Load Holding Cartridges

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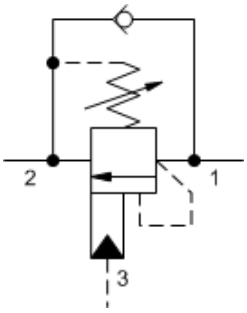
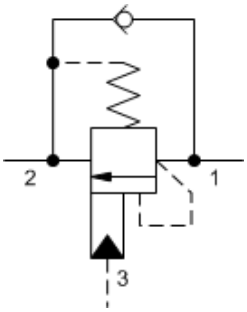
Cavity Information

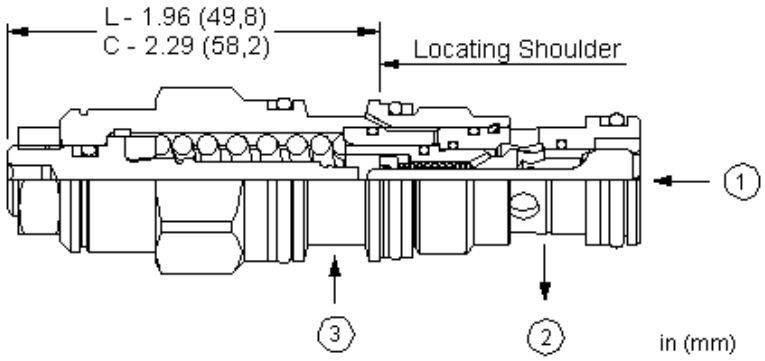
Series	Ports	Cavities
Series Z Cartridges 3/8-24 UNF Cartridge Thread 5 mm Valve Hex Size 11 - 14 Nm Valve Installation Torque	2-Port	T-382A
Series P Cartridges M16 Cartridge Thread 22,2 mm Valve Hex Size 27 - 33 Nm Valve Installation Torque	2-Port 2-Port (Deep) 3-Port	T-8A T-8DP T-9A
Series 0 Cartridges M16 Cartridge Thread 19,1 mm Valve Hex Size 25,4 mm Valve Hex Size 27 - 33 Nm Valve Installation Torque	2-Port 2-Port (Deep) 3-Port	T-162A T-162DP T-163A
Series 1 Cartridges M20 Cartridge Thread 22,2 mm Valve Hex Size 41 - 47 Nm Valve Installation Torque	2-Port 2-Port 3-Port 4-Port 4-Port 6-Port	T-10A T-13A T-11A T-21A T-31A T-61A
Series 2 Cartridges 1"-14 UNS Cartridge Thread 28,6 mm Valve Hex Size 61 - 68 Nm Valve Installation Torque	2-Port 2-Port 3-Port 4-Port 4-Port 4-Port (Dual path) 6-Port 6-Port	T-3A T-5A T-2A T-22A T-32A T-52AD T-52A T-62A
Series 3 Cartridges M36 Cartridge Thread 31,8 mm Valve Hex Size 203 - 217 Nm Valve Installation Torque	2-Port 3-Port 4-Port 4-Port 4-Port (Dual path) 6-Port 6-Port	T-16A T-17A T-23A T-33A T-53AD T-53A T-63A
Series 4 Cartridges M48 Cartridge Thread 41,3 mm Valve Hex Size 474 - 508 Nm Valve Installation Torque	2-Port 2-Port (Undercut) 3-Port 3-Port (Undercut) 4-Port 4-Port (Undercut) 4-Port 4-Port (Dual path) 6-Port 6-Port	T-18A T-18AU T-19A T-19AU T-24A T-24AU T-34A T-54AD T-54A T-64A



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

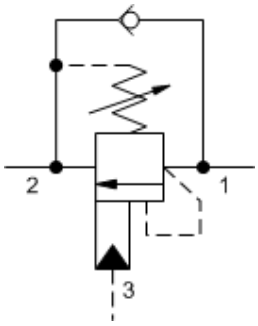
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

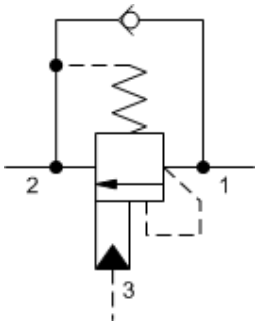
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

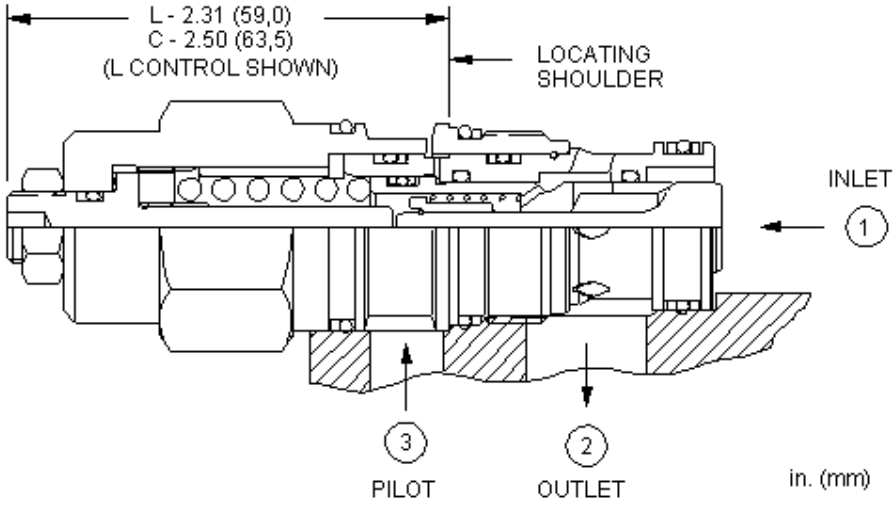
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

- **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
- **J** 400 - 1500 psi w/25 psi Check (28

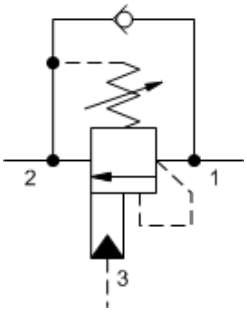
SEAL MATERIAL (N)

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

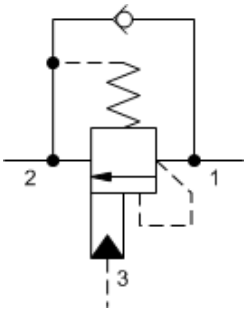
MATERIAL/COATING

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

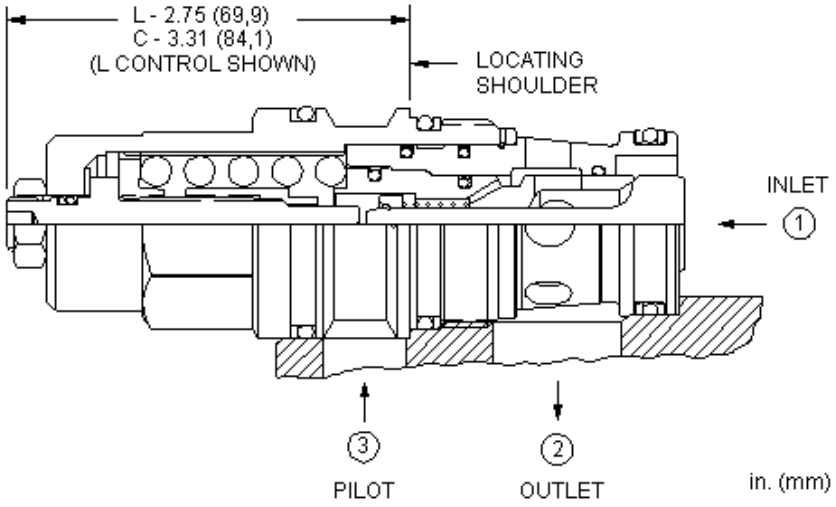
- 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

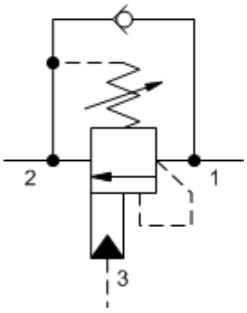
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

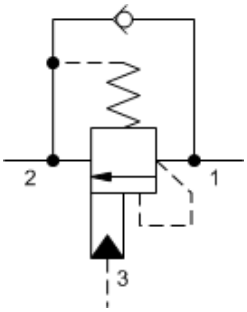
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

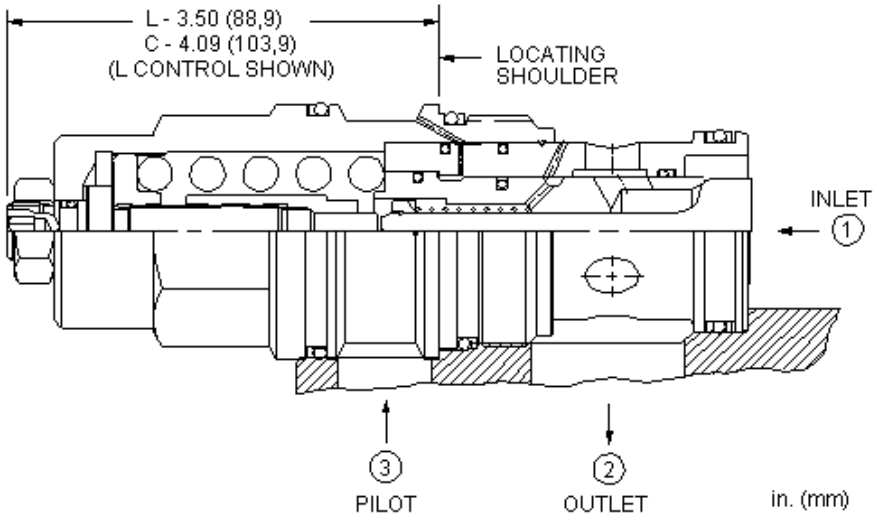
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

- **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

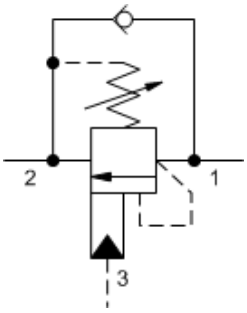
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

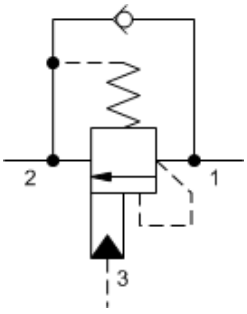
MATERIAL/COATING

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

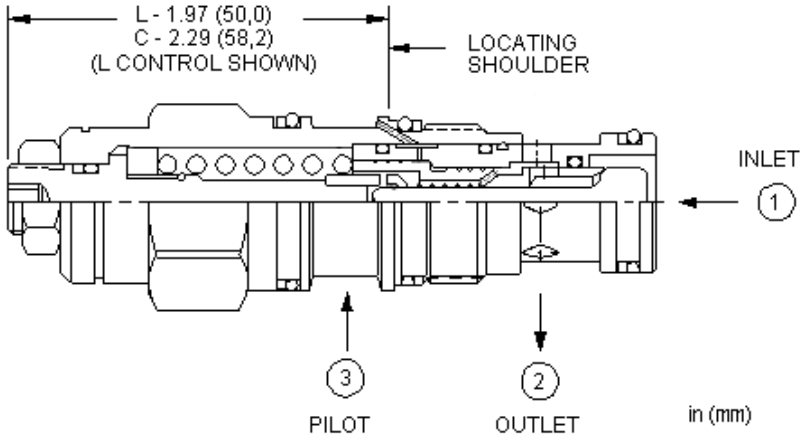
bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

