Set

CONTROL

(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

N Buna-N

V Viton

(H) SEAL MATERIAL

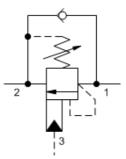
(N) MATERIAL/COATING

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

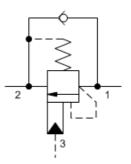
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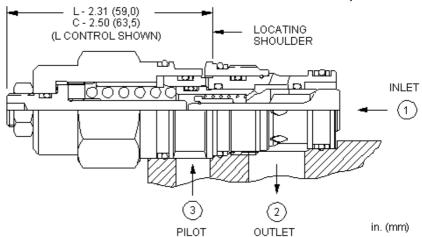
sunhydraulics.com/model/CBEB



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

I Ctandard Carayy Adjustment

CONTROL

# (L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

N Buna-N

**E** EPDM

V Viton

(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

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 -

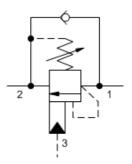
105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting

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

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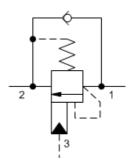


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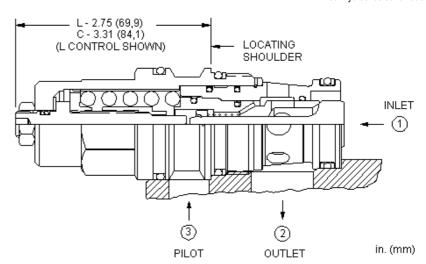


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3-Port Non-vented



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBGBLHN

(L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL CONTROL (N) MATERIAL/COATING

L Standard Screw Adjustment

1000 - 4000 psi w/25 psi Check (70 280 bar w/ 1,7 bar Check), 3000 psi C Tamper Resistant - Factory Set

(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

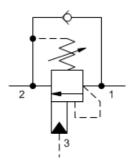
Standard Material/Coating N Buna-N V Viton /LH Mild Steel, Zinc-Nickel

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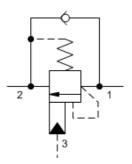




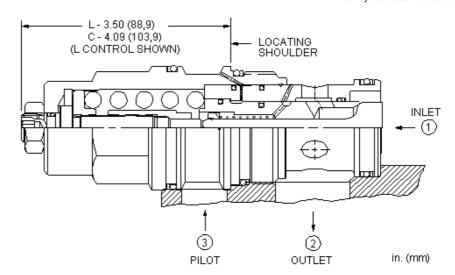
sunhydraulics.com/model/CBIB



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.

Dist Datie	4.5.4
Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBIBLHN

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

(210 bar) Standard Setting

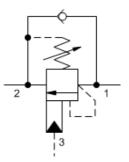
A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting

B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting

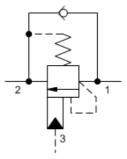
I 400 - 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting N Buna-N Standard Material/Coa
V Viton /LH Mild Steel, Zinc-Nickel

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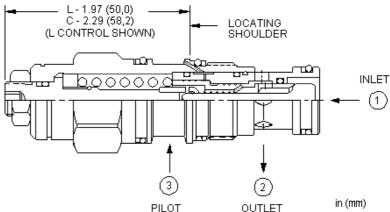
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3-Port Non-vented



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBCYLHN

L Standard Screw Adjustment

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

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

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

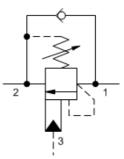
N Buna-N Viton /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

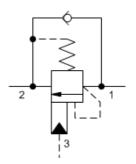
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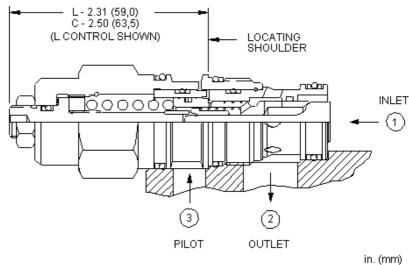
sunhydraulics.com/model/CBEY



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBEYLHN

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

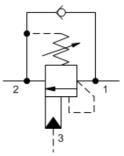
B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting N Buna-N
V Viton

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

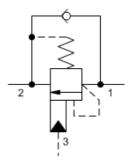
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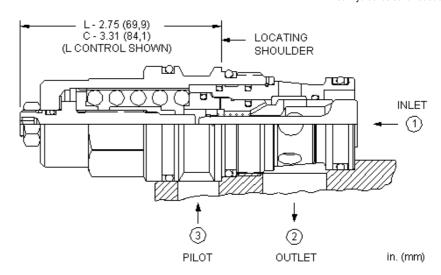
sunhydraulics.com/model/CBGY



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

## **CONFIGURATION OPTIONS**

#### Model Code Example: CBGYLHN

N Buna-N **V** Viton

(H) SEAL MATERIAL (N) MATERIAL/COATING CONTROL (L) FUNCTIONAL SETTING RANGE

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 1000 - 4000 psi w/4 psi Check (70 -

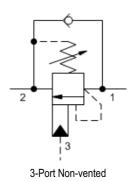
- 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 1500 psi w/4 psi Check (28 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting
- I 400 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting

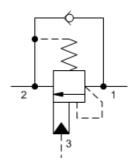
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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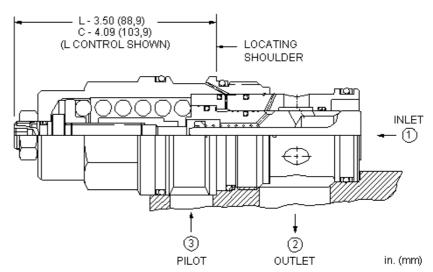


sunhydraulics.com/model/CBIY





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBIYLHN

I 01 1 10 1 A F 1 1 1 1

CONTROL

(L) FUNCTIONAL SETTING RANGE

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

(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

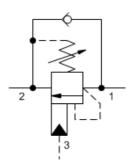
B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting

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
 Standard Material/Coa

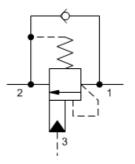
 V Viton
 /LH Mild Steel, Zinc-Nickel

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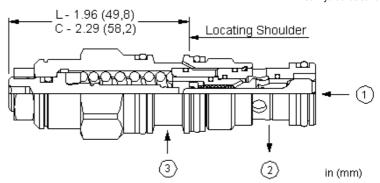
sunhydraulics.com/model/CBCL



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

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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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 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

- 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

(J) SEAL MATERIAL

Standard Material/Coating

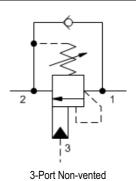
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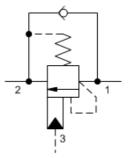
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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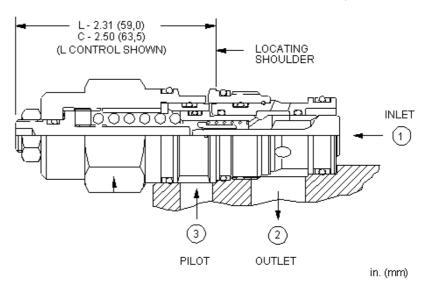


sunhydraulics.com/model/CBEL





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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBELLJN

CONTROL 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

- 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

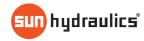
(J) SEAL MATERIAL

/AP Stainless Steel, Passivated

(N) MATERIAL/COATING

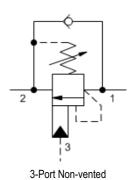
/LH Mild Steel, Zinc-Nickel

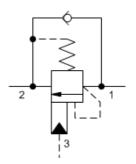
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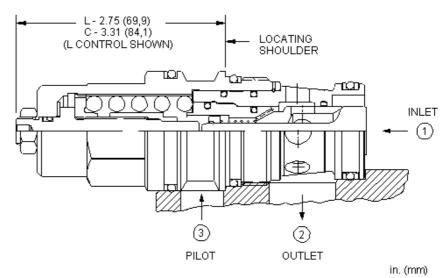


sunhydraulics.com/model/CBGL





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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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: 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

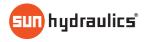
- C 2000 5000 psi w/4 psi Check (140 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- D 1000 2500 psi w/4 psi Check (70 -
  - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting
- K 1000 2500 psi w/25 psi Check (70 -175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

N Buna-N
E EPDM
V Viton

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

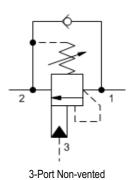
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**CBIL** 



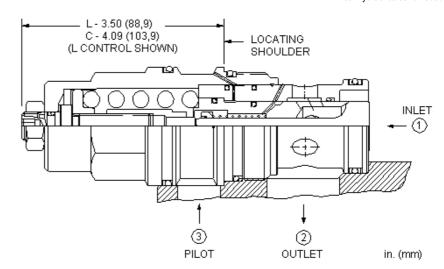


sunhydraulics.com/model/CBIL



2 1

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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
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

(210 bar) Standard Setting
 C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi

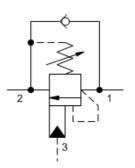
 D 1000 - 2500 psi w/4 psi Check (70 -175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting

(210 bar) Standard Setting

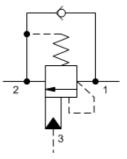
K 1000 - 2500 psi w/25 psi Check (70 -175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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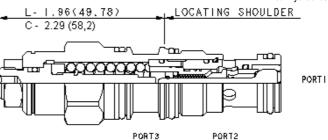
sunhydraulics.com/model/CBCA



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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 AdjustmentC Tamper Resistant - Factory Set

280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 -

1000 - 4000 psi w/25 psi Check (70

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

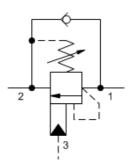
 400 - 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting N Buna-N
E EPDM
V Viton

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

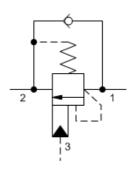
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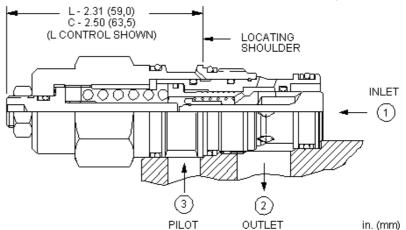
sunhydraulics.com/model/CBEA



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

L Standard Screw Adjustment C Tamper Resistant - Factory Set

CONTROL

(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

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

**E** EPDM V Viton

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

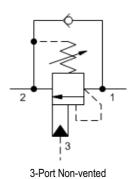
(N) MATERIAL/COATING

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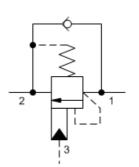


sunhydraulics.com/model/CBGA

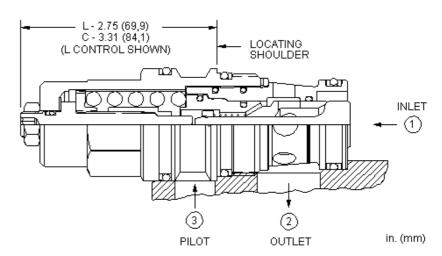


**MODEL** 

**CBGA** 



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

C Tamper Resistant - Factory Set

280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting 1000 - 4000 psi w/4 psi Check (70 -

1000 - 4000 psi w/25 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

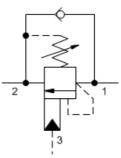
**E** EPDM V Viton

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

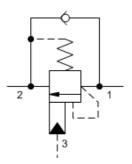
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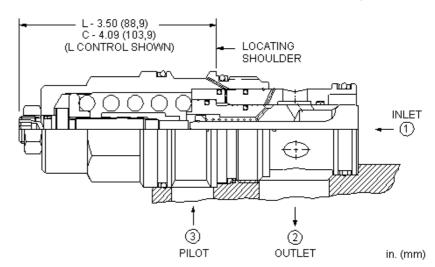
sunhydraulics.com/model/CBIA



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

## Model Code Example: CBIALHN

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

CONTROL

# H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi

(L) FUNCTIONAL SETTING RANGE

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
- 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

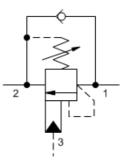
**V** Viton

(N) MATERIAL/COATING

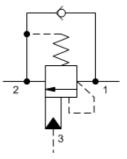
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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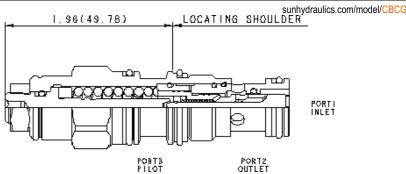




3-Port Non-vented



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

**NOTES** 

CONTROL

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

# L Standard Screw Adjustment

C Tamper Resistant - Factory Set

(L) FUNCTIONAL SETTING RANGE

(J) SEAL MATERIAL

(N) MATERIAL/COATING

#### 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

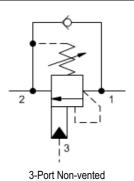
N Buna-N
E EPDM
V Viton

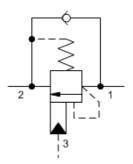
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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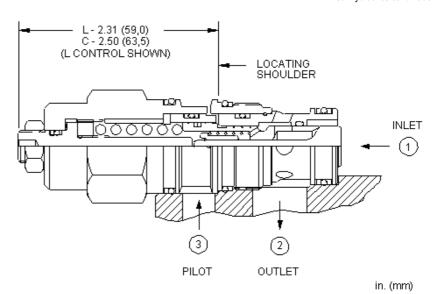


sunhydraulics.com/model/CBEG





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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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 Buna-N

(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

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

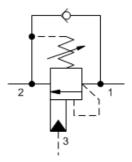
**E** EPDM V Viton

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

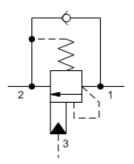
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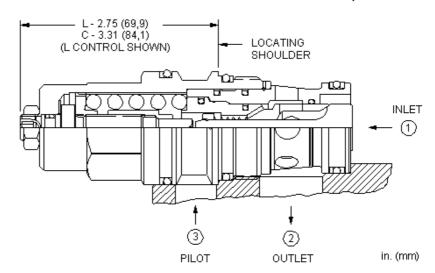
sunhydraulics.com/model/CBGG



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.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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 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

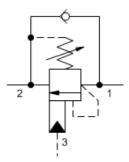
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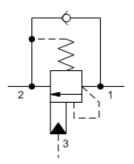