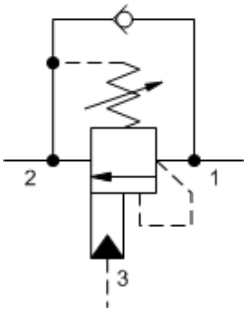
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

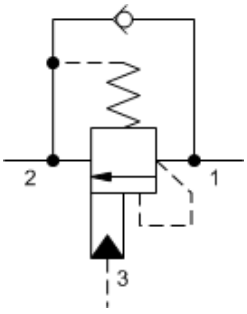
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

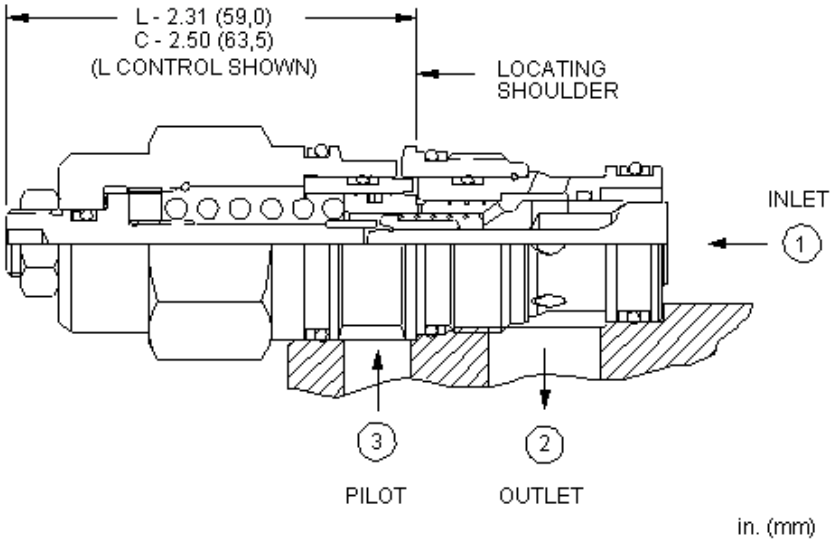
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



3-Port Non-vented



3-Port Non-vented, Fixed Setting



in. (mm)

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

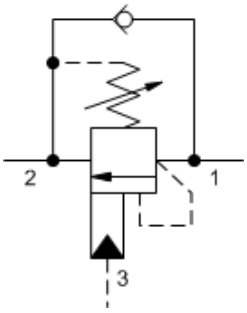
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

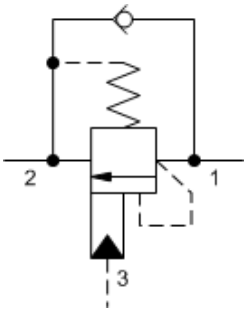
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

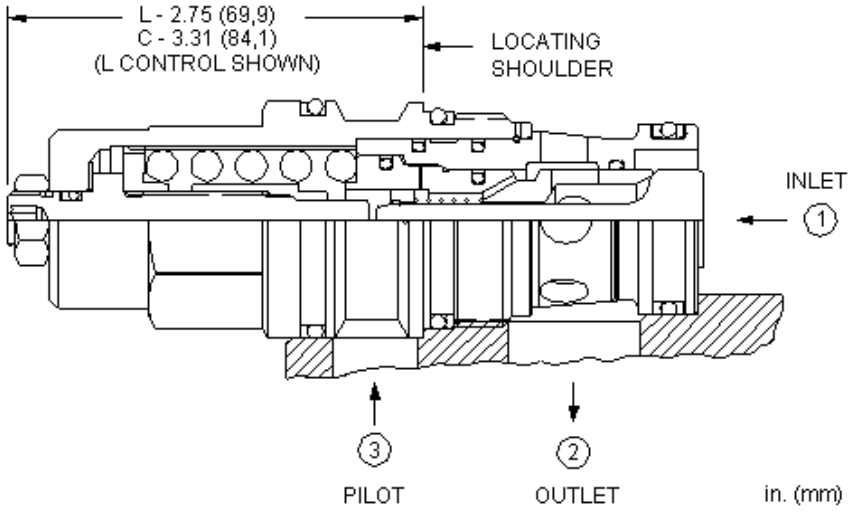
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

TECHNICAL DATA

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	215 bar
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Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

- **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

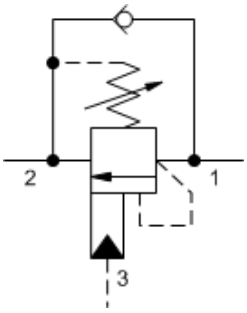
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

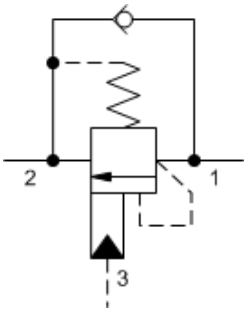
MATERIAL/COATING

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

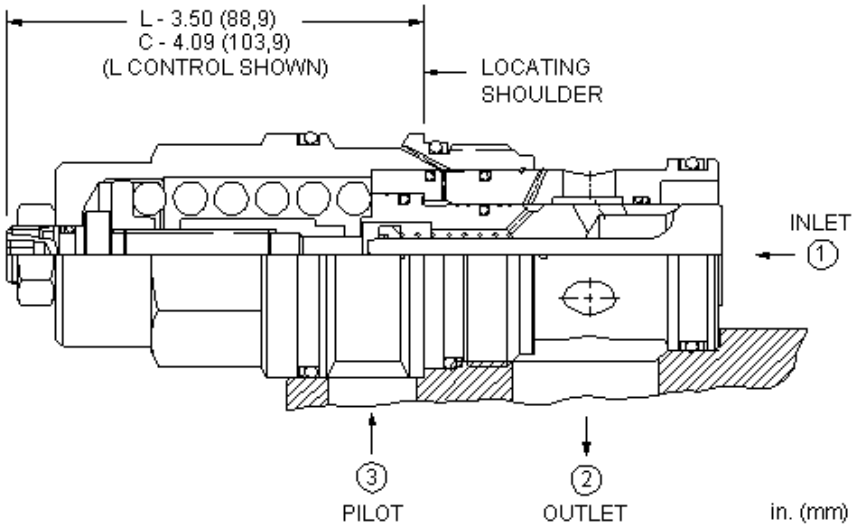
bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

TECHNICAL DATA

Pilot Ratio	2:1
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Maximum Setting	280 bar
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Adjustment - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

- **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

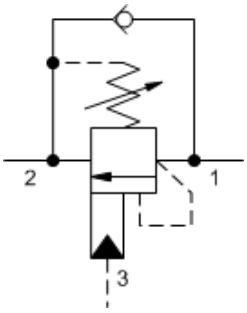
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

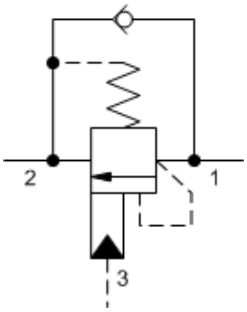
MATERIAL/COATING

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

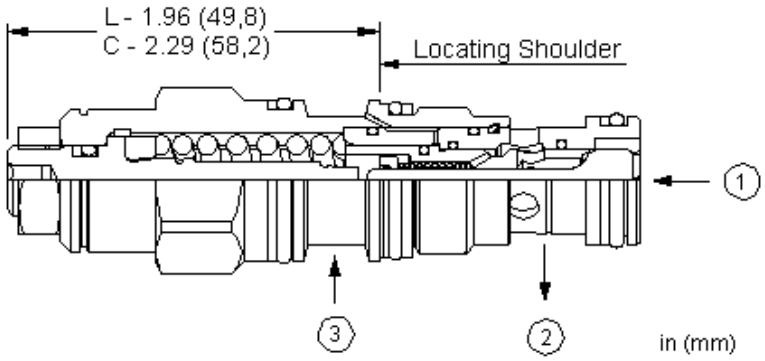
bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

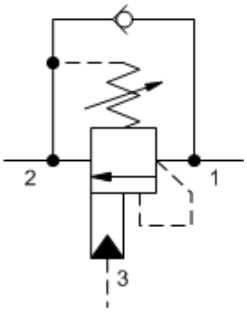
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

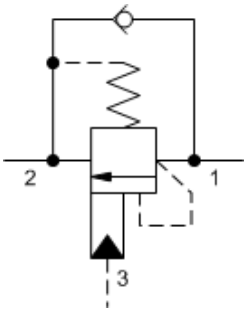
- **N** Buna-N
- **E** EPDM
- **V** Viton

MATERIAL/COATING

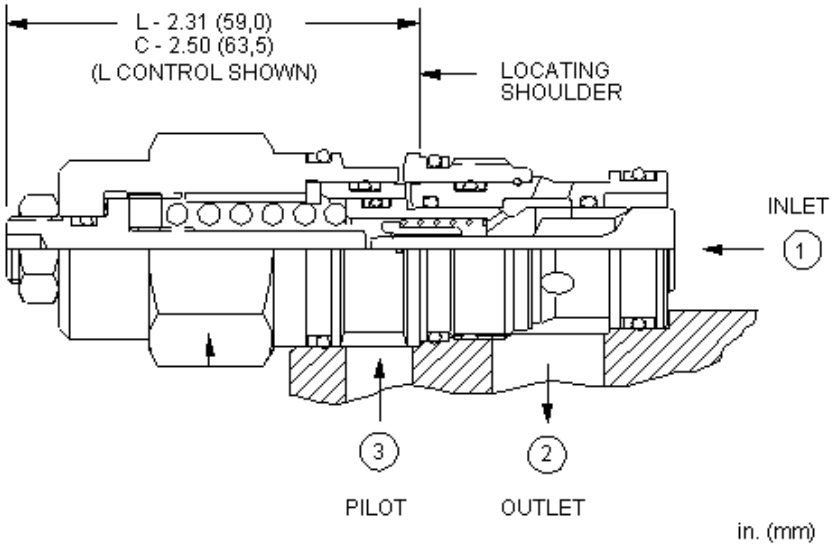
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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 - [illegible])

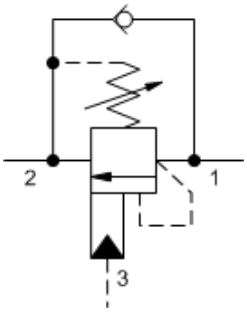
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

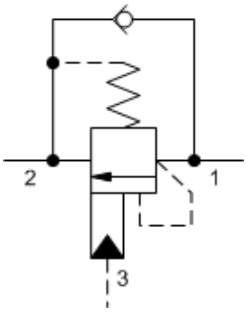
MATERIAL/COATING

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

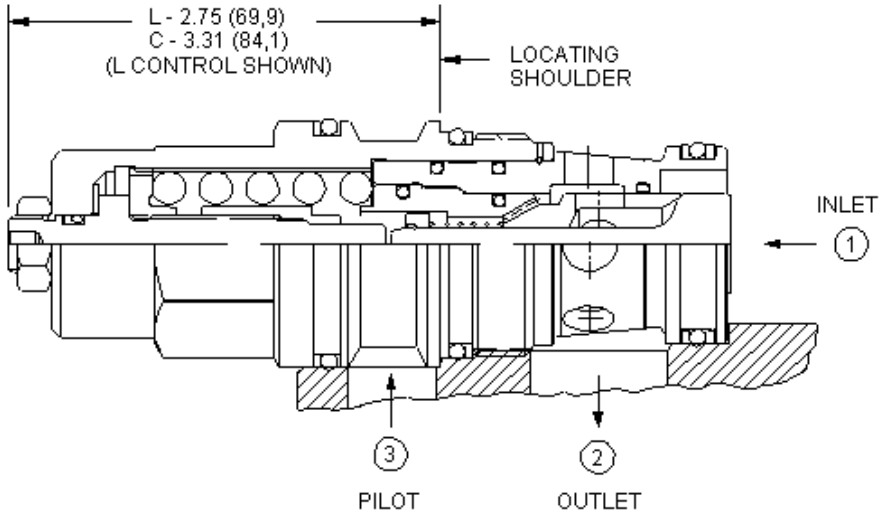
175 bar w/ 1,7 bar Check), 2000 psi
(140 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

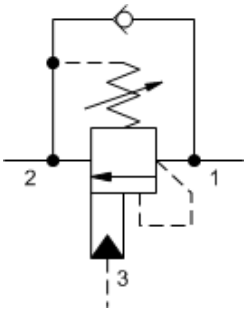
SEAL MATERIAL (N)

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

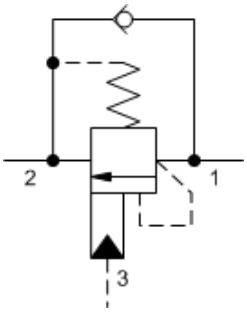
MATERIAL/COATING

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

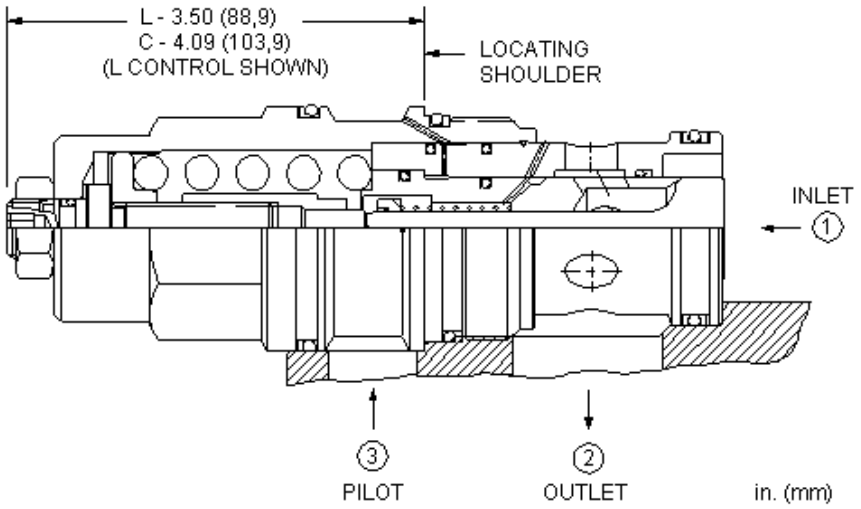
K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting



3-Port Non-vented



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

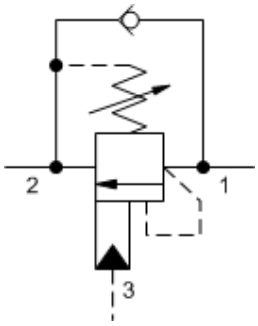
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

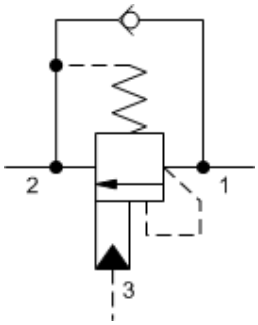
MATERIAL/COATING

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

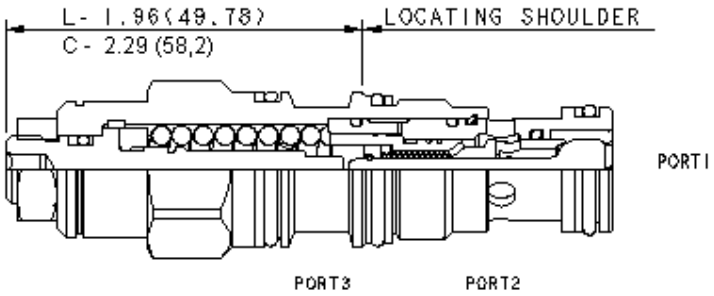
(140 bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

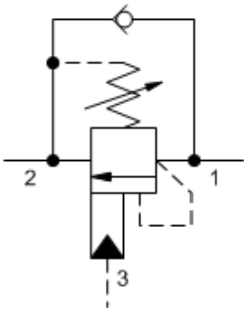
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

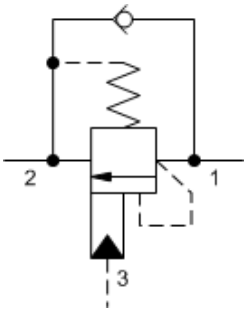
- **N** Buna-N
- **E** EPDM
- **V** Viton

MATERIAL/COATING

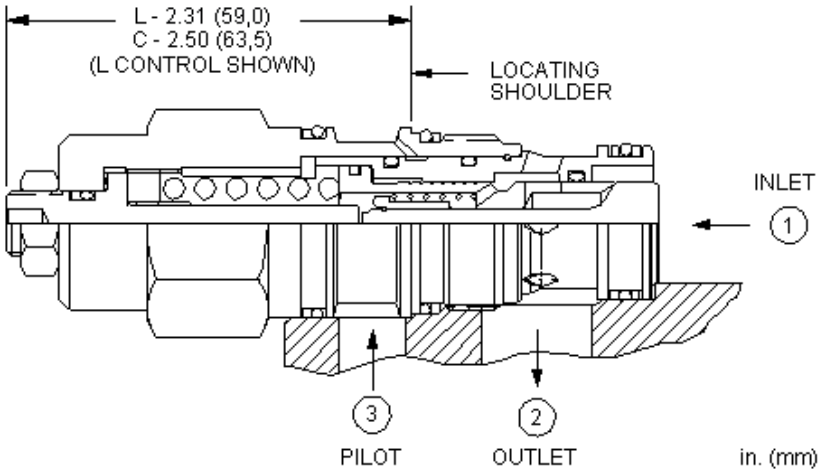
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

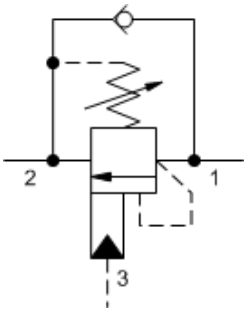
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

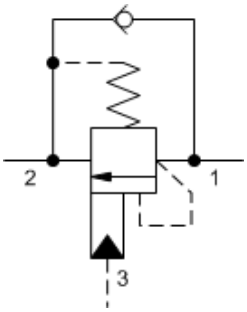
- **N** Buna-N
- **E** EPDM
- **V** Viton

MATERIAL/COATING

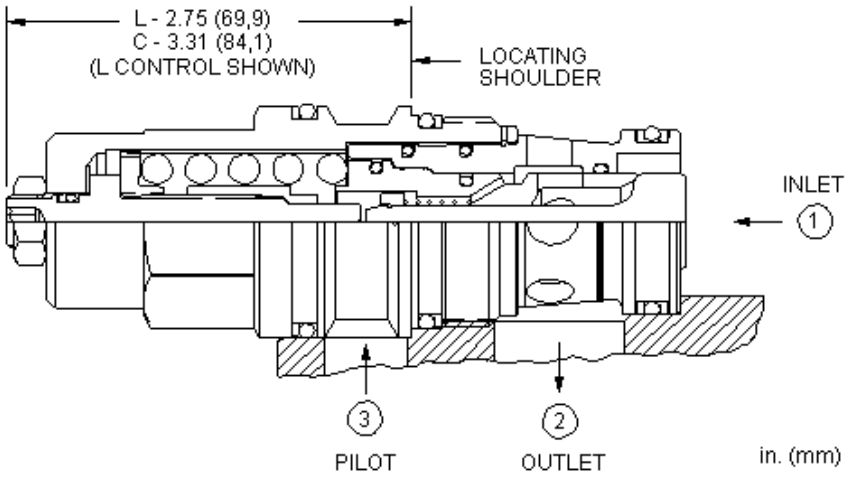
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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: CBGALHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

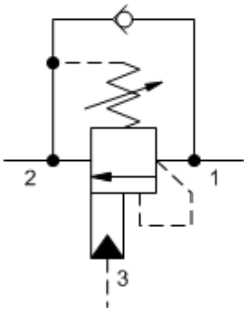
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

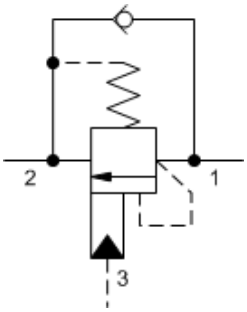
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

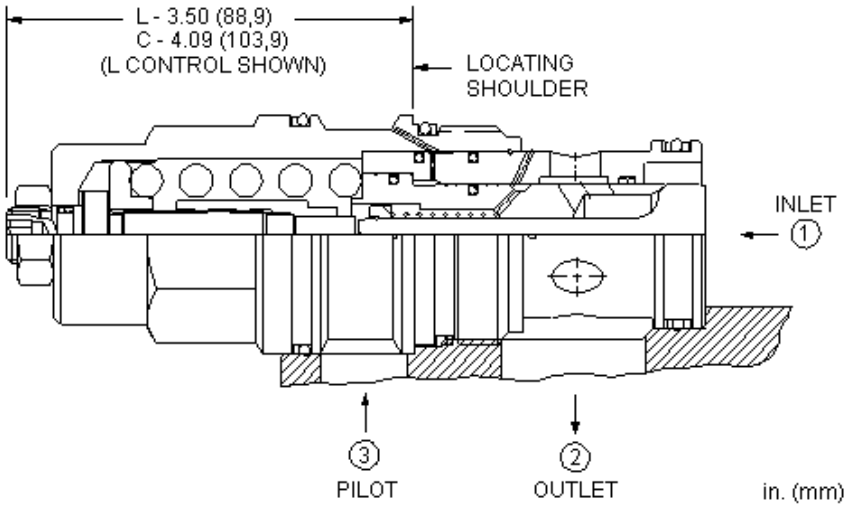
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