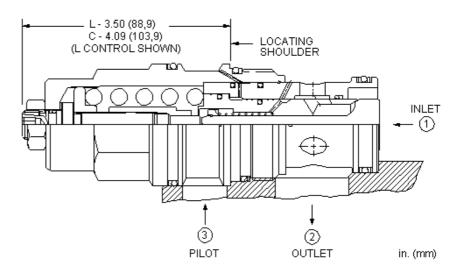
sunhydraulics.com/model/CBIG



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBIGLJN

(N) MATERIAL/COATING CONTROL (L) FUNCTIONAL SETTING RANGE (J) SEAL MATERIAL

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

- 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

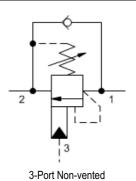
N Buna-N Viton

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

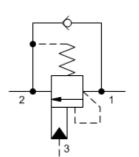
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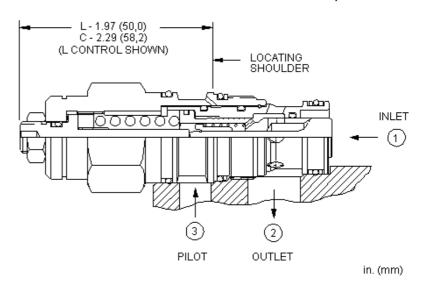
sunhydraulics.com/model/CBCH



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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	10:1
Maximum Recommended Load Pressure at Maximum Setting	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

L Standard Screw Adjustment

CONTROL

(L) FUNCTIONAL SETTING RANGE

(J) SEAL MATERIAL N Buna-N

(N) MATERIAL/COATING

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

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

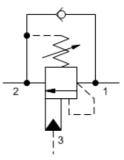
**E** EPDM V Viton

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

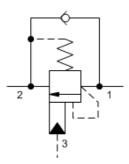
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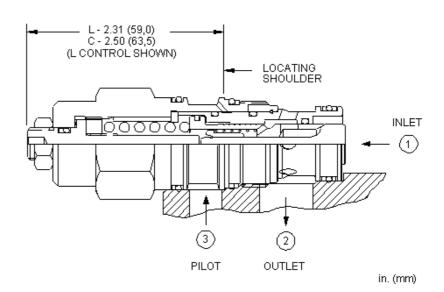
sunhydraulics.com/model/CBEH



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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 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

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

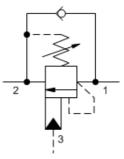
V Viton

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

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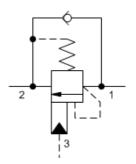


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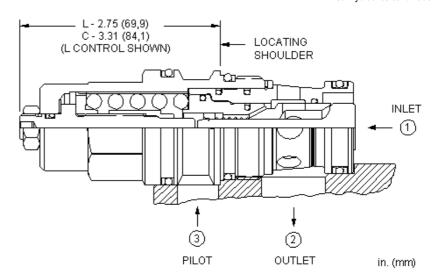


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3-Port Non-vented



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

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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBGHLJN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(J) SEAL MATERIAL

(N) MATERIAL/COATING

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

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

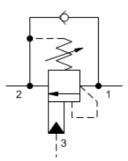
V Viton

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

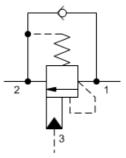
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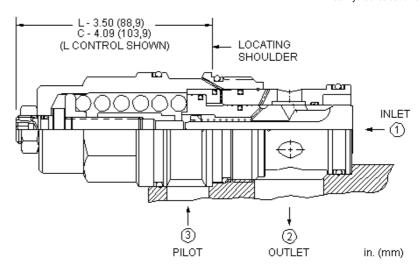
sunhydraulics.com/model/CBIH



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
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

L Standard Screw Adjustment C Tamper Resistant - Factory Set

CONTROL

(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

- C 2000 5000 psi w/4 psi Check (140 -350 bar w/ 0,3 bar Check), 3000 psi (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

N Buna-N **E** EPDM

V Viton

(J) SEAL MATERIAL

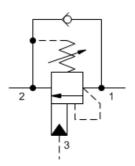
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

(N) MATERIAL/COATING

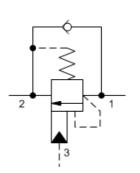
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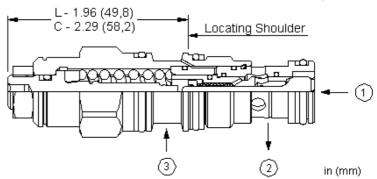
sunhydraulics.com/model/CBBB



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

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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

#### **CONFIGURATION OPTIONS**

# Model Code Example: CBBBLHN

L Standard Screw Adjustn C Tamper Resistant - Factory Set

CONTROL

(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

N Buna-N V Viton

(H) SEAL MATERIAL

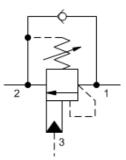
(N) MATERIAL/COATING

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

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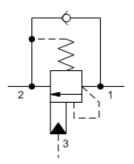


sunhydraulics.com/model/CBDB

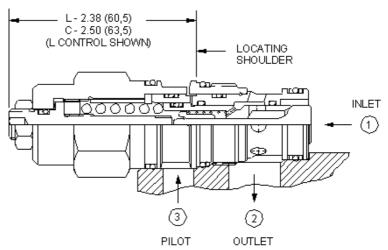


un hydraulics

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	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBDBLHN

N Buna-N

V Viton

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

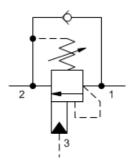
- 1000 4000 psi w/25 psi Check (70 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- 1000 4000 psi w/4 psi Check (70 -280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 1500 psi w/4 psi Check (28 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting
- I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

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

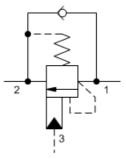
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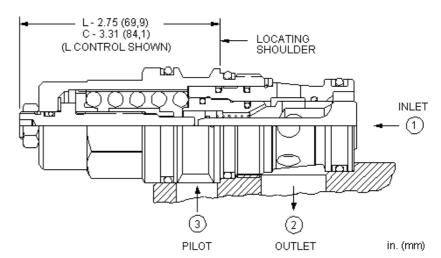
sunhydraulics.com/model/CBFB



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: CBFBLHN

L Standard Screw Adjustment

CONTROL

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

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL N Buna-N

**V** Viton

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

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

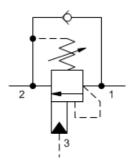
/LH Mild Steel, Zinc-Nickel

bar) Standard Setting

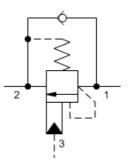
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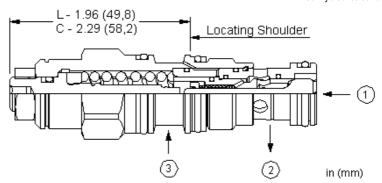
sunhydraulics.com/model/CBBL



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

CONTROL

(L) FUNCTIONAL SETTING RANGE

(J) SEAL MATERIAL

N Buna-N

V Viton

(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

(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

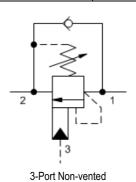
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

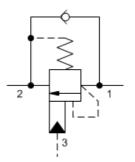
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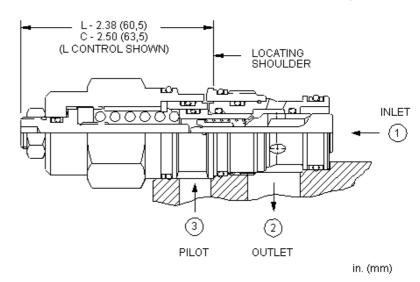


sunhydraulics.com/model/CBDL





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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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) SEAL MATERIAL

MATERIAL/COATING (N)

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

- 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
- K (1000 baz) Standard Setting heck (70 -175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

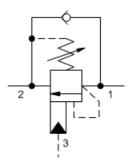
N Buna-N V Viton

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

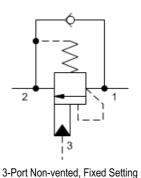
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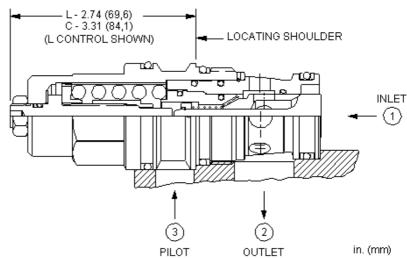


sunhydraulics.com/model/CBFL



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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 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 (210 bar) Standard Setting

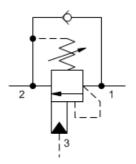
D 1000 - 2500 psi w/4 psi Check (70 -175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting

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

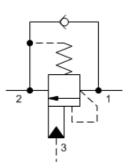
Standard Material/Coating
/LH Mild Steel, Zinc-Nickel

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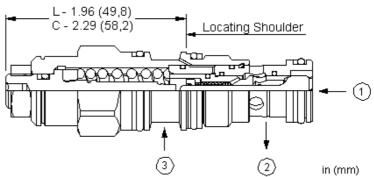
sunhydraulics.com/model/CBBC



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

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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

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

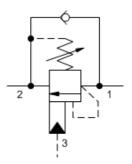
N Buna-N **E** EPDM V Viton

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

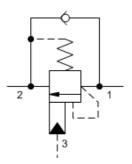
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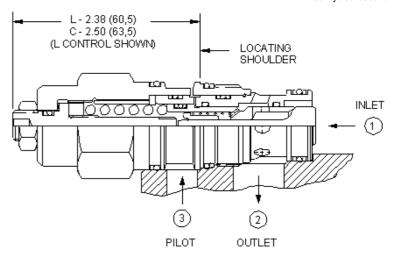
sunhydraulics.com/model/CBDC



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

## **CONFIGURATION OPTIONS**

## Model Code Example: CBDCLHN

N Buna-N

**E** EPDM

V Viton

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

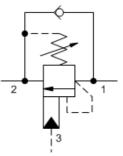
1000 - 4000 psi w/25 psi Check (70 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting

- 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

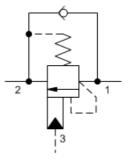
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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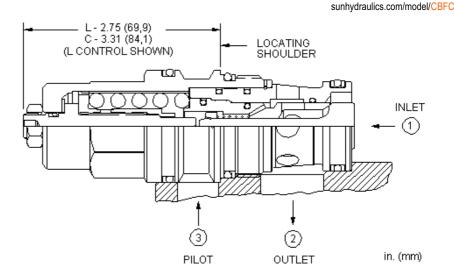




3-Port Non-vented



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

#### **CONFIGURATION OPTIONS**

## Model Code Example: CBFCLHN

(H) SEAL MATERIAL (N) MATERIAL/COATING CONTROL (L) FUNCTIONAL SETTING RANGE

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

- 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

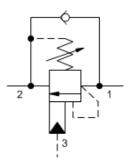
N Buna-N Viton

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

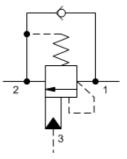
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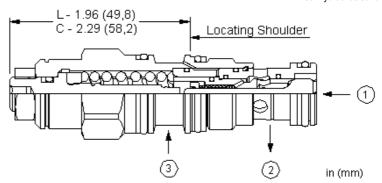
sunhydraulics.com/model/CBBD



3-Port Non-vented



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

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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

**NOTES** 

CONTROL

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

2000 - 5000 psi w/25 psi Check (140

(L) FUNCTIONAL SETTING RANGE

(J) SEAL MATERIAL

MATERIAL/COATING (N)

L Standard Screw Adjustment C Tamper Resistant - Factory Set

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

**E** EPDM V Viton

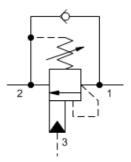
Standard Material/Coating /AP Stainless Steel. Passivated /LH Mild Steel, Zinc-Nickel

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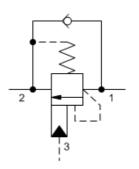




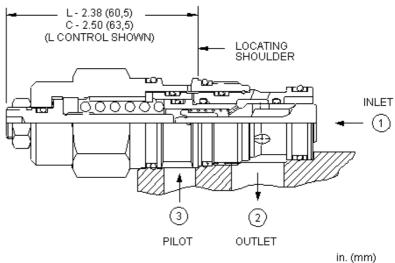
sunhydraulics.com/model/CBDD



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

#### **CONFIGURATION OPTIONS**

## Model Code Example: CBDDLJN

CONTROL (N) MATERIAL/COATING (L) FUNCTIONAL SETTING RANGE (J) SEAL MATERIAL

L Standard Screw Adjustment

2000 - 5000 psi w/25 psi Check (140 350 bar w/ 1,7 bar Check), 3000 psi 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 -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

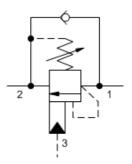
N Buna-N Standard Material/Coating Viton /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

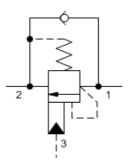
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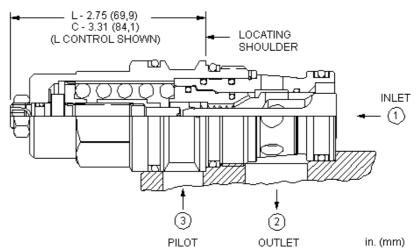
sunhydraulics.com/model/CBFD



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

## **CONFIGURATION OPTIONS**

# Model Code Example: CBFDLJN

CONTROL

(L) FUNCTIONAL SETTING RANGE
J. 2000 - 5000 psi w/25 psi Check (140

(J) SEAL MATERIAL

(N) MATERIAL/COATING

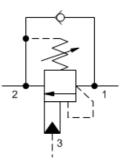
L Standard Screw AdjustmentC Tamper Resistant - Factory Set

 J 2000 - 5000 psi w/25 psi Check (140 -350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting

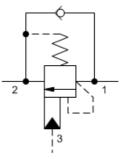
- C 2000 5000 psi w/4 psi Check (140 -350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- D 1000 2500 psi w/4 psi Check (70 -175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting
- K 1000 2500 psi w/25 psi Check (70 -175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

N Buna-N V Viton Standard Material/Coatin
/LH Mild Steel, Zinc-Nickel

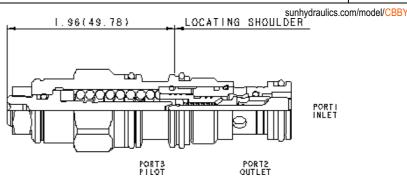
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3-Port Non-vented



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

#### **CONFIGURATION OPTIONS**

C Tamper Resistant - Factory Set

# Model Code Example: CBBYLHN

L Standard Screw Adjustment

CONTROL

H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi

(L) FUNCTIONAL SETTING RANGE

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

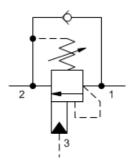
Standa

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

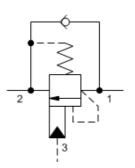
MATERIAL/COATING

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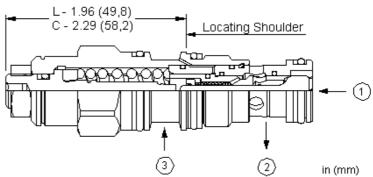
sunhydraulics.com/model/CBBA