- **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

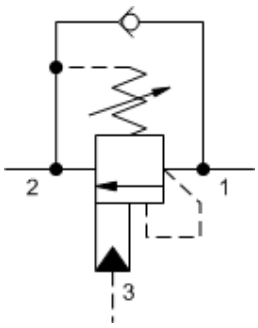
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

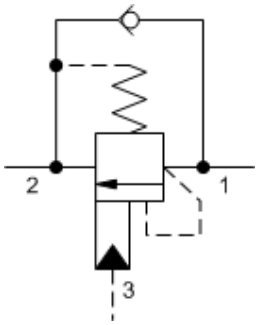
MATERIAL/COATING

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

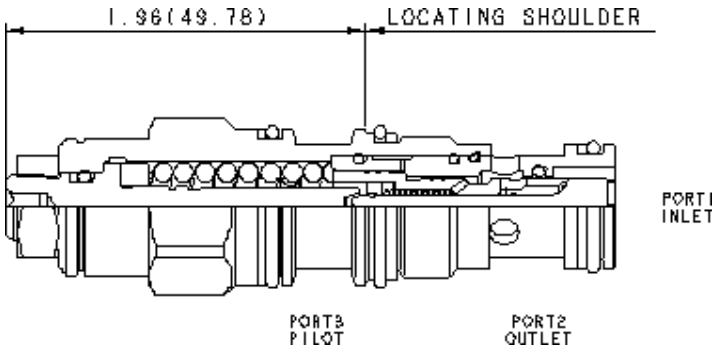
bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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

CONFIGURATION OPTIONS

Model Code Example: CBCGLJN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

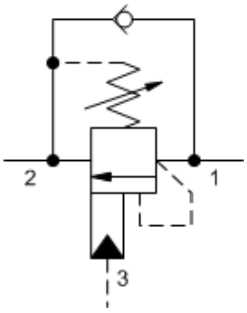
SEAL MATERIAL (N)

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

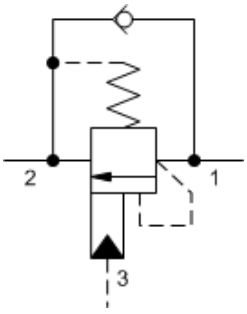
MATERIAL/COATING

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

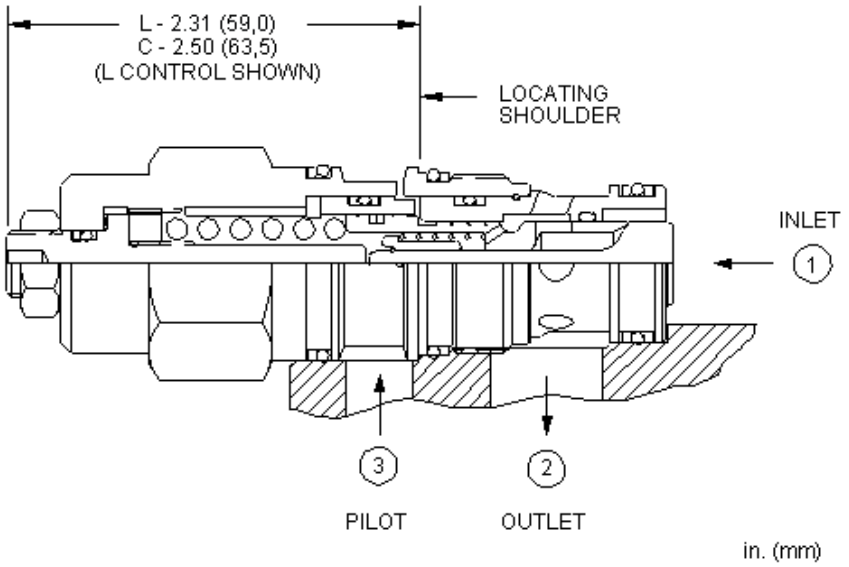
(140 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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)

L Standard Screw Adjustment
C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

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

SEAL MATERIAL (N)

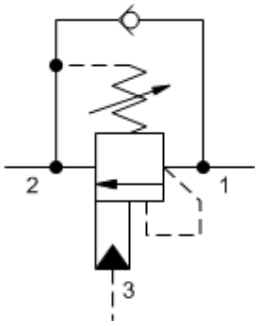
N Buna-N
V Viton

MATERIAL/COATING

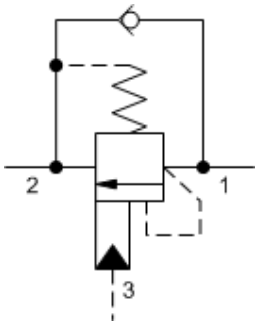
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

(140 bar) Standard Setting

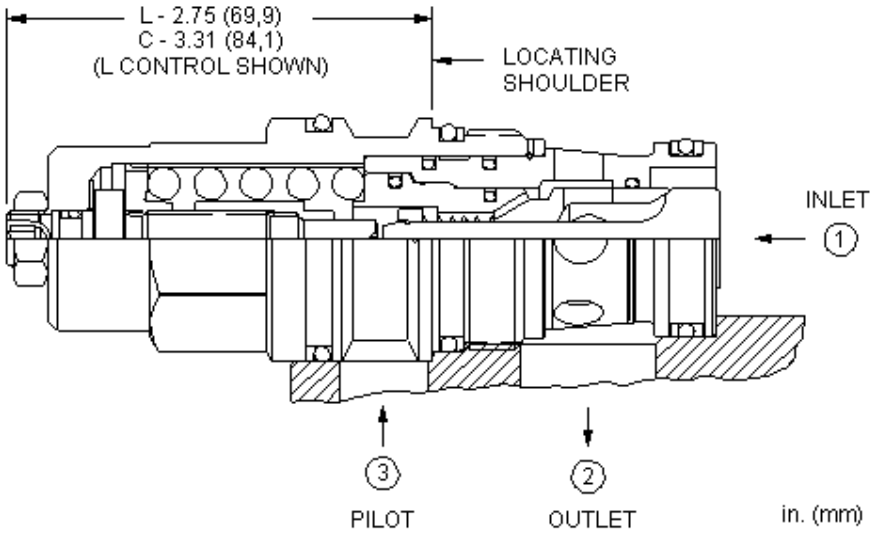
K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

SEAL MATERIAL (N)

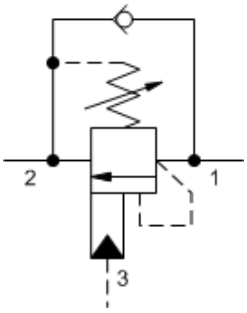
- **N** Buna-N
- **E** EPDM
- **V** Viton

MATERIAL/COATING

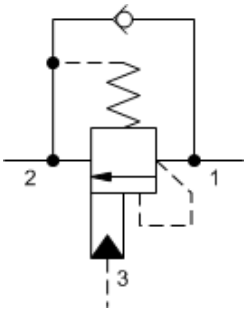
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel

175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting

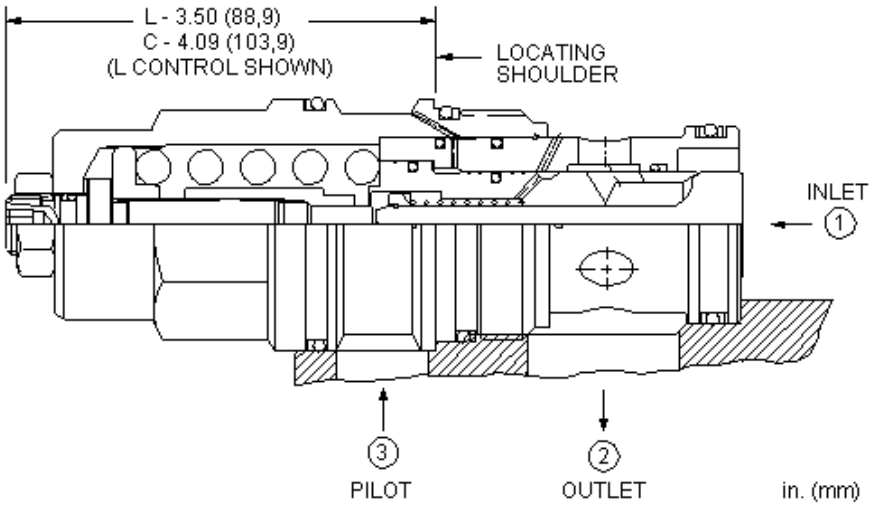
K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

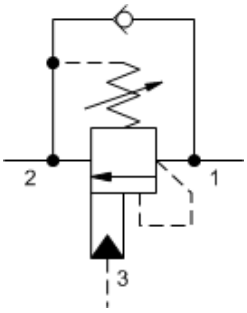
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

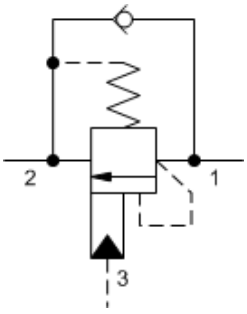
MATERIAL/COATING

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

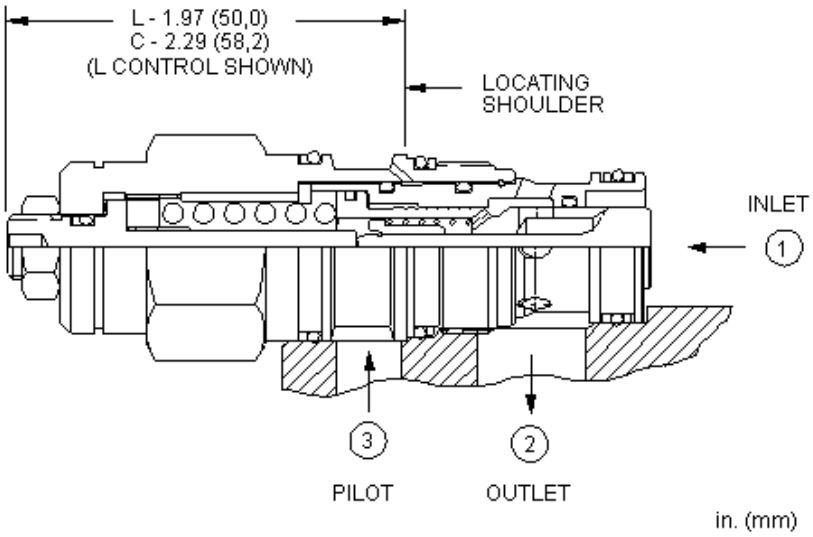
(140 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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: CBCHLJN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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 - [illegible])

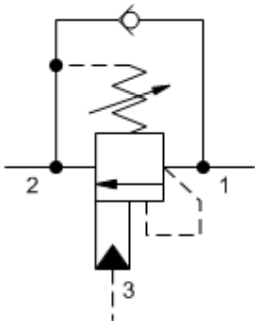
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