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

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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

# **CONFIGURATION OPTIONS**

#### Model Code Example: CBBALHN

(H) SEAL MATERIAL

V Viton

L Standard Screw Adjustn C Tamper Resistant - Factory Set

CONTROL

(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

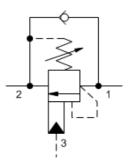
N Buna-N

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

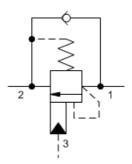
(N) MATERIAL/COATING

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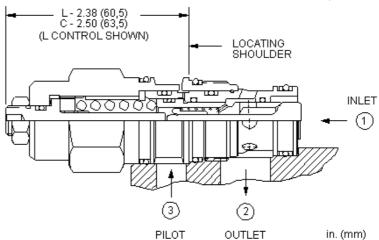
sunhydraulics.com/model/CBDA



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

## **CONFIGURATION OPTIONS**

## Model Code Example: CBDALHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

N Buna-N

**V** Viton

(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

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

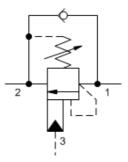
400 - 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70

bar) Standard Setting

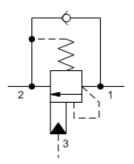
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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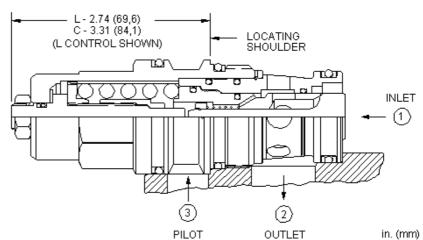
sunhydraulics.com/model/CBFA



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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 Buna-N

V Viton

(N) MATERIAL/COATING

L Standard Screw Adjustr 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

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

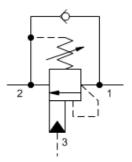
bar) Standard Setting

/LH Mild Steel, Zinc-Nickel

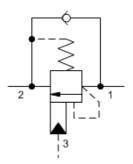
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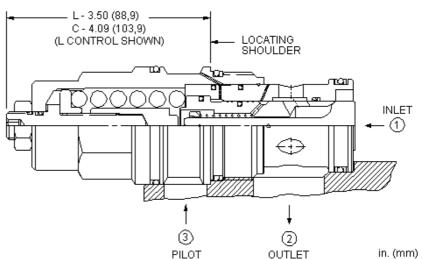




3-Port Non-vented



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

(N)

#### **CONFIGURATION OPTIONS**

## Model Code Example: CBHALHN

(H) SEAL MATERIAL

Viton

CONTROL (L) FUNCTIONAL SETTING RANGE 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

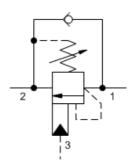
N Buna-N

- 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

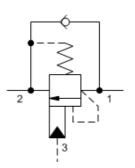
I 400 - 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting

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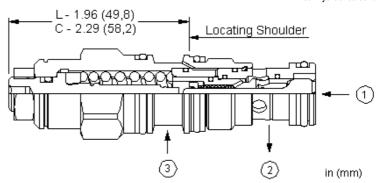
sunhydraulics.com/model/CBBG



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

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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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 Adjustn 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

- 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

/AP Stainless Steel, Passivated

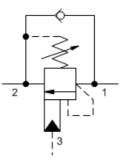
N Buna-N V Viton /LH Mild Steel, Zinc-Nickel

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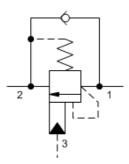




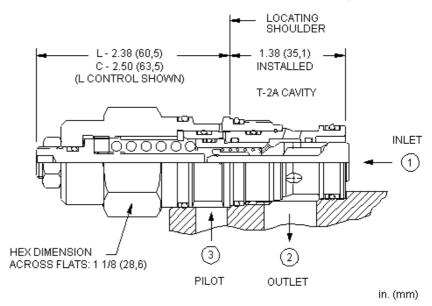
sunhydraulics.com/model/CBDG



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

#### **CONFIGURATION OPTIONS**

## Model Code Example: CBDGLJN

L Standard Screw Adjustment C Tamper Resistant - Factory Set

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CONTROL

(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

- 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

(J) SEAL MATERIAL V Viton

(N) MATERIAL/COATING Standard Material/Coating

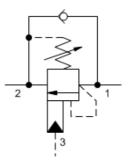
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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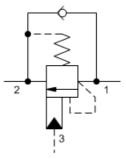
# SERIES 3 / CAPACITY: 60 L/min. / CAVITY: T-17A



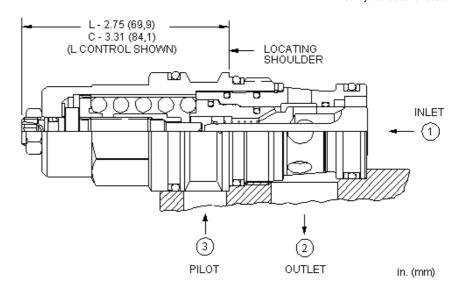
sunhydraulics.com/model/CBFG



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

(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

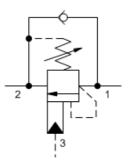
  D 1000 2500 psi w/4 psi Check (70 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting
- K 1000 2500 psi w/25 psi Check (70 -175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

N Buna-NStandard Material/CoatingV Viton/LH Mild Steel, Zinc-Nickel

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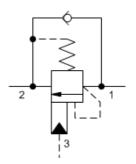


sunhydraulics.com/model/CBHG

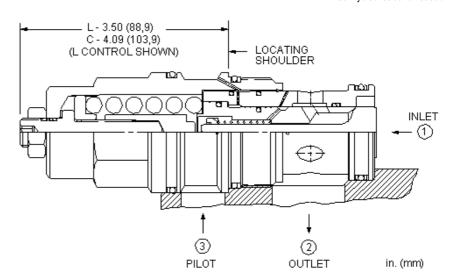


un hydraulics"

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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

## Model Code Example: CBHGLJN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(J) SEAL MATERIAL

(N)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

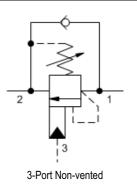
J 2000 - 5000 psi w/25 psi Check (140 -350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting

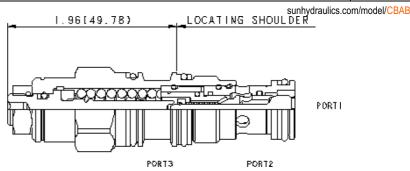
- C 2000 5000 psi w/4 psi Check (140 -350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- D 1000 2500 psi w/4 psi Check (70 -175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting
- K 1000 2500 psi w/25 psi Check (70 -175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

N Buna-N
V Viton

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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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

- C Tamper Resistant Factory Set
- R Lockwired Screw Adjustment
- 1000 4000 psi w/25 psi Check (70 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- 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

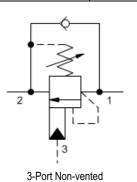
**V** Viton

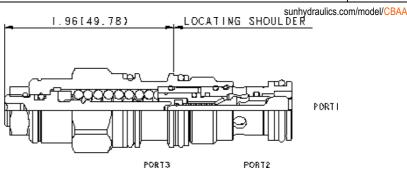
/AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

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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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

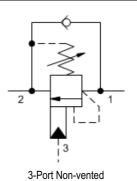
- C Tamper Resistant Factory Set
- R Lockwired Screw Adjustment
- 1000 4000 psi w/25 psi Check (70 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- 1000 4000 psi w/4 psi Check (70 -280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 1500 psi w/4 psi Check (28 105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

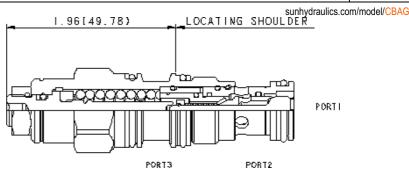
**V** Viton

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

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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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

#### 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

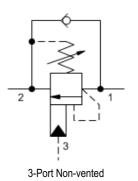
N Buna-NV Viton

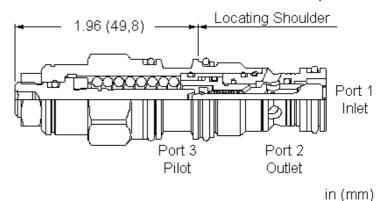
Standard Material/Coating
/LH Mild Steel, Zinc-Nickel

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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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

## **CONFIGURATION OPTIONS**

## Model Code Example: CBAHLJN

L Standard Screw Adjustment C Tamper Resistant - Factory Set

CONTROL

(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 -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 Viton

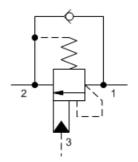
Standard Material/Coating

(N) MATERIAL/COATING

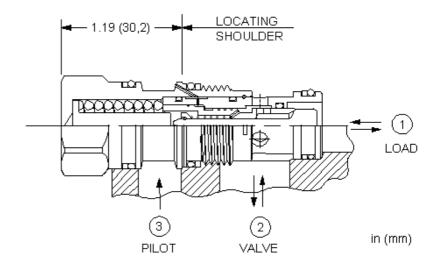
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

## **CONFIGURATION OPTIONS**

**Z** 4125 - 4900 psi (285 - 340 bar)

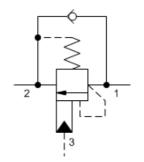
## Model Code Example: CBCLXMN

FIXED PRESSURE RANGE	M) SEAL MATERIAL	/NI\	MATERIAL (COATING
FIXED PRESSURE RANGE	IVI) SEAL WATERIAL	(IN)	MATERIAL/COATING

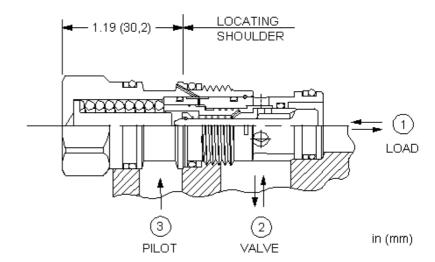
()	(,	
<b>M</b> 4700 - 5600 psi (325 - 390 bar)	N Buna-N	Standard Material/Coating
V 3200 - 3800 psi (220 - 260 bar)	<b>E</b> EPDM	/LH Mild Steel, Zinc-Nickel
X 3500 - 4200 psi (245 - 290 bar)	<b>V</b> Viton	

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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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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

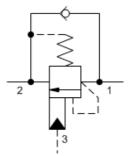
(N) MATERIAL/COATING

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

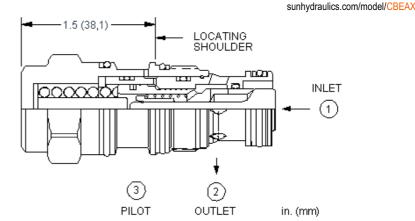
N Buna-N
E EPDM
V Viton

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

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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	3:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/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

**P** 2250 - 2680 psi (155 - 185 bar)

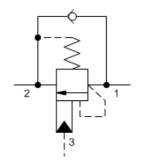
Standard Material/Coating

V Viton /LH Mild Steel, Zinc-Nickel

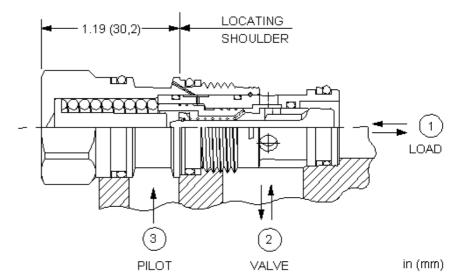
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sunhydraulics.com/model/CBCGX



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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

#### **CONFIGURATION OPTIONS**

**Z** 4125 - 4900 psi (285 - 340 bar)

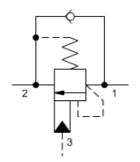
# Model Code Example: CBCGXMN

FIXED PRESSURE RANGE (M) SEAL MATERIAL (N) MATERIAL/COATING

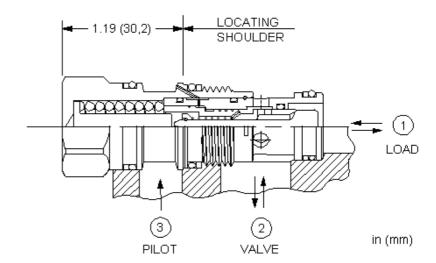
FIXED FRESSURE RANGE	(IVI)	SEAL MATERIAL	(14)	MATERIAL/COATING	
<b>M</b> 4700 - 5600 psi (325 - 390 bar)		N Buna-N		Standard Material/Coating	
V 3200 - 3800 psi (220 - 260 bar)		<b>E</b> EPDM		/LH Mild Steel, Zinc-Nickel	
X 3500 - 4200 psi (245 - 290 bar)		<b>V</b> Viton			

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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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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

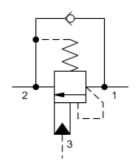
M 4700 - 5600 psi (325 - 390 bar) V 3200 - 3800 psi (220 - 260 bar)

**X** 3500 - 4200 psi (245 - 290 bar) **Z** 4125 - 4900 psi (285 - 340 bar) N Buna-NE EPDMV Viton

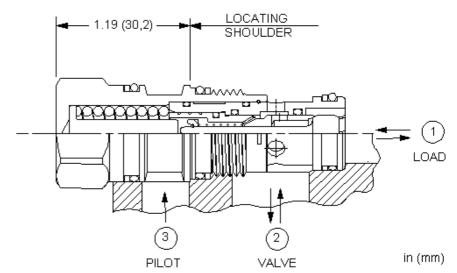
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

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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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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) MATERIAL/COATING

M 4700 - 5600 psi (325 - 390 bar) V 3200 - 3800 psi (220 - 260 bar) N Buna-N V Viton Standard Material/Coating
/LH Mild Steel, Zinc-Nickel

X 3500 - 4200 psi (245 - 290 bar)

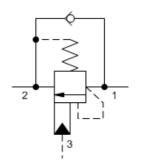
**Z** 4125 - 4900 psi (285 - 340 bar)

si (245 - 290 bar)

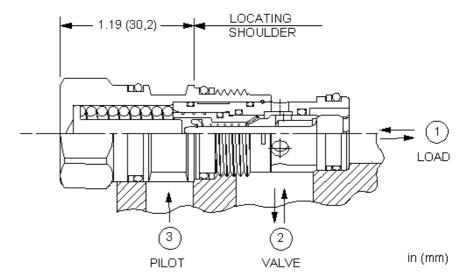
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3-Port Non-vented, Fixed Setting



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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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

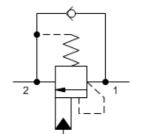
N 2900 - 3500 psi (200 - 245 bar) P 2250 - 2680 psi (155 - 185 bar)

N Buna-NE EPDMV Viton

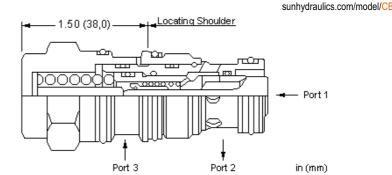
Standard Material/Coat
/LH Mild Steel, Zinc-Nickel

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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	3:1
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/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)

P 2250 - 2680 psi (155 - 185 bar)

N Buna-N

Standard Material/Coating

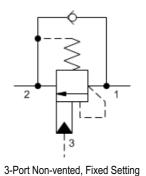
**E** EPDM

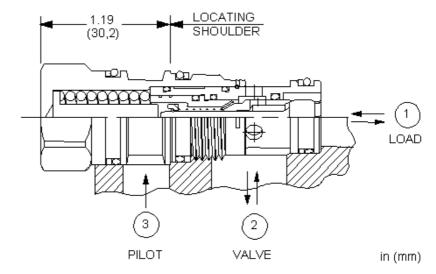
/LH Mild Steel, Zinc-Nickel

**V** Viton

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sunhydraulics.com/model/CBBDX





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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

# **CONFIGURATION OPTIONS**

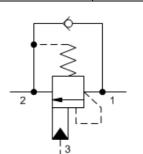
**Z** 4125 - 4900 psi (285 - 340 bar)

## Model Code Example: CBBDXXN

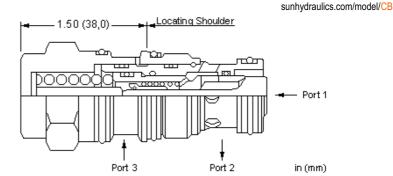
FIXED PRESSURE RANGE (X)	) SEAL MATERIAL	(N)	MATERIAL/COAT
--------------------------	-----------------	-----	---------------

X 3500 - 4200 psi (245 - 290 bar)	N Buna-N	Standard Material/Coating
<b>M</b> 4700 - 5600 psi (325 - 390 bar)	E EPDM	/AP Stainless Steel, Passivated
V 3200 - 3800 psi (220 - 260 bar)	<b>V</b> Viton	

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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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/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: CBDDXXN

FIXED PRESSURE RANGE (X) SEAL MATERIAL (N) MATERIAL/COATING

V Viton

X 3500 - 4200 psi (245 - 290 bar) M 4700 - 5600 psi (325 - 390 bar)

4 0000 0000 psi (000 000 bai)

V 3200 - 3800 psi (220 - 260 bar)

**Z** 4125 - 4900 psi (285 - 340 bar)

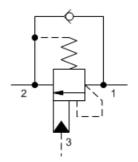
N Buna-N Standard Material/Coating

/LH Mild Steel, Zinc-Nickel

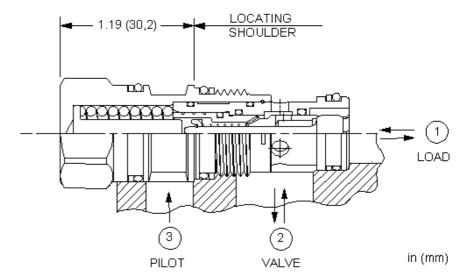
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sunhydraulics.com/model/CBBAX



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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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

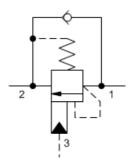
N 2900 - 3500 psi (200 - 245 bar) P 2250 - 2680 psi (155 - 185 bar) N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

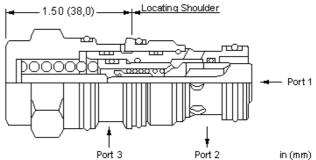
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sunhydraulics.com/model/CBDAX



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/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)

N Buna-N

Standard Material/Coating

P 2250 - 2680 psi (155 - 185 bar)

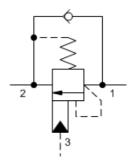
**V** Viton

/LH Mild Steel, Zinc-Nickel

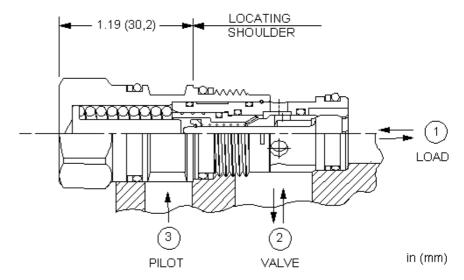
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sunhydraulics.com/model/CBB



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
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

## **CONFIGURATION OPTIONS**

# Model Code Example: CBBGXMN

**FIXED PRESSURE RANGE** (N) MATERIAL/COATING (M) SEAL MATERIAL

**M** 4700 - 5600 psi (325 - 390 bar)

N Buna-N **V** Viton

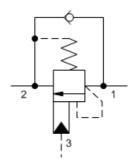
Standard Material/Coating /LH Mild Steel, Zinc-Nickel

V 3200 - 3800 psi (220 - 260 bar) X 3500 - 4200 psi (245 - 290 bar)

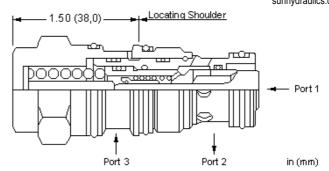
**Z** 4125 - 4900 psi (285 - 340 bar)

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sunhydraulics.com/model/CBDG



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
Maximum Recommended Load Pressure at Maximum Setting	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/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

(X) SEAL MATERIAL

(N) MATERIAL/COATING

X 3500 - 4200 psi (245 - 290 bar)

**M** 4700 - 5600 psi (325 - 390 bar)

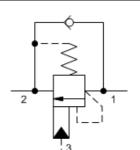
V 3200 - 3800 psi (220 - 260 bar)

**Z** 4125 - 4900 psi (285 - 340 bar)

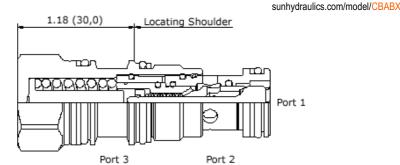
Standard Material/Coating

V Viton /LH Mild Steel, Zinc-Nickel

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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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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)

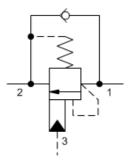
N Buna-N

Standard Material/Coating

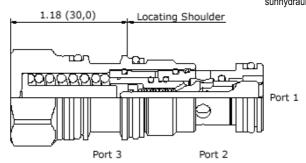
**P** 2250 - 2680 psi (155 - 185 bar) **V** Viton /LH Mild Steel, Zinc-Nickel

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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	3:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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

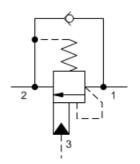
N 2900 - 3500 psi (200 - 245 bar) **P** 2250 - 2680 psi (155 - 185 bar) N Buna-N

Standard Material/Coating

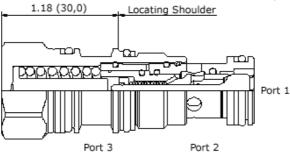
V Viton /LH Mild Steel, Zinc-Nickel

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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	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

### **CONFIGURATION OPTIONS**

Model Code Example: CBAGXMN

FIXED PRESSURE RANGE (M) SEAL MATERIAL (N) MATERIAL/COATING

N Buna-N

V Viton

**M** 4700 - 5600 psi (325 - 390 bar)

V 3200 - 3800 psi (220 - 260 bar)

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

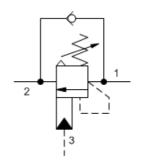
**Z** 4125 - 4900 psi (285 - 340 bar)

Standard Material/Coating

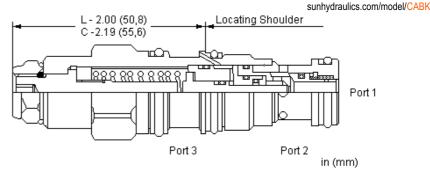
/LH Mild Steel, Zinc-Nickel

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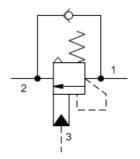


3-Port Atmospherically Referenced



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.



3-Port Atmospherically Referenced, Non-adjustable

#### **TECHNICAL DATA**

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

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	3
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

### **CONFIGURATION OPTIONS**

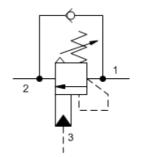
## Model Code Example: CABKLHN

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting L Standard Screw Adjustment N Buna-N

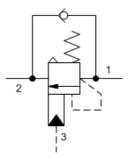
C Tamper Resistant - Factory Set Viton

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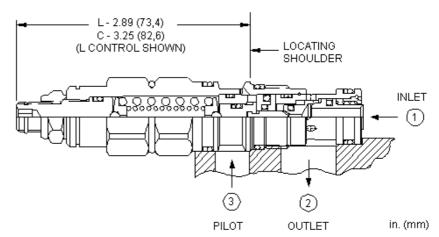
sunhydraulics.com/model/CACK



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	Viton: 990211006

## **CONFIGURATION OPTIONS**

# Model Code Example: CACKLHN

L Standard Screw Adjustment

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

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

N Buna-N Viton

Standard Material/Coating

400 - 1500 psi (28 - 105 bar), 1000 psi

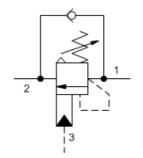
(70 bar) Standard Setting

/LH Mild Steel, Zinc-Nickel

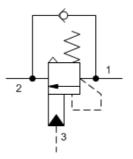
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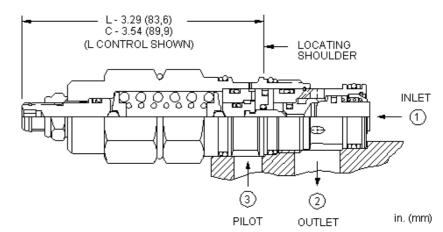
sunhydraulics.com/model/C



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006

#### **CONFIGURATION OPTIONS**

# Model Code Example: CAEKLHN

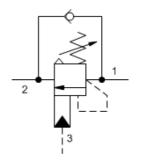
CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL 1000 - 4000 psi (70 - 280 bar), 3000 ps (210 bar) Standard Setting L Standard Screw Adjustment N Buna-N

C Tamper Resistant - Factory Set

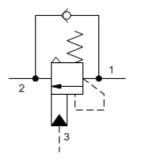
400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

V Viton

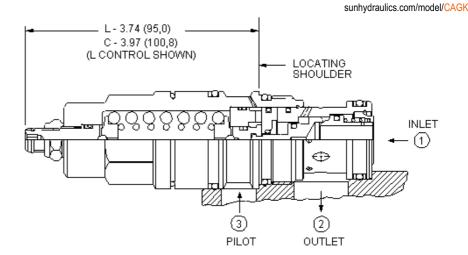
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3-Port Atmospherically Referenced



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990117007
Seal kit - Cartridge	Viton: 990117006

## **CONFIGURATION OPTIONS**

## Model Code Example: CAGKLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N)

C Tamper Resistant - Factory Set

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

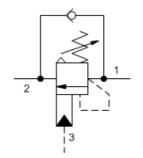
N Buna-N
V Viton

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

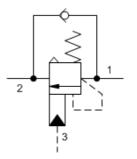
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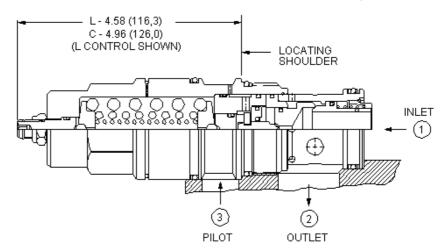
sunhydraulics.com/model/CAIK



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,5 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990119007
Seal kit - Cartridge	Polyurethane: 990119002
Seal kit - Cartridge	Viton: 990119006

## **CONFIGURATION OPTIONS**

## Model Code Example: CAIKLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

C Tamper Resistant - Factory Set

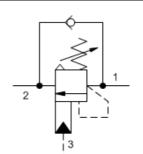
1000 - 4000 psi (70 - 280 bar), 3000 ps (210 bar) Standard Setting

V Viton

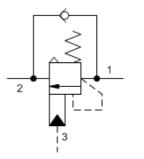
400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

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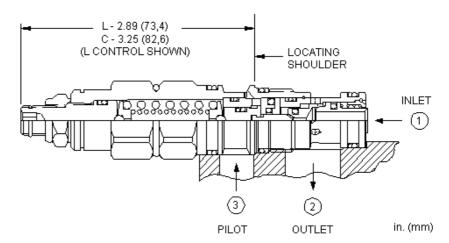
sunhydraulics.com/model/C



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	Viton: 990211006

# **CONFIGURATION OPTIONS**

## Model Code Example: CACLLFN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(F) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

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

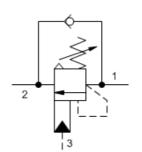
V Viton

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

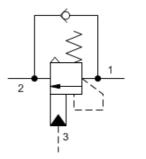
/LH Mild Steel, Zinc-Nickel

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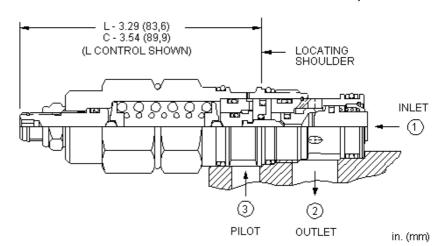
sunhydraulics.com/model/CAEL



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006

## **CONFIGURATION OPTIONS**

## **Model Code Example: CAELLGN**

L Standard Screw Adjustment C Tamper Resistant - Factory Set

CONTROL

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

(L) FUNCTIONAL SETTING RANGE

(G) SEAL MATERIAL N Buna-N V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

(N) MATERIAL/COATING

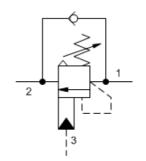
1000 - 2500 psi (70 - 175 bar), 2000 psi

(140 bar) Standard Setting

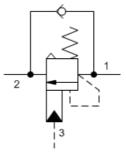
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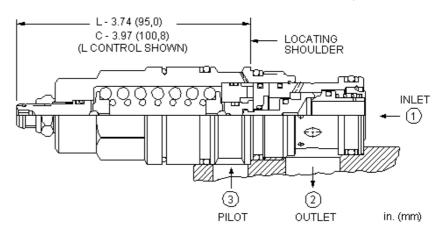
sunhydraulics.com/model/CAGL



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990117007
Seal kit - Cartridge	Viton: 990117006

## **CONFIGURATION OPTIONS**

Model Code Example: CAGLLGN

CONTROL (L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL (N) MATERIAL/COATING