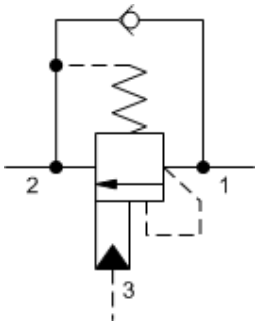
MATERIAL/COATING

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

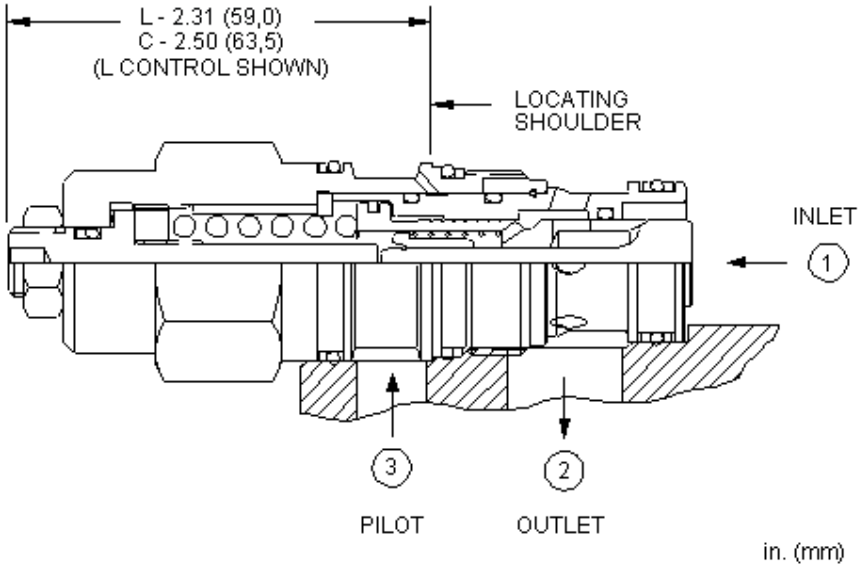
175 bar w/ 1,7 bar Check), 2000 psi
(140 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

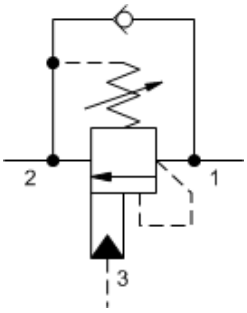
MATERIAL/COATING

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

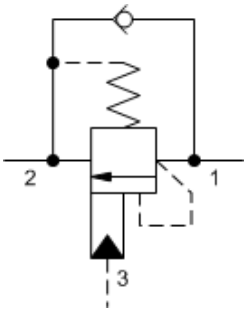
(210 bar) Standard Setting

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

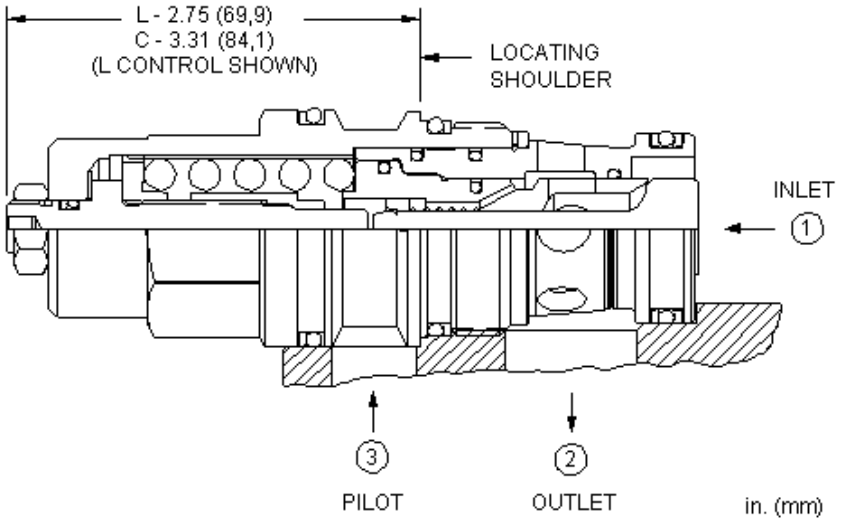
K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

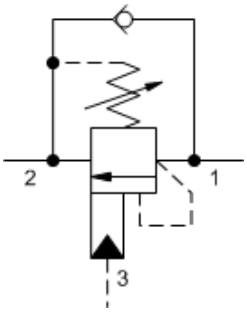
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

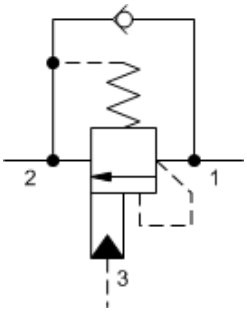
MATERIAL/COATING

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

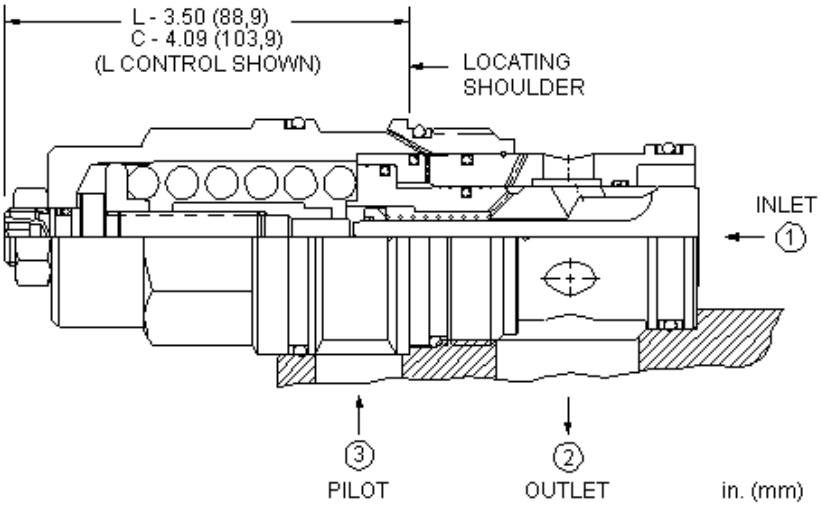
(140 bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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: CBIHLJN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

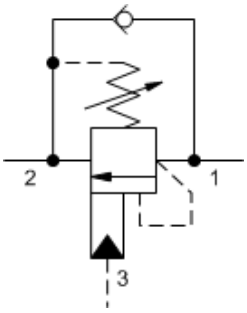
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

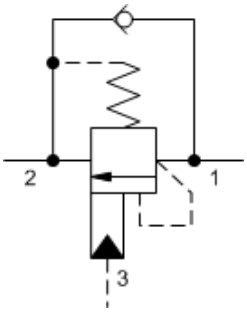
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

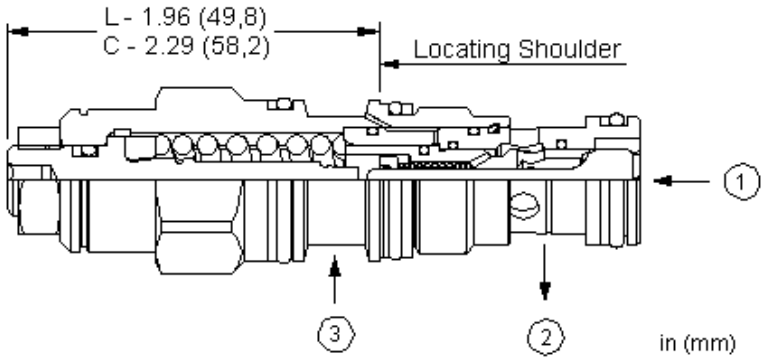
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

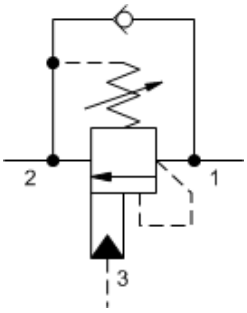
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

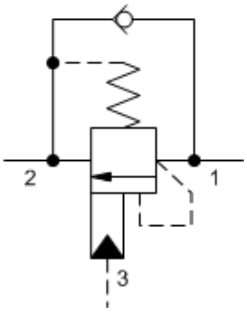
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

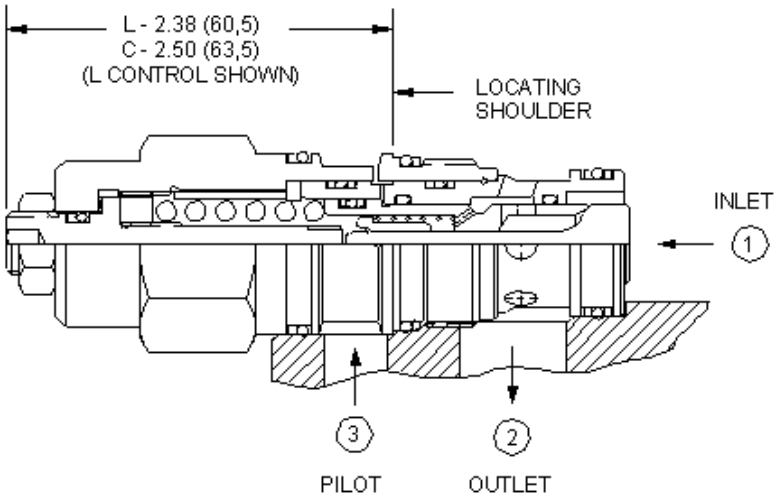
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

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

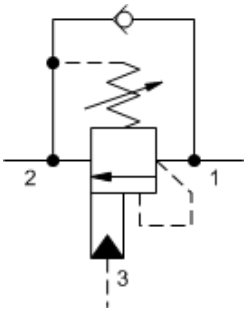
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

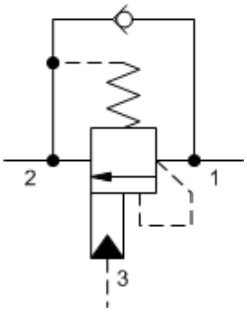
MATERIAL/COATING

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

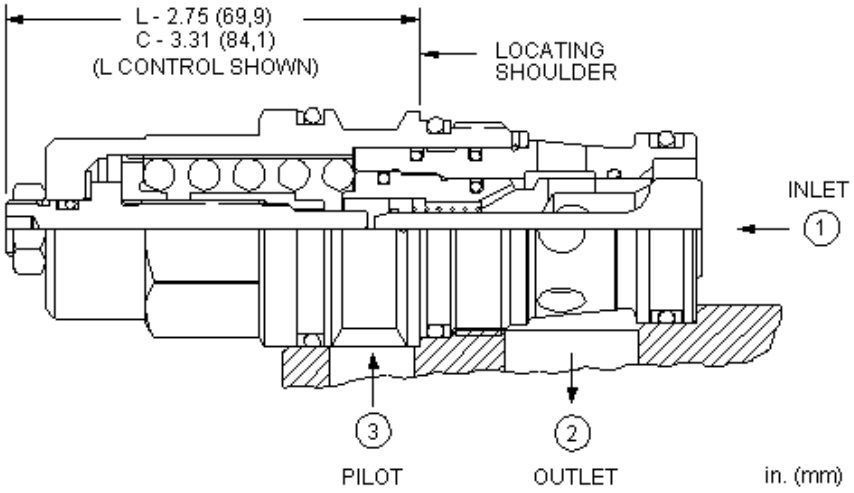
105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

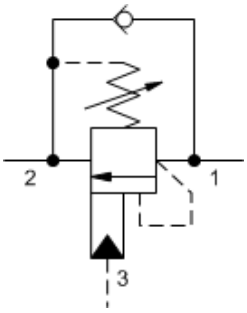
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