C Tamper Resistant - Factory Set

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

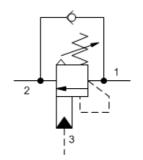
N Buna-N V Viton Standard Material/Coating
/AP Stainless Steel, Passivated

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

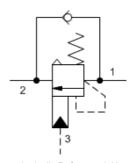
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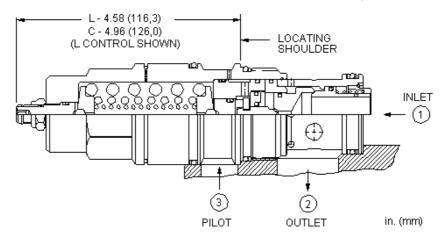
sunhydraulics.com/model/CAIL



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,5 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990119007
Seal kit - Cartridge	Polyurethane: 990119002
Seal kit - Cartridge	Viton: 990119006

## **CONFIGURATION OPTIONS**

## Model Code Example: CAILLGN

CONTROL (L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

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

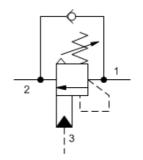
F 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting N Buna-N V Viton Standard Material/Coating
/LH Mild Steel, Zinc-Nickel

(N) MATERIAL/COATING

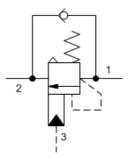
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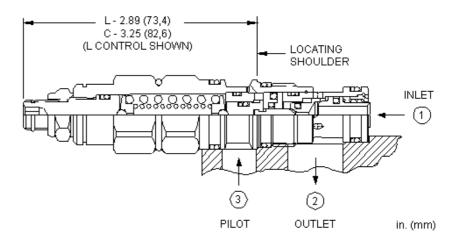
sunhydraulics.com/model/CACA



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	Viton: 990211006

## **CONFIGURATION OPTIONS**

## Model Code Example: CACALHN

L Standard Screw Adjustment

CONTROL

(L) FUNCTIONAL SETTING RANGE (I

(H) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

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

**V** Viton

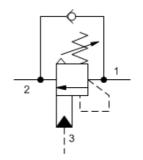
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

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

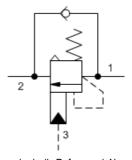
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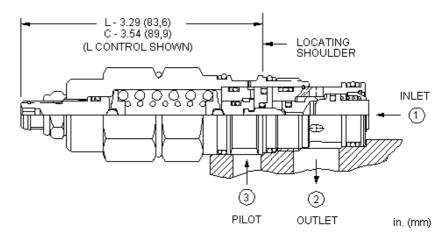
sunhydraulics.com/model/0



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006

### **CONFIGURATION OPTIONS**

## Model Code Example: CAEALHN

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL N Buna-N

(N) MATERIAL/COATING

L Standard Screw Adjustment C Tamper Resistant - Factory Set

CONTROL

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

**V** Viton

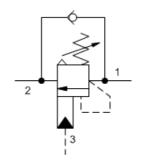
IAP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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

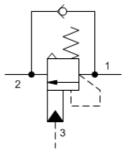
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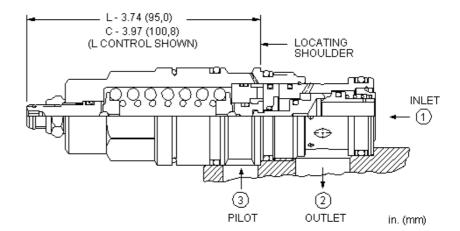
sunhydraulics.com/model/CAGA



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990117007
Seal kit - Cartridge	Viton: 990117006

## **CONFIGURATION OPTIONS**

## Model Code Example: CAGALHN

L Standard Screw Adjustment C Tamper Resistant - Factory Set

CONTROL

1000 - 4000 psi (70 - 280 bar), 300<u>0 p</u>s (210 bar) Standard Setting

400 - 1500 psi (28 - 105 bar), 1000 psi

N Buna-N

**SEAL MATERIAL** 

(N) MATERIAL/COATING

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

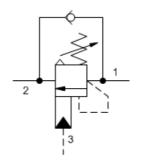
(70 bar) Standard Setting

(L) FUNCTIONAL SETTING RANGE

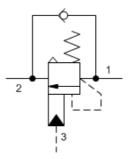
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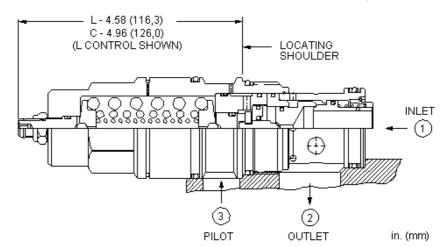
sunhydraulics.com/model/CAIA



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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,5 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990119007
Seal kit - Cartridge	Polyurethane: 990119002
Seal kit - Cartridge	Viton: 990119006

## **CONFIGURATION OPTIONS**

## Model Code Example: CAIALHN

I Standard Scrow Adjust

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

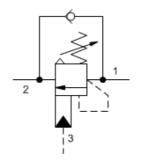
H 1000 - 4000 psi (70 - 280 bar), 3000 ps (210 bar) Standard Setting N Buna-N V Viton

/AP Stainless Steel, Passivated

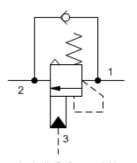
 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

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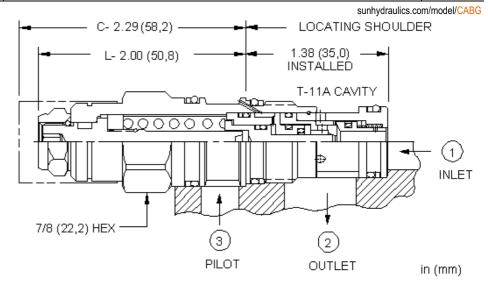




3-Port Atmospherically Referenced



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	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	3
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

## **CONFIGURATION OPTIONS**

## Model Code Example: CABGLHN

L Standard Screw Adjustment

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

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

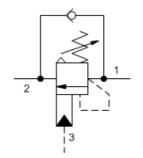
V Viton

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

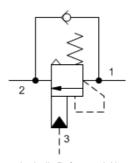
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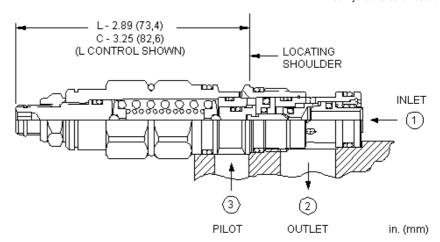
sunhydraulics.com/model/CACG



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Viton: 990211006

## **CONFIGURATION OPTIONS**

## Model Code Example: CACGLGN

CONTROL

**G** 2000 - 6000 psi (140 - 420 bar), 4000

(L) FUNCTIONAL SETTING RANGE

(G) SEAL MATERIAL

N Buna-N

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

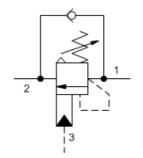
psi (280 bar) Standard Setting 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

E EPDM V Viton /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

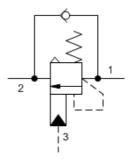
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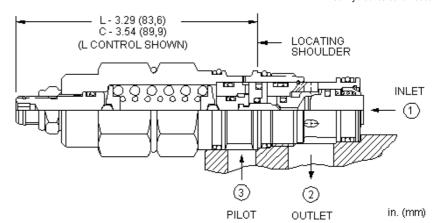
sunhydraulics.com/model/CAEG



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006

## **CONFIGURATION OPTIONS**

# Model Code Example: CAEGLGN

CONTROL (L) 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

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

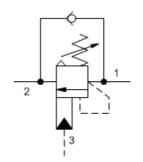
V Viton

Standard Material/Coating

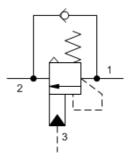
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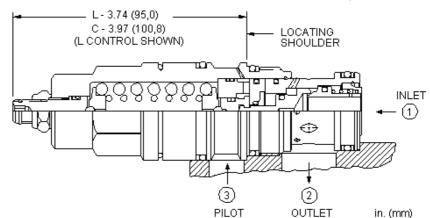
sunhydraulics.com/model/CAGG



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990117007
Seal kit - Cartridge	Viton: 990117006

## **CONFIGURATION OPTIONS**

## Model Code Example: CAGGLGN

C Tamper Resistant - Factory Set

CONTROL

(L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL psi (280 bar) Standard Setting

N Buna-N V Viton

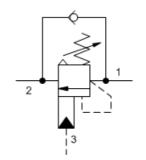
(N) MATERIAL/COATING

/AP Stainless Steel, Passivated

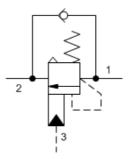
1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

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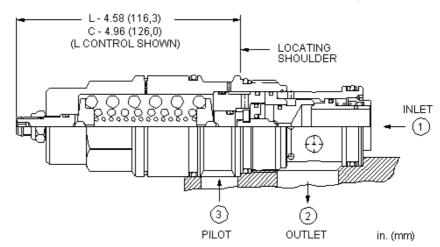
sunhydraulics.com/model/CAIG



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,5 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Seal kit - Cartridge	Buna: 990119007
Seal kit - Cartridge	Polyurethane: 990119002
Seal kit - Cartridge	Viton: 990119006

(N)

#### **CONFIGURATION OPTIONS**

Model Code Example: CAIGLGN

L Standard Screw Adjustment C Tamper Resistant - Factory Set

CONTROL

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

(L) FUNCTIONAL SETTING RANGE

N Buna-N Viton

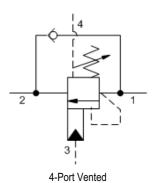
(G) SEAL MATERIAL

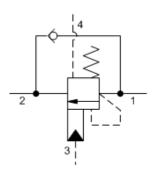
1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

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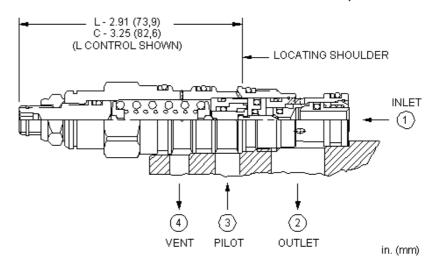


sunhydraulics.com/model/CWCK





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

# **CONFIGURATION OPTIONS**

## Model Code Example: CWCKLHN

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

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

(70 bar) Standard Setting

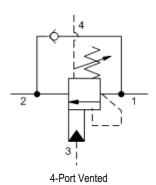
(210 bar) Standard Setting 400 - 1500 psi (28 - 105 bar), 1000 psi

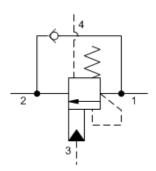
N Buna-N V Viton Standard Material/Coating
/AP Stainless Steel, Passivated

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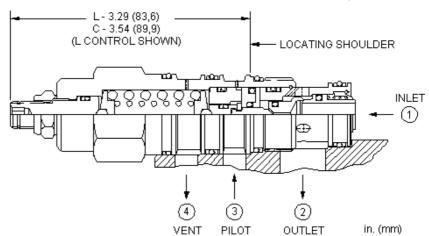


sunhydraulics.com/model/CWEK





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

## **CONFIGURATION OPTIONS**

## Model Code Example: CWEKLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE ( H 1000 - 4000 psi (70 - 280 bar), 3000 p

(H) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

1 1000 - 4000 psi (70 - 280 bar), 3000 ps (210 bar) Standard Setting

V Viton

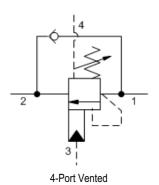
/LH Mild Steel, Zinc-Nickel

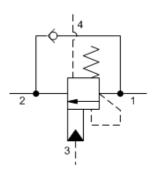
I 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

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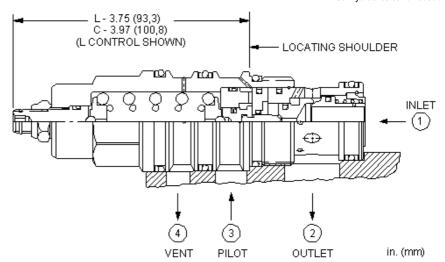


sunhydraulics.com/model/CWGK





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

# **CONFIGURATION OPTIONS**

## Model Code Example: CWGKLHN

CONTROL

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

(L) FUNCTIONAL SETTING RANGE

N Buna-N

(H) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

400 - 1500 psi (28 - 105 bar), 1000 psi

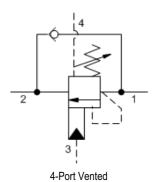
(70 bar) Standard Setting

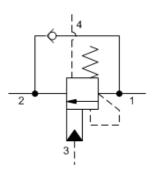
V Viton /LH Mild Steel, Zinc-Nickel

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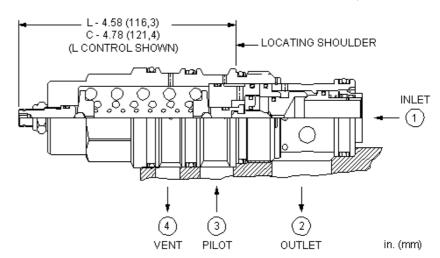


sunhydraulics.com/model/CWIK





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,5 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

# **CONFIGURATION OPTIONS**

## Model Code Example: CWIKLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment C Tamper Resistant - Factory Set

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

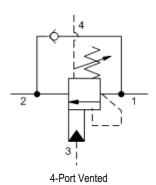
N Buna-N V Viton

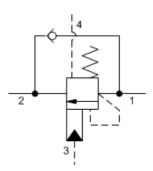
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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

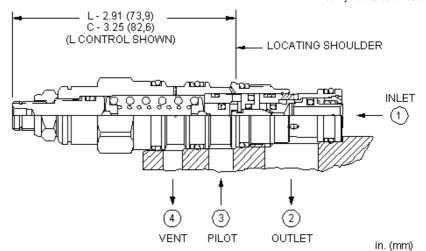
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sunhydraulics.com/model/CWCL





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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

## **CONFIGURATION OPTIONS**

**Model Code Example: CWCLLGN** 

CONTROL

(L) FUNCTIONAL SETTING RANGE

(G) SEAL MATERIAL

MATERIAL/COATING

L Standard Screw Adjustment C Tamper Resistant - Factory Set G 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting

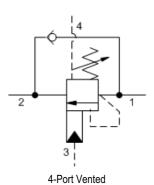
N Buna-N V Viton

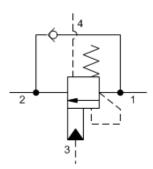
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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

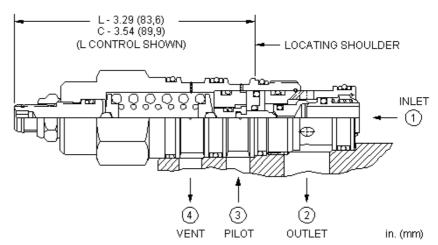
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sunhydraulics.com/model/CWEL





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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

## **CONFIGURATION OPTIONS**

## Model Code Example: CWELLGN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(G) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

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

N Buna-N V Viton

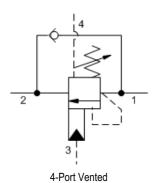
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

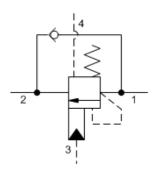
1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

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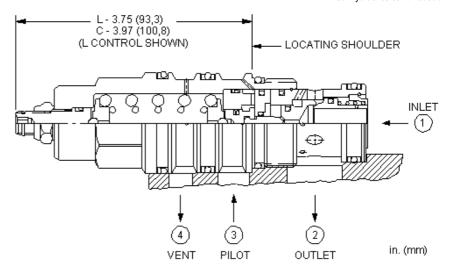


sunhydraulics.com/model/CWGL





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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

# **CONFIGURATION OPTIONS**

## Model Code Example: CWGLLGN

CONTROL (L) 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

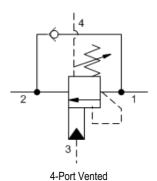
F 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting N Buna-N
V Viton

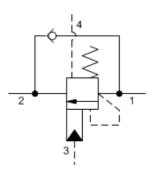
Standard Material/Coating
/AP Stainless Steel, Passivated

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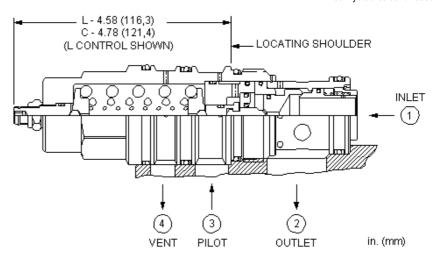


sunhydraulics.com/model/CWIL





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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,5 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

## **CONFIGURATION OPTIONS**

## Model Code Example: CWILLGN

CONTROL

(L) 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
V Viton

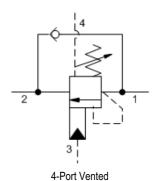
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

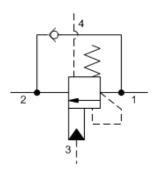
F 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

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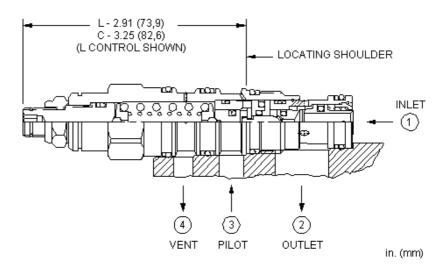


sunhydraulics.com/model/CWCA





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

## **CONFIGURATION OPTIONS**

## Model Code Example: CWCALHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

**H** 1000 - 4000 psi (70 - 280 bar), 3000 p (210 bar) Standard Setting N Buna-N V Viton

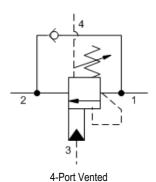
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

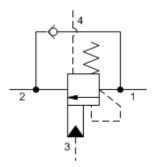
I 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

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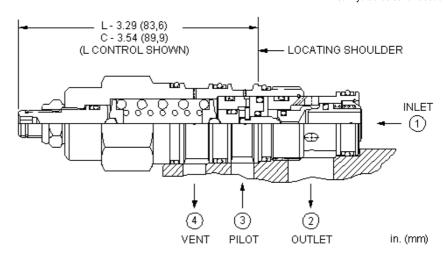


sunhydraulics.com/model/CWEA





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

## **CONFIGURATION OPTIONS**

CONTROL

## Model Code Example: CWEALHN

(L) FUNCTIONAL SETTING RANGE

C Tamper Resistant - Factory Set

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

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

V Viton

(H) SEAL MATERIAL

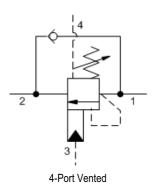
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

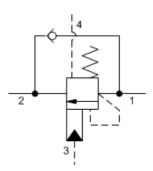
(N) MATERIAL/COATING

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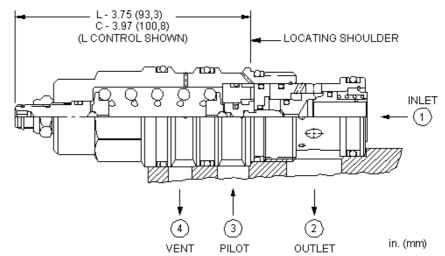


sunhydraulics.com/model/CWGA





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

# **CONFIGURATION OPTIONS**

# Model Code Example: CWGALHN

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

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

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

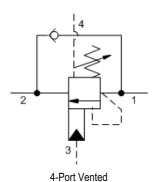
N Buna-NE EPDMV Viton

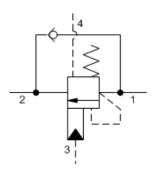
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

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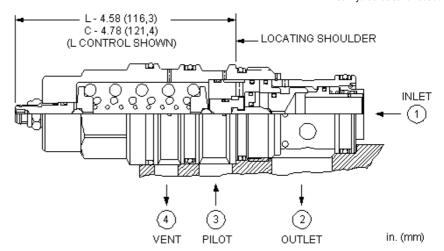


sunhydraulics.com/model/CWIA





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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,5 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

# **CONFIGURATION OPTIONS**

# Model Code Example: CWIALHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment C Tamper Resistant - Factory Set

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

E FPDM

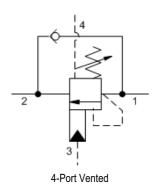
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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

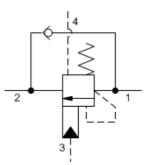
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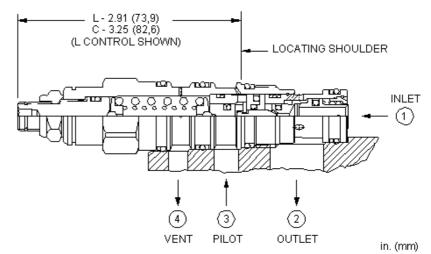
sunhydraulics.com/model/CWCG



un hydraulics"



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

## **CONFIGURATION OPTIONS**

## Model Code Example: CWCGLGN

CONTROL (L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

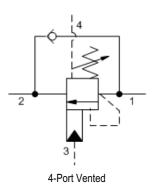
**G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting

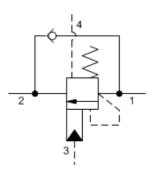
1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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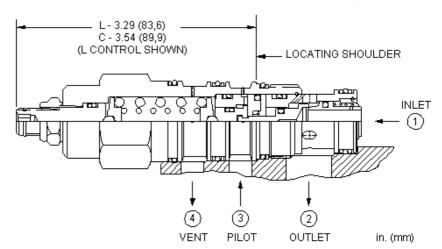


sunhydraulics.com/model/CWEG





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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

### **CONFIGURATION OPTIONS**

Model Code Example: CWEGLGN

L Standard Screw Adjustment C Tamper Resistant - Factory Set

CONTROL

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

(L) FUNCTIONAL SETTING RANGE

N Buna-N Viton

(G) SEAL MATERIAL

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

(N) MATERIAL/COATING

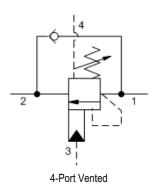
1000 - 2500 psi (70 - 175 bar), 2000 psi

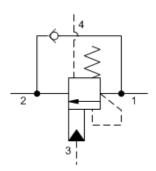
(140 bar) Standard Setting

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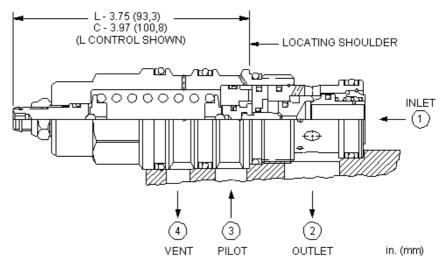


sunhydraulics.com/model/CWGG





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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

## **CONFIGURATION OPTIONS**

Model Code Example: CWGGLGN

CONTROL (L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL

C Tamper Resistant - Factory Set

**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

V Viton

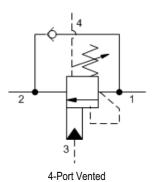
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

(N) MATERIAL/COATING

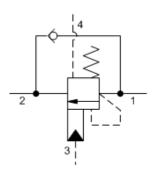
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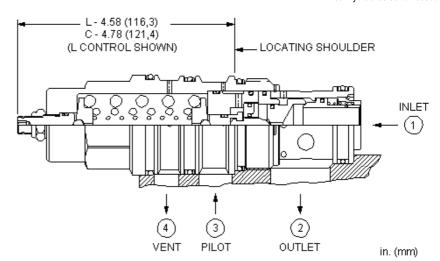
sunhydraulics.com/model/CWIG



un hydraulics"



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	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,5 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

## **CONFIGURATION OPTIONS**

Model Code Example: CWIGLGN

CONTROL

L Standard Screw Adjustment

(L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL

G 2000 - 6000 psi (140 - 420 bar), 4000 N Buna-N

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

C Tamper Resistant - Factory Set

psi (280 bar) Standard Setting

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

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

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

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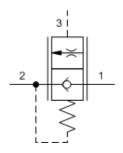


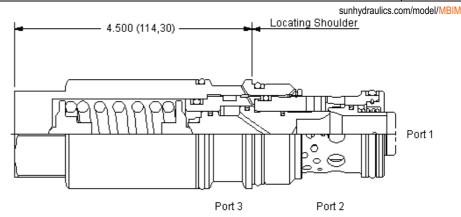


Balanced, load control valve

# SERIES 4 / CAPACITY: 480 L/min. / CAVITY: T-19A







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	350 bar
Maximum Valve Leakage at Reseat	See Technical Features
Check Cracking Pressure	1,7 bar

#### **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)

- E 75 psi (5 bar)
- **G** 100 psi (7 bar)
- **H** 200 psi (14 bar)
- I 300 psi (20 bar)
- M 525 psi (36,7 bar)

N Buna-N
E EPDM

**V** Viton

Standard Material/Coating

/AP Stainless Steel, Passivated

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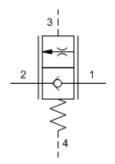


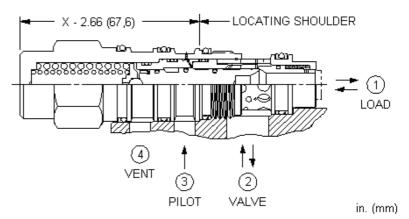
Vented, balanced, load control valve

SERIES 2 / CAPACITY: 120 L/min. / CAVITY: T-22A



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	350 bar	
Maximum Valve Leakage at Reseat	See Technical Features	
Check Cracking Pressure	1,7 bar	
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) E 75 psi (5 bar) G 150 psi (10,5 bar)

H 200 psi (14 bar)K 450 psi (33 bar)

M 525 psi (36,7 bar)

N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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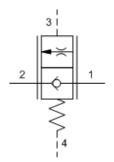


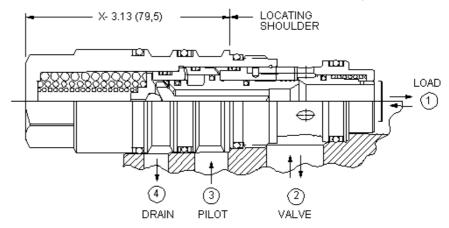
#### Vented, balanced, load control valve

#### SERIES 3 / CAPACITY: 240 L/min. / CAVITY: T-23A



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	350 bar
Maximum Valve Leakage at Reseat	See Technical Features
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990023007
eal kit - Cartridge Polyurethane: 990023002	
Seal kit - Cartridge	Viton: 990023006

#### **CONFIGURATION OPTIONS**

#### Model Code Example: MWGMXIN

(X) MINIMUM CONTROL PRESSURE CONTROL

(I) SEAL MATERIAL

MATERIAL/COATING

X Not Adjustable

**V** Viton

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

E 75 psi (5 bar)

G 150 psi (10,5 bar)

**K** 450 psi (33 bar)

M 525 psi (36,7 bar)

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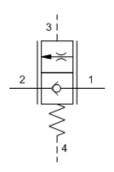


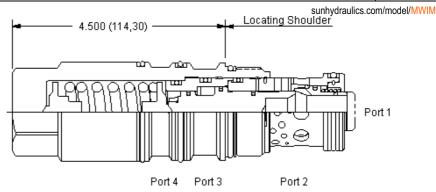


Vented, balanced, load control valve

#### SERIES 4 / CAPACITY: 480 L/min. / CAVITY: T-24A







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	350 bar	
Maximum Valve Leakage at Reseat	See Technical Features	
Check Cracking Pressure	1,7 bar	
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

Not Adjustable	Ш	300 psi (20 l
	Ε	75 psi (5 ba

E 75 psi (5 bar)
G 150 psi (10,5 bar)
H 200 psi (14 bar)

K 450 psi (33 bar)M 525 psi (36,7 bar)

N Buna-N
E EPDM
V Viton

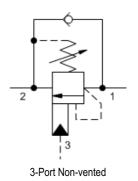
Standard Material/Coating /AP Stainless Steel, Passivated

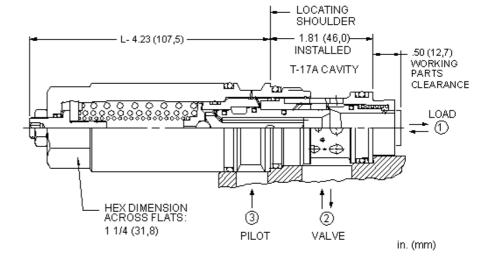
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# 1.5:1 pilot ratio, load reactive, load control valve SERIES 3 / CAPACITY: 240 L/min. / CAVITY: T-17A



sunhydraulics.com/model/MBGB





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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

#### **CONFIGURATION OPTIONS**

# Model Code Example: MBGBLHN

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING

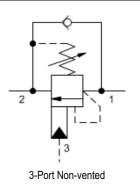
 H 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

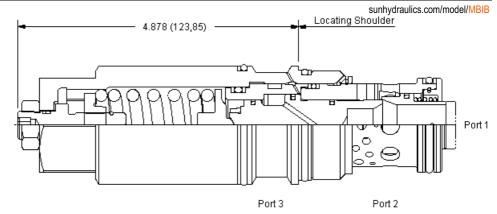
N Buna-N V Viton Standard Material/Coating
/AP Stainless Steel, Passivated