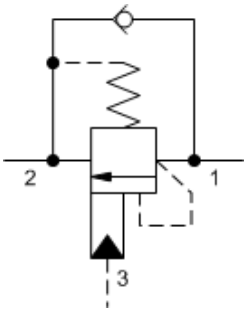
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

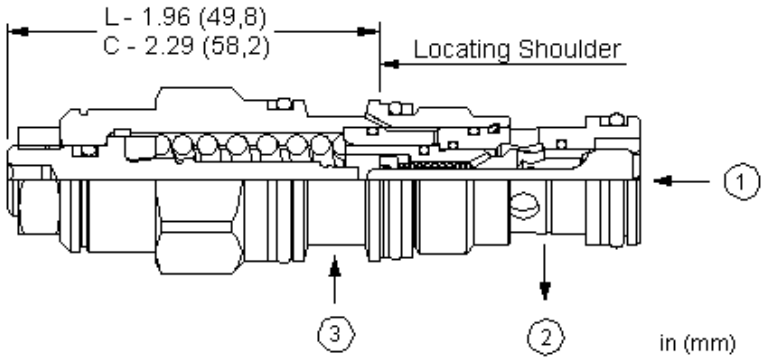
- Standard Material/Coating
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

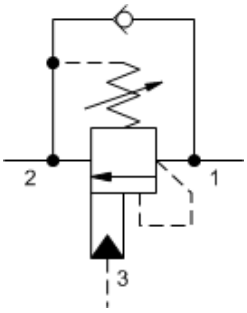
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

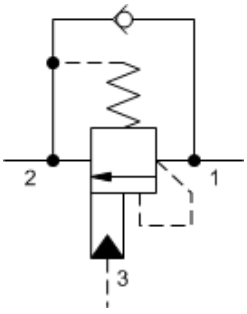
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

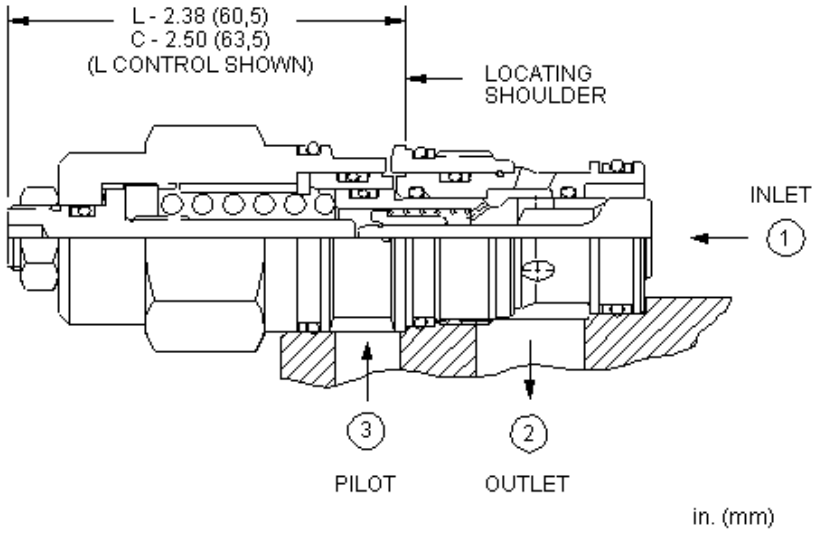
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

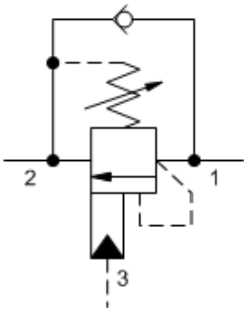
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

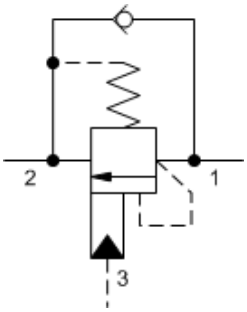
MATERIAL/COATING

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

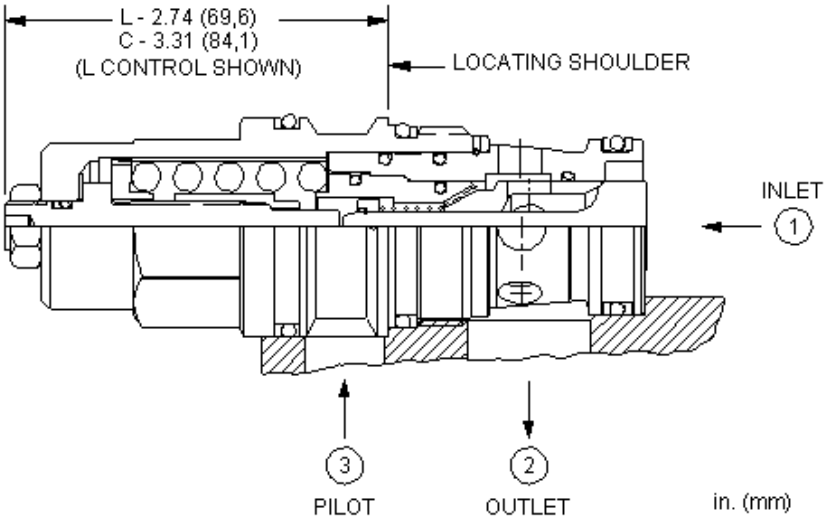
175 bar w/ 1,7 bar Check), 2000 psi
(140 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

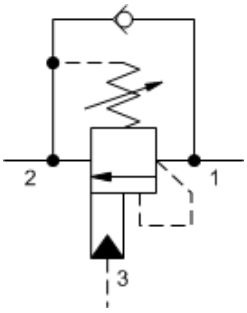
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

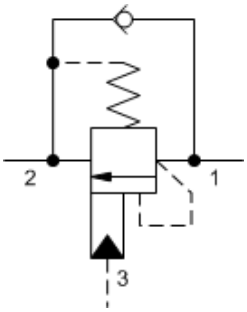
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

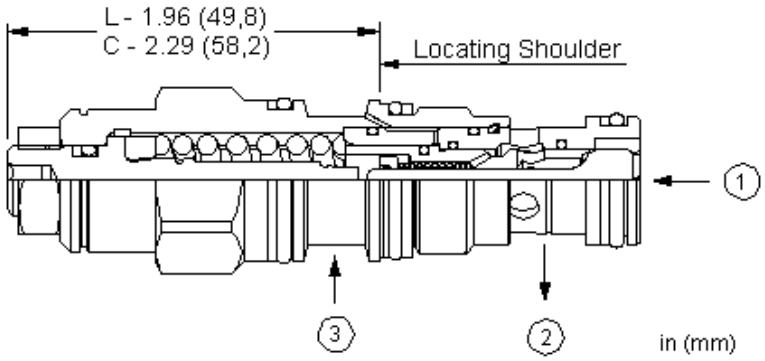
- Standard Material/Coating
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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: CBBCLHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

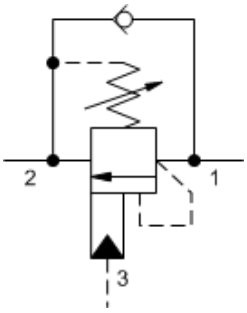
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

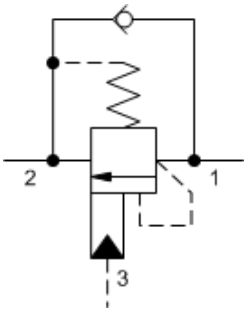
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

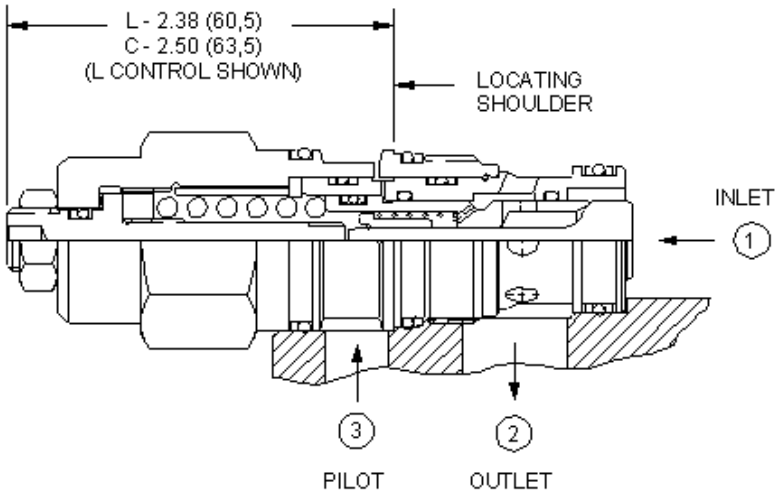
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

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

SEAL MATERIAL (N)

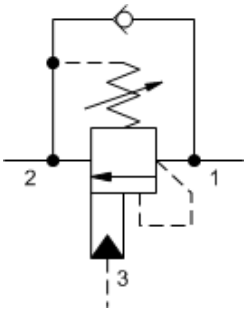
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

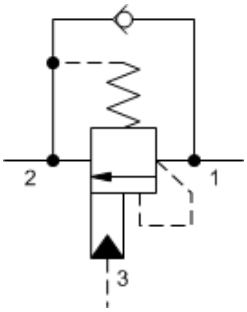
Standard Material/Coating

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

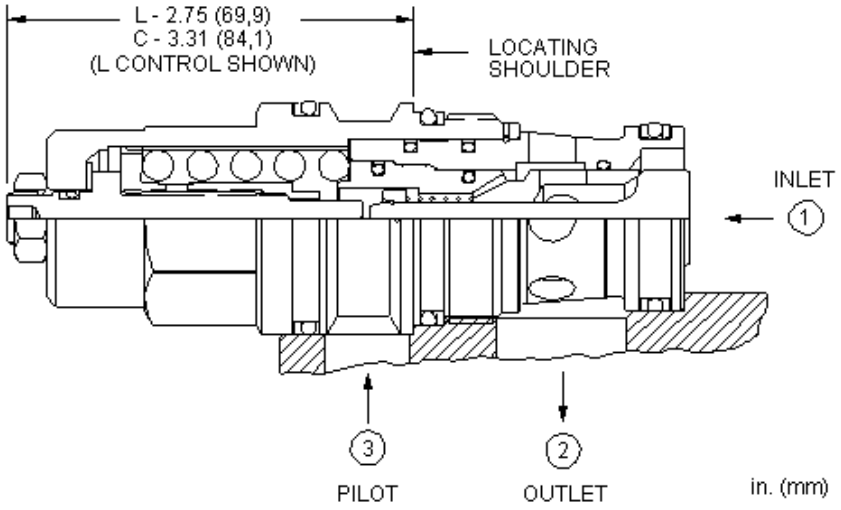
105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

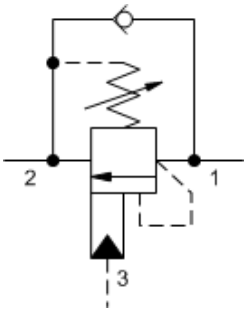
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