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

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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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	7
Reseat	≥77% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

Model Code Example: MBIBLHN

CONTROL (L)

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

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

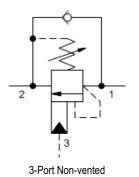
N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated

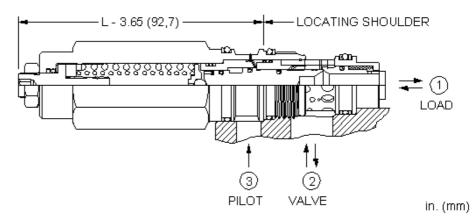
J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

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sunhydraulics.com/model/MBEA





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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

#### **CONFIGURATION OPTIONS**

Model Code Example: MBEALHN

CONTROL L Standard Screw Adjustment C Tamper Resistant - Factory Set

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

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL N Buna-N V Viton

(N) MATERIAL/COATING /AP Stainless Steel, Passivated

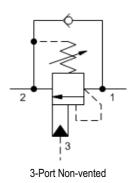
/LH Mild Steel, Zinc-Nickel

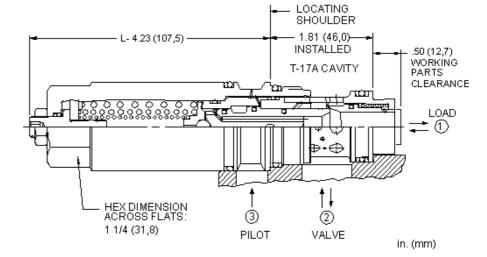
J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

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sunhydraulics.com/model/MBGA





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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING

Standard Screw Adjustment

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

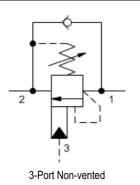
J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

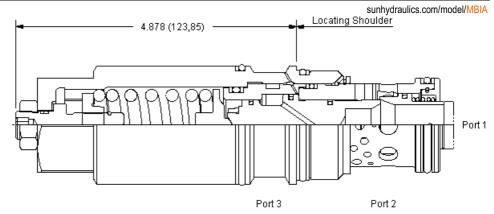
N Buna-NE EPDMV Viton

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

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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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	7
Reseat	≥77% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

Model Code Example: MBIALHN

CONTROL (L

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

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

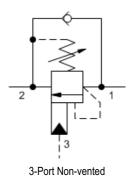
N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated

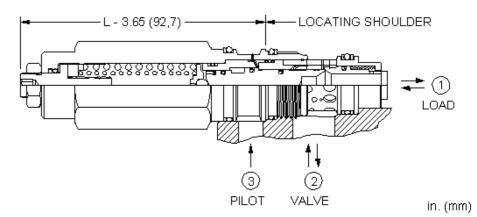
J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

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sunhydraulics.com/model/MBEG





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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

#### **CONFIGURATION OPTIONS**

Model Code Example: MBEGLHN

CONTROL L Standard Screw Adjustment C Tamper Resistant - Factory Set (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL 1000 - 4000 psi (70 - 280 bar), 3000 ps (210 bar) Standard Setting

N Buna-N V Viton

(N) MATERIAL/COATING /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

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

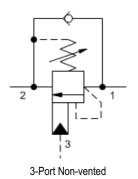
psi (210 bar) Standard Setting

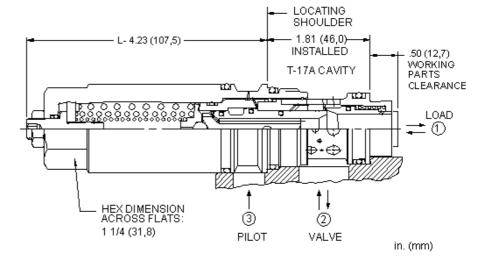
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# 4.5:1 pilot ratio, load reactive, load control valve SERIES 3 / CAPACITY: 240 L/min. / CAVITY: T-17A



sunhydraulics.com/model/MBGG





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	30 cc/min.	
Maximum Operating Pressure	350 bar	
Maximum Valve Leakage at Reseat	0,3 cc/min.	
Check Cracking Pressure	1,7 bar	
Adjustment - No. of CCW Turns from Min. to Max. Setting	9	
Reseat	≥77% of setting	
Locknut Hex Size	15 mm	
Locknut Torque	9 - 10 Nm	
Seal kit - Cartridge	Buna: 990017007	
Seal kit - Cartridge	Polyurethane: 990017002	
Seal kit - Cartridge	Viton: 990017006	

#### **CONFIGURATION OPTIONS**

# Model Code Example: MBGGLJN

I Standard Screw Adjustment

CONTROL

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

(L) FUNCTIONAL SETTING RANGE

0 N Buna-N V Viton

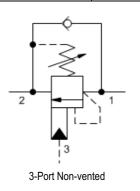
(N) MATERIAL/COATING

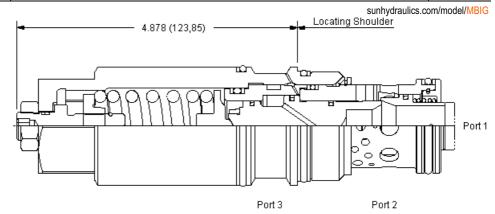
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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

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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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	7
Reseat	≥77% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

Model Code Example: MBIGLHN

CONTROL (L)

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

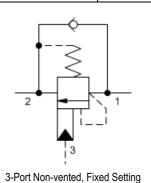
**H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

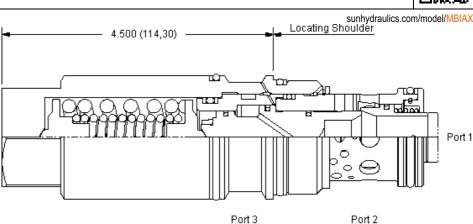
N Buna-N V Viton Standard Material/Coating
//LH Mild Steel, Zinc-Nickel

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

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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

#### **TECHNICAL DATA**

relief valve at a rate determined by the pilot ratio.

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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

#### **CONFIGURATION OPTIONS**

Model Code Example: MBIAXLN

 FACTORY SET
 (L)
 SEAL MATERIAL

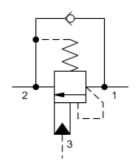
 L 4000 psi (280 bar)
 N Buna-N

**K** 3000 psi (210 bar) **M** 5000 psi (350 bar) V Viton

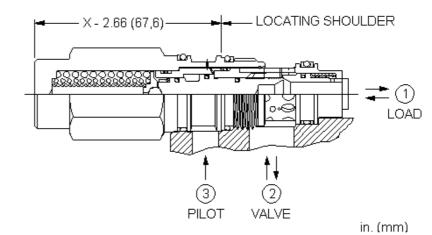
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sunhydraulics.com/model/MBEGX



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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

# **CONFIGURATION OPTIONS**

M 5000 psi (350 bar)

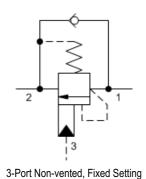
Model Code Example: MBEGXLN

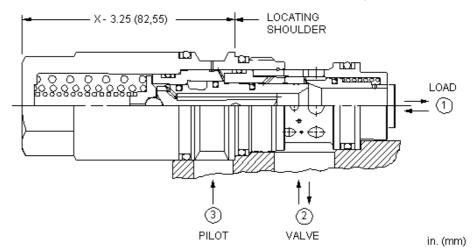
FACTORY SET	(L) SEAL MATERIAL	(N
L 4000 psi (280 bar)	N Buna-N	
K 3000 psi (210 bar)	V Viton	

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sunhydraulics.com/model/MB





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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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)

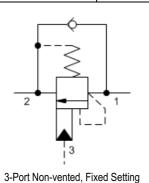
K 3000 psi (210 bar) M 5000 psi (350 bar)

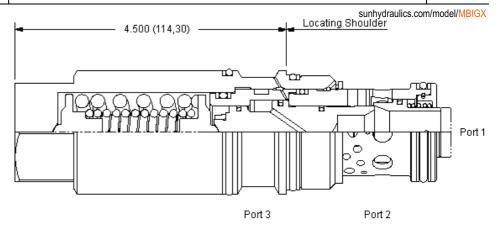
V Viton

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

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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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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

<b>M</b> 5000 psi (350 bar)	N Buna-
<b>K</b> 3000 psi (210 bar)	<b>V</b> Viton
L 4000 psi (280 bar)	

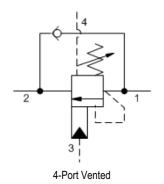
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

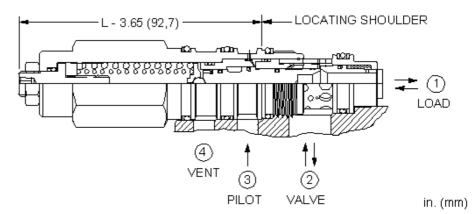
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# Vented, 1.5:1 pilot ratio, load reactive, load control valve SERIES 2 / CAPACITY: 120 L/min. / CAVITY: T-22A



sunhydraulics.com/model/MWEB





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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

#### **CONFIGURATION OPTIONS**

CONTROL

Model Code Example: MWEBLHN

L Standard Screw Adjustmen

(L) FUNCTIONAL SETTING RANGE H 1000 - 4000 psi (70 - 280 bar), 3000 psi

(H) SEAL MATERIAL

(N) MATERIAL/COATING

(210 bar) Standard Setting **V** Viton /AP Stainless Steel, Passivated

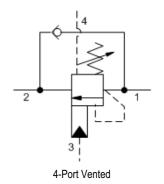
**J** 2000 - 5000 psi (140 - 350 bar), 3000

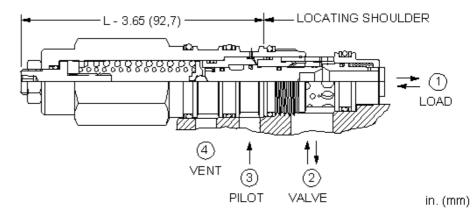
psi (210 bar) Standard Setting

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sunhydraulics.com/model/MWEA





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	3:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

#### **CONFIGURATION OPTIONS**

Model Code Example: MWEALHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

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

**V** Viton

/AP Stainless Steel, Passivated

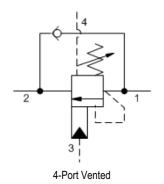
**J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

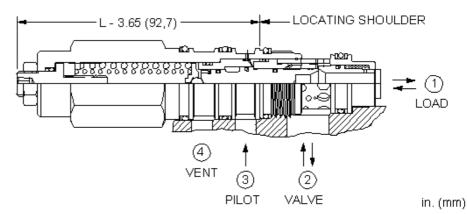
/LH Mild Steel. Zinc-Nickel

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sunhydraulics.com/model/MWEG





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	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	8.5
Reseat	≥77% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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

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

N Buna-N
V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

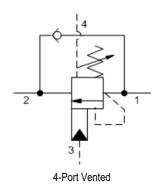
**J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

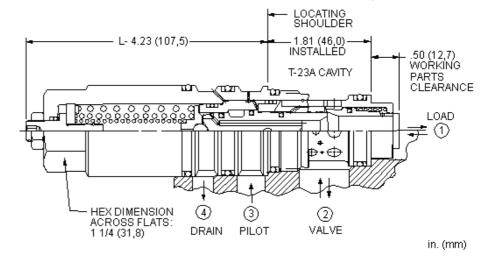
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# Vented, 4.5:1 pilot ratio, load reactive, load control valve SERIES 3 / CAPACITY: 240 L/min. / CAVITY: T-23A



sunhydraulics.com/model/MWGG





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	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
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

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

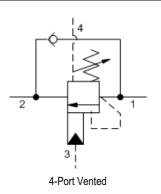
L Standard Screw Adjustment H 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

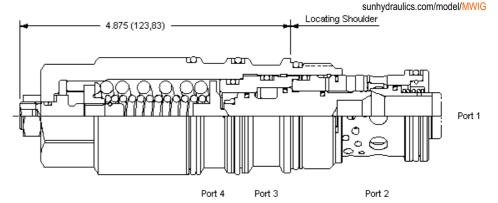
N Buna-N V Viton

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

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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	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	8.5
Reseat	≥77% of setting
Locknut Hex Size	19,1 mm
Locknut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

# **CONFIGURATION OPTIONS**

Model Code Example: MWIGLHN

I Standard Screw Adjustment

CONTROL

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

N Buna-N V Viton

(H) SEAL MATERIAL

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

(N) MATERIAL/COATING

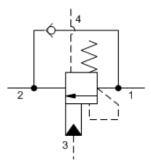
**J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

(L) FUNCTIONAL SETTING RANGE

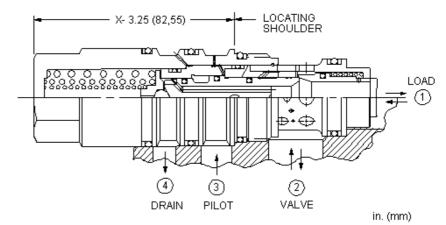
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sunhydraulics.com/model/MWGAX



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 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	30 cc/min.	
Maximum Operating Pressure	350 bar	
Maximum Valve Leakage at Reseat	0,3 cc/min.	
Check Cracking Pressure	1,7 bar	
Reseat	≥77% of setting	
Seal kit - Cartridge	Buna: 990023007	
Seal kit - Cartridge	Polyurethane: 990023002	
Seal kit - Cartridge	Viton: 990023006	

#### **CONFIGURATION OPTIONS**

L 4000 psi (280 bar)

Model Code Example: MWGAXMN

 FACTORY SET
 (M)
 SEAL MATERIAL
 (N)

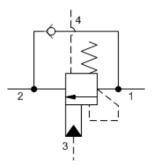
 M 5000 psi (350 bar)
 N Buna-N

 K 3000 psi (210 bar)
 V Viton

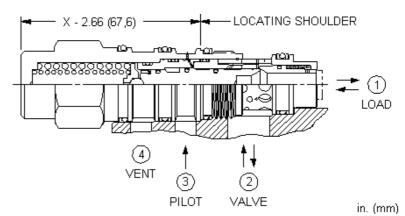
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sunhydraulics.com/model/MWEGX



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 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	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

# **CONFIGURATION OPTIONS**

M 5000 psi (350 bar)

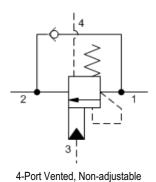
Model Code Example: MWEGXLN

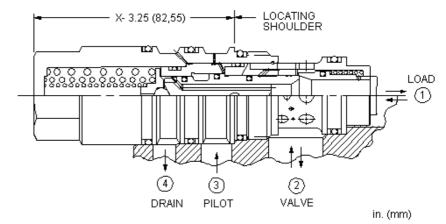
FACTORY SET	(L)	SEAL MATERIAL	(N
L 4000 psi (280 bar)		N Buna-N	
<b>K</b> 3000 psi (210 bar)		V Viton	·

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sunhydraulics.com/model/MWGGX





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 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	4.5:1	
Maximum Recommended Load Pressure	See Technical Features	
Factory Pressure Settings Established at	30 cc/min.	
Maximum Operating Pressure	350 bar	
Maximum Valve Leakage at Reseat	0,3 cc/min.	
Check Cracking Pressure	1,7 bar	
Reseat	≥77% of setting	
Seal kit - Cartridge	Buna: 990023007	
Seal kit - Cartridge	Polyurethane: 990023002	
Seal kit - Cartridge	Viton: 990023006	

# **CONFIGURATION OPTIONS**

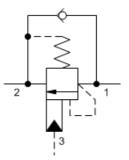
M 5000 psi (350 bar)

Model Code Example: MWGGXLN

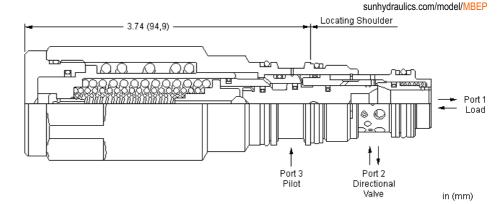
FACTORY SET	(L) SEAL MATERIAL	(N)	
L 4000 psi (280 bar)	N Buna-N		
<b>K</b> 3000 psi (210 bar)	V Viton		

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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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

**NOTES** 

Patents are pending for this product.