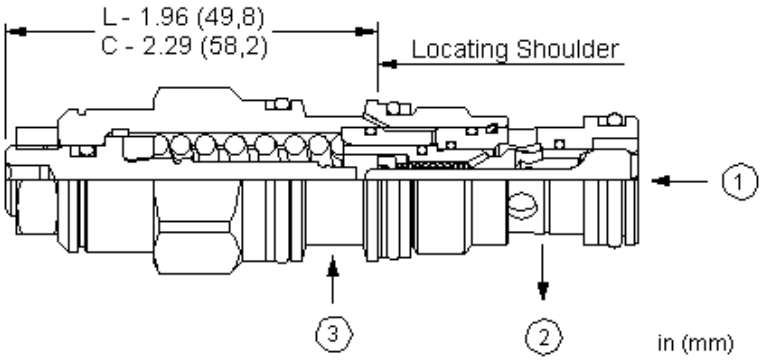
- **N** Buna-N
- **V** Viton

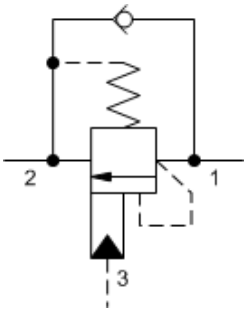
MATERIAL/COATING

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



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

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

CONFIGURATION OPTIONS

Model Code Example: CBBDLJN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

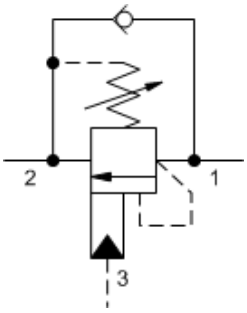
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

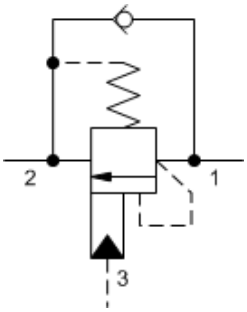
- **N** Buna-N
- **E** EPDM
- **V** Viton

MATERIAL/COATING

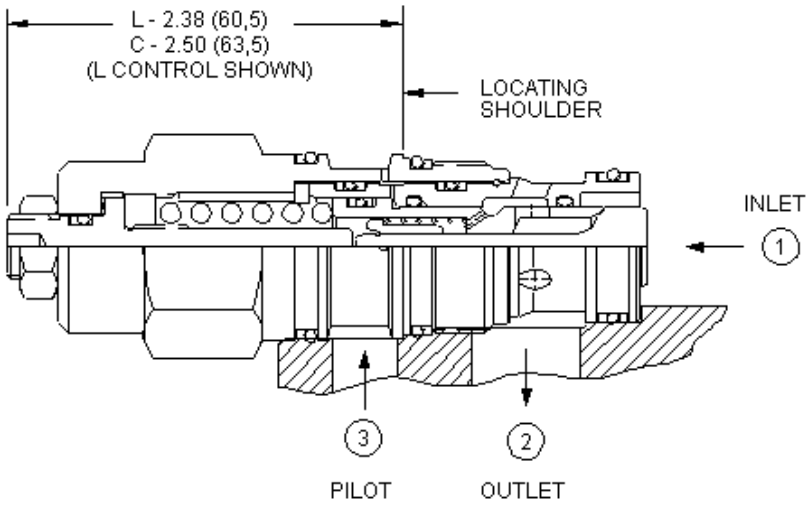
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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 (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

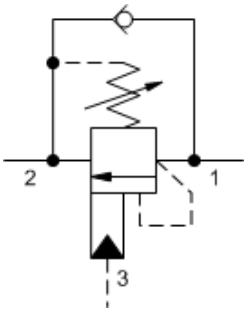
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

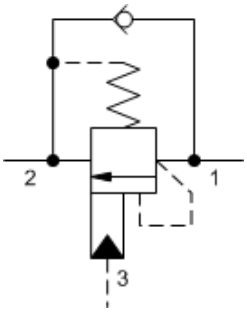
MATERIAL/COATING

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

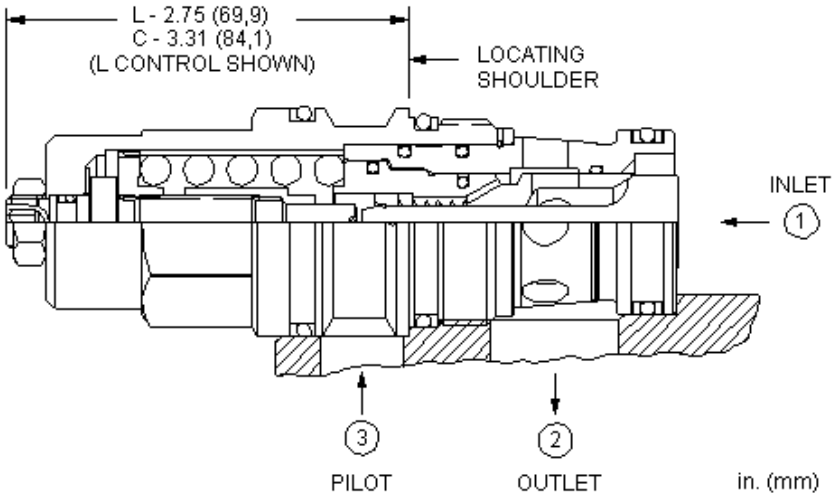
(140 bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

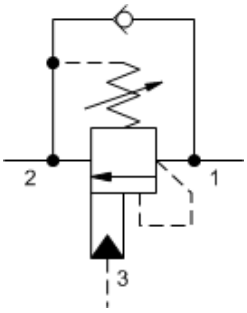
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

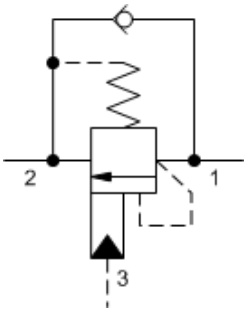
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

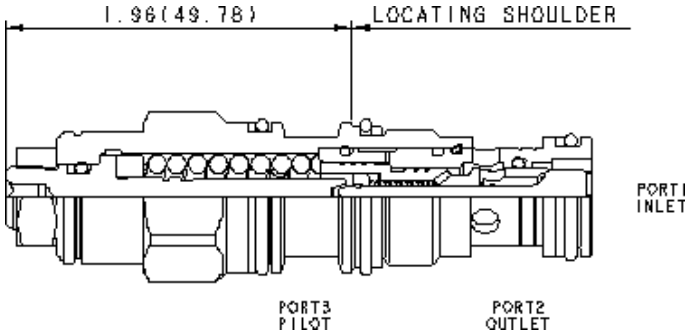
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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: CBBYLHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

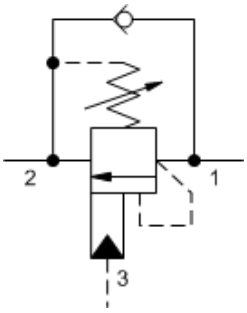
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

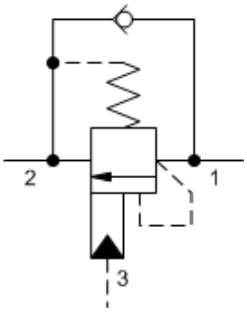
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

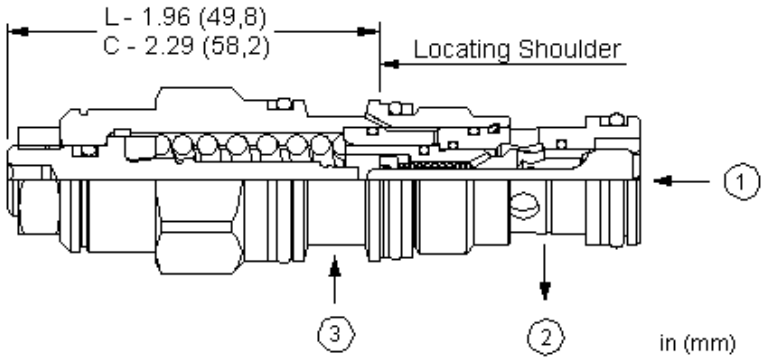
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

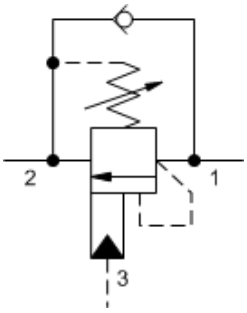
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

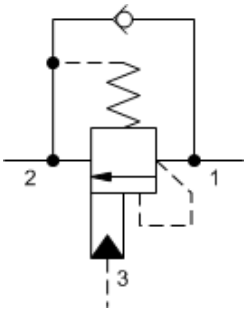
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

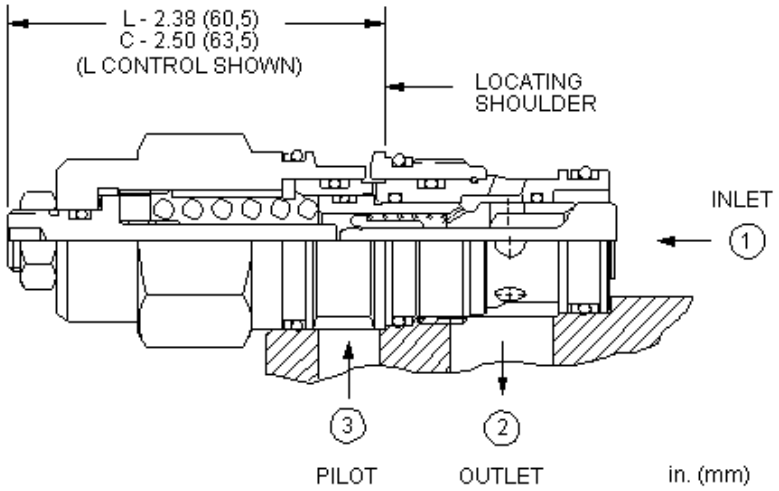
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

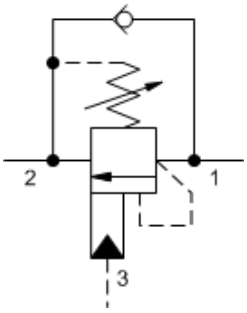
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

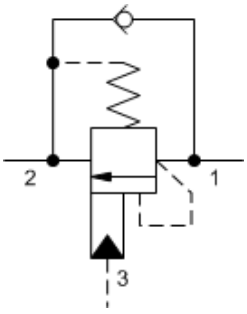
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

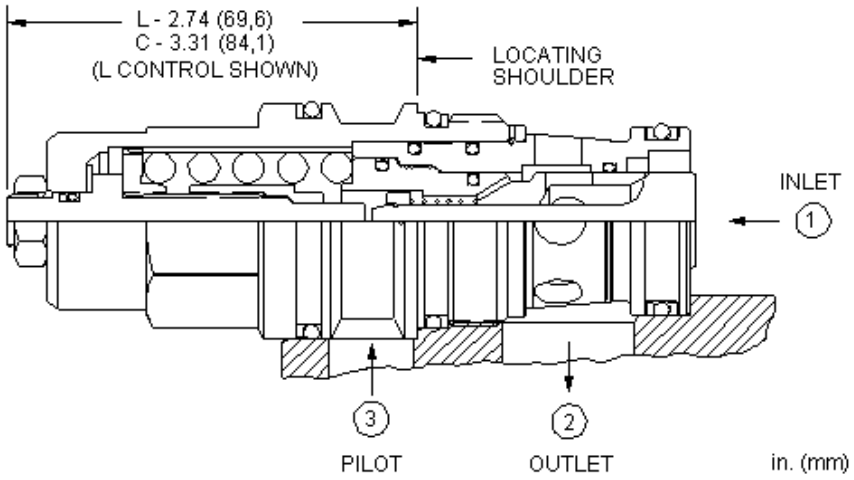
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