# **CONFIGURATION OPTIONS**

# Model Code Example: MBEPDHN

CONTROL	(D)	FACTORY SET	H)	SEAL MATERIAL	(N)
<b>D</b> LoadMatch™		<b>H</b> 4000 psi (280 bar)		N Buna-N	
	<u>.</u>	<b>G</b> 6000 psi (420 bar)		<b>V</b> Viton	

J 5000 psi (350 bar)

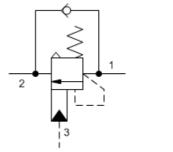
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# Atmospherically referenced LoadMatch™ counterbalance valve

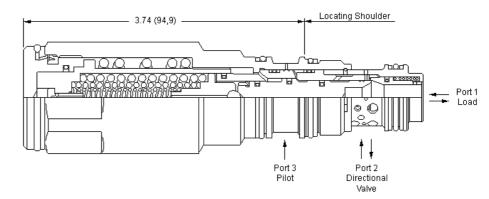
SERIES 2 / CAPACITY: 120 L/min. / CAVITY: T-2A



sunhydraulics.com/model/MA



3-Port Atmospherically Referenced, Non-adjustable



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. 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	30 cc/min.	
Maximum Operating Pressure	350 bar	
Maximum Valve Leakage at Reseat	0,3 cc/min.	
Check Cracking Pressure	1,7 bar	
Reseat	≥77% of setting	
Seal kit - Cartridge	Buna: 990202007	
Seal kit - Cartridge	Polyurethane: 990002002	
Seal kit - Cartridge	Viton: 990202006	

# **NOTES**

- Patents are pending for this product.
- 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) FACTORY SET (H) SEAL MATERIAL (N) MATERIAL/COATING D LoadMatch H 4000 psi (280 bar

**G** 6000 psi (420 bar) **J** 5000 psi (350 bar) /LH Mild Steel, Zinc-Nickel

V Viton

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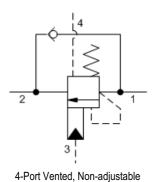


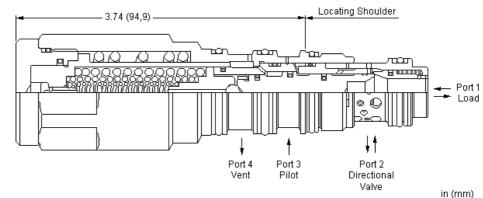
# Vented LoadMatch™ counterbalance valve

#### SERIES 2 / CAPACITY: 120 L/min. / CAVITY: T-22A



sunhydraulics.com/model/MWEP





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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

**NOTES** 

Patents are pending for this product.

#### **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

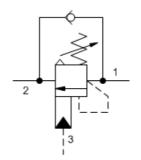
H 4000 psi (280 bar)G 6000 psi (420 bar)J 5000 psi (350 bar)

N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated

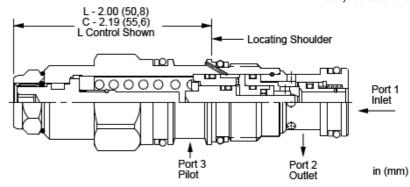
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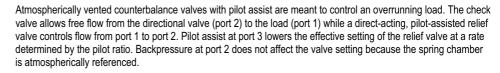


sunhydraulics.com/model/CABN

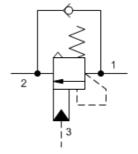


3-Port Atmospherically Referenced





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



3-Port Atmospherically Referenced, Non-adjustable

#### **TECHNICAL DATA**

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

Pilot Ratio	7:1
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

# **CONFIGURATION OPTIONS**

# Model Code Example: CABNLHN

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

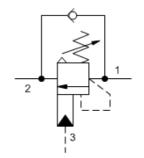
H 1000 - 4000 psi w/25 psi Check (70 -280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting N Buna-N
V Viton

Standard Material/Coating

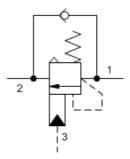
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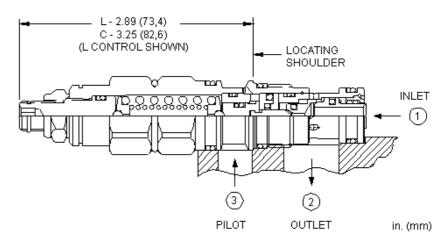
sunhydraulics.com/model/CACH



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	10:1
Maximum Recommended Load Pressure at Maximum Setting	320 bar
Maximum Setting	420 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	2,8 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	Viton: 990211006

#### **CONFIGURATION OPTIONS**

# Model Code Example: CACHLGN

CONTROL (L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

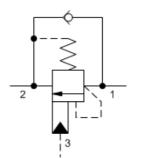
**G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting

N Buna-N
V Viton

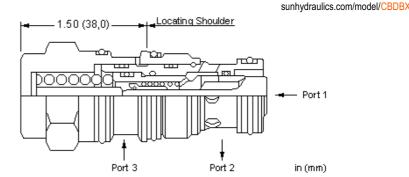
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

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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	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/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)

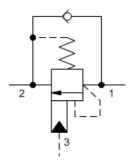
N Buna-N
V Viton

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

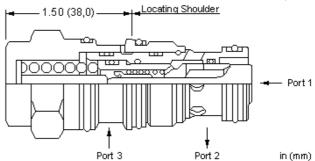
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sunhydraulics.com/model/CBDHX



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	270 bar
Maximum Setting	350 bar
Factory Pressure Settings Established at	30 cc/min.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

# **CONFIGURATION OPTIONS**

Model Code Example: CBDHXXN

FIXED PRESSURE RANGE (X) SEAL MATERIAL (N) MATERIAL/COATING

X 3500 - 4200 psi (245 - 290 bar) M 4700 - 5600 psi (325 - 390 bar)

4 0000 0000 psi (000 000 bai)

**V** 3200 - 3800 psi (220 - 260 bar)

**Z** 4125 - 4900 psi (285 - 340 bar)

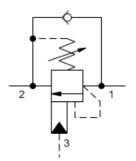
 N
 Buna-N
 Standard Material/Coating

 V
 Viton
 /LH Mild Steel, Zinc-Nickel

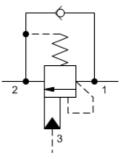
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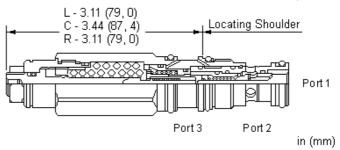
sunhydraulics.com/model/CEBA



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 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 Curves
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

**NOTES** 

CONTROL

Patents are pending for this product.

# **CONFIGURATION OPTIONS**

#### Model Code Example: CEBALHN

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

H 1500 - 4000 psi w/ 25 psi check (105 -280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting

(L) ADJUSTMENT RANGE

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

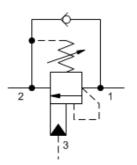
Standard Material/Coating
/AP Stainless Steel, Passivated

(N) MATERIAL/COATING

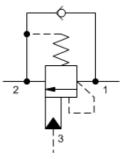
10 bar) Standard Setting

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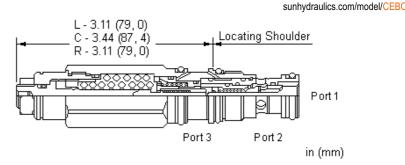




3-Port Non-vented



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 Curves
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

**NOTES** 

CONTROL

Patents are pending for this product.

# **CONFIGURATION OPTIONS**

#### Model Code Example: CEBCLHN

C Tamper Resistant - Factory Set

1500 - 4000 psi w/ 25 psi check (105 280 bar w/ 1,7 bar Check), 3000 psi

(L) ADJUSTMENT RANGE

N Buna-N V Viton

(H) SEAL MATERIAL

(N) MATERIAL/COATING

/LH Mild Steel, Zinc-Nickel

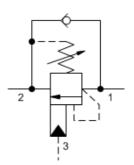
(210 bar) Standard Setting 1500 - 4000 psi w/ 4 psi check (105 -

280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting

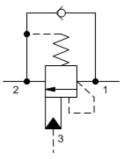
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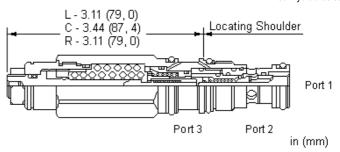
sunhydraulics.com/model/CECA



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 Curves
Maximum Recommended Load Pressure at Maximum Setting	215 bar
Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

**NOTES** 

CONTROL

Patents are pending for this product.

# **CONFIGURATION OPTIONS**

#### Model Code Example: CECALHN

C Tamper Resistant - Factory Set

1500 - 4000 psi w/ 25 psi check (105 280 bar w/ 1,7 bar Check), 3000 psi

(L) ADJUSTMENT RANGE

(210 bar) Standard Setting 1500 - 4000 psi w/ 4 psi check (105 -

(H) SEAL MATERIAL N Buna-N

V Viton

(N) MATERIAL/COATING

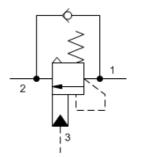
/AP Stainless Steel, Passivated

280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting

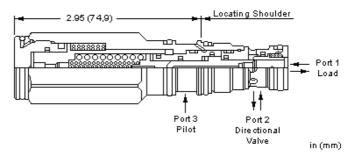
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sunhydraulics.com/model/MADP



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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Viton: 990011006

**NOTES** 

Patents are pending for this product.

#### **CONFIGURATION OPTIONS**

#### Model Code Example: MADPDHN

CONTROL (D) FACTORY SET (H) SEAL MATERIAL (N) **D** LoadMatch™ H 4000 psi (280 bar) N Buna-N

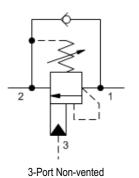
**G** 6000 psi (420 bar)

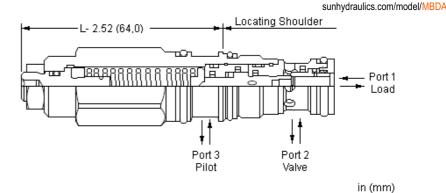
**V** Viton

J 5000 psi (350 bar)

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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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Adjustment - No. of CCW Turns from Min. to Max. Setting	6.5
Reseat	≥77% of setting
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

#### **CONFIGURATION OPTIONS**

C Tamper Resistant - Factory Set

# Model Code Example: MBDALHN

CONTROL(L)FUNCTIONAL SETTING RANGELStandard Screw AdjustmentH1000 - 4000 psi (70 - 280 bar), 30

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

(H) SEAL MATERIAL

O psi
N Buna-N
V Viton

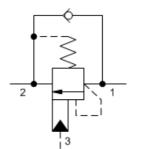
Standard Material/Coating
/AP Stainless Steel, Passivated

(N) MATERIAL/COATING

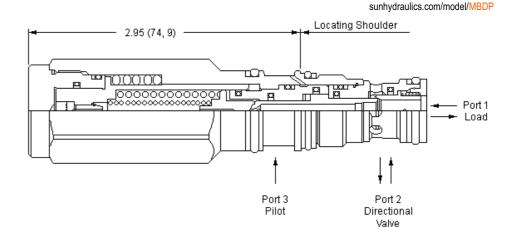
J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

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3-Port Non-vented, Fixed Setting



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 Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

**NOTES** 

Patents are pending for this product.

# **CONFIGURATION OPTIONS**

# Model Code Example: MBDPDHN

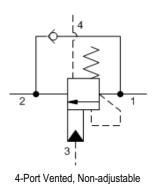
 CONTROL
 (D)
 FACTORY SET
 (H)
 SEAL MATERIAL
 (N)
 MATERIAL/COATING

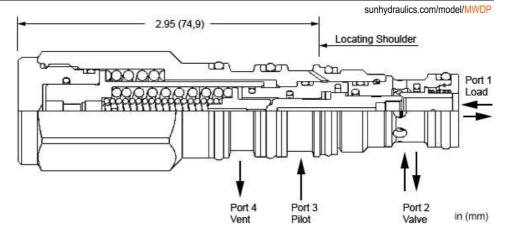
 D LoadMatch™
 H 4000 psi (280 bar)
 N Buna-N
 Standard Material/Coating

 G 6000 psi (420 bar)
 V Viton
 /AP Stainless Steel, Passivated

**J** 5000 psi (350 bar)

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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	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

**NOTES** 

Patents are pending for this product.

# **CONFIGURATION OPTIONS**

Model Code Example: MWDPDHN

CONTROL (H) SEAL MATERIAL (D) FACTORY SET (N) MATERIAL/COATING

**D** LoadMatch™ H 4000 psi (280 bar) N Buna-N

Standard Material/Coating V Viton G 6000 psi (420 bar) /AP Stainless Steel, Passivated **J** 5000 psi (350 bar) /LH Mild Steel, Zinc-Nickel

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