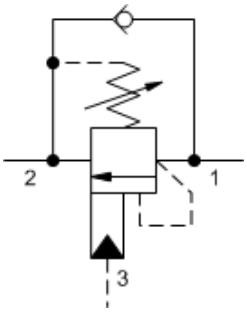
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

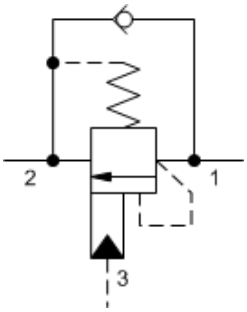
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

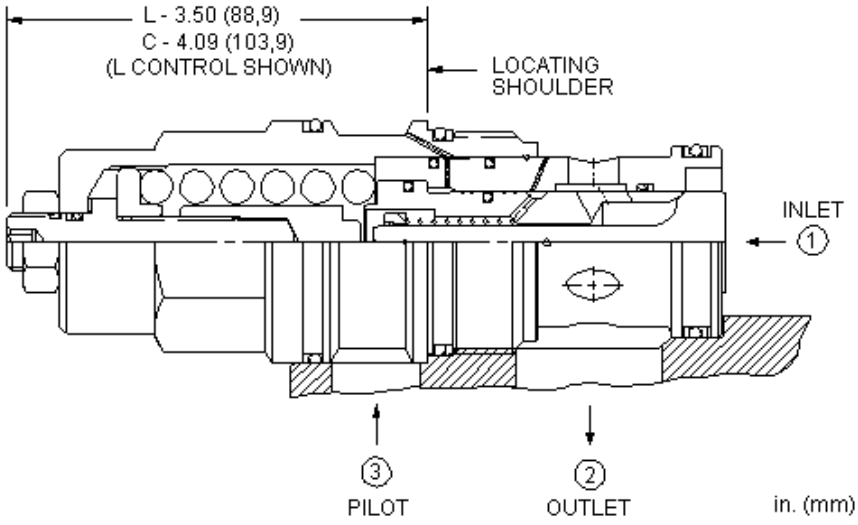
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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: CBHALHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

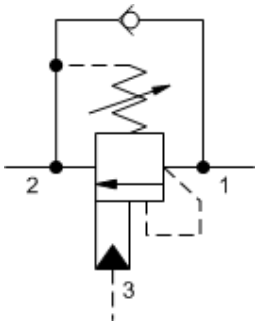
FUNCTIONAL SETTING RANGE (H)

- **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

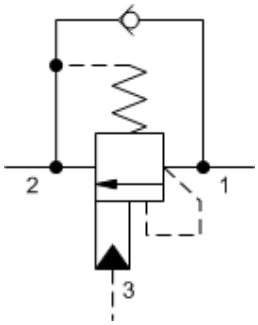
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

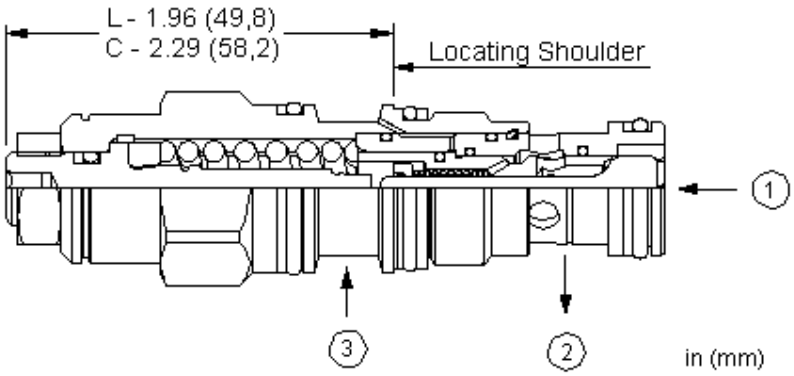
bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

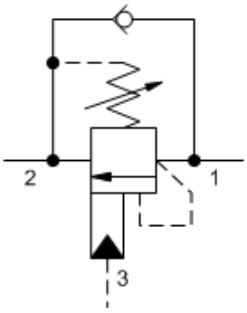
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

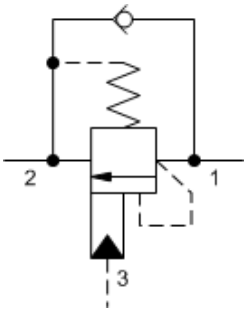
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

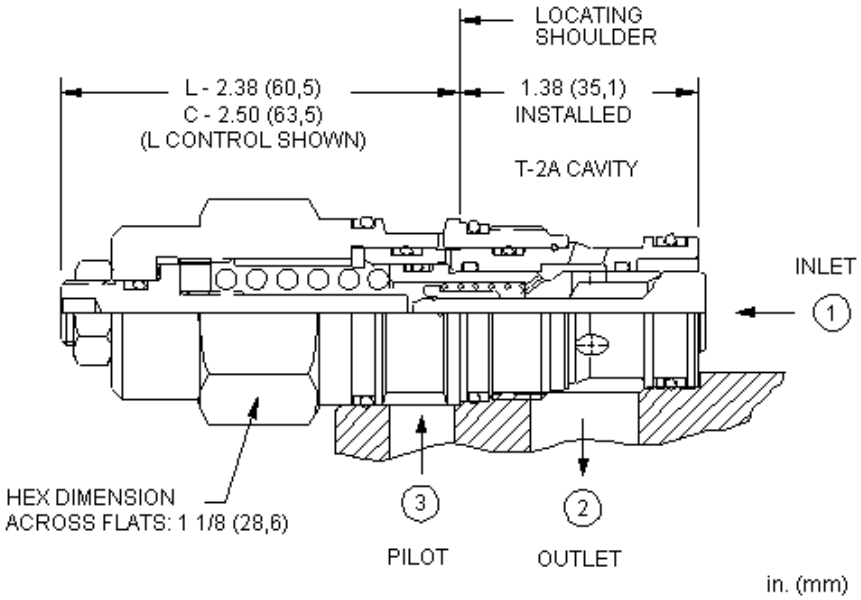
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

- **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

SEAL MATERIAL (N)

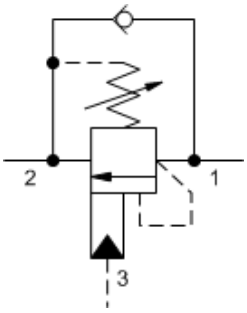
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

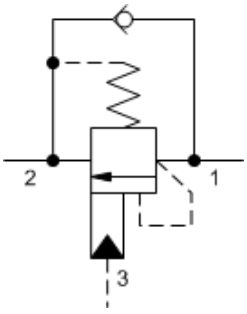
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel

(140 bar) Standard Setting

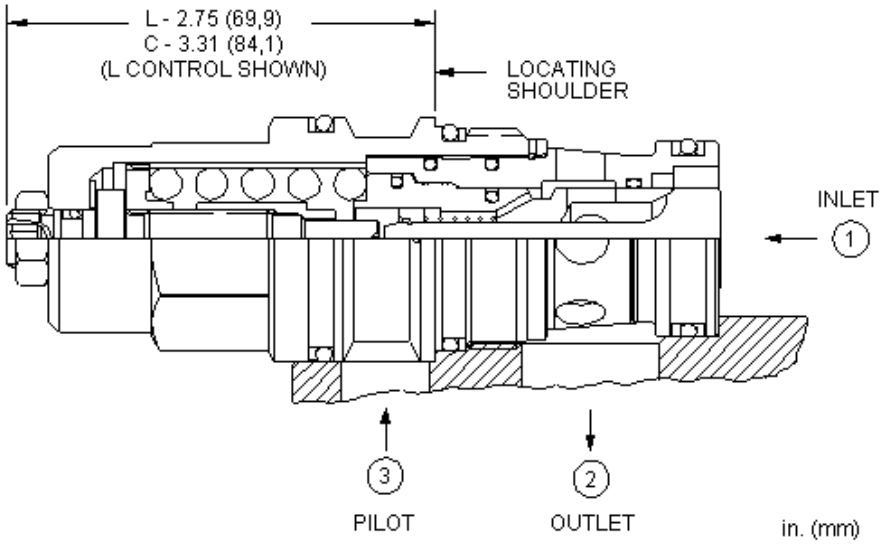
K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

L Standard Screw Adjustment
C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

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

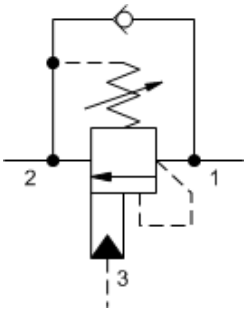
SEAL MATERIAL (N)

N Buna-N
V Viton

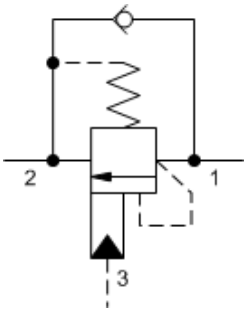
MATERIAL/COATING

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

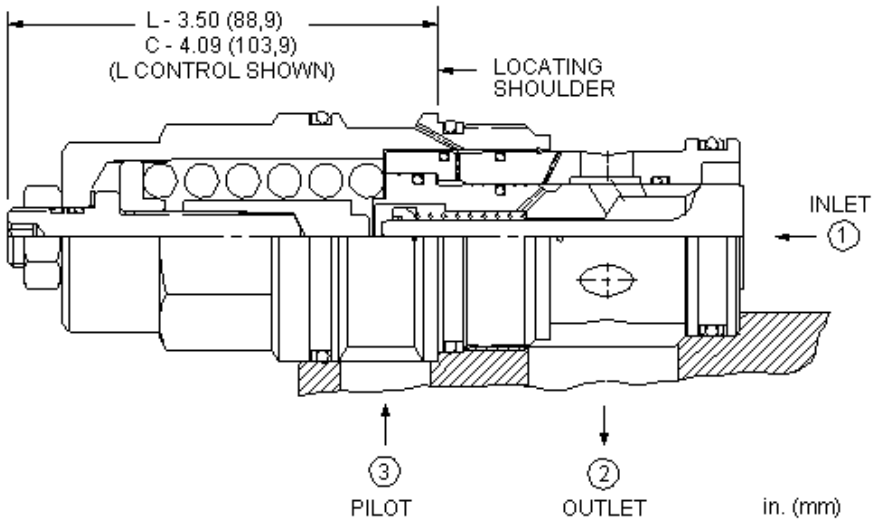
175 bar w/ 1,7 bar Check), 2000 psi
(140 bar) Standard Setting



3-Port Non-vented



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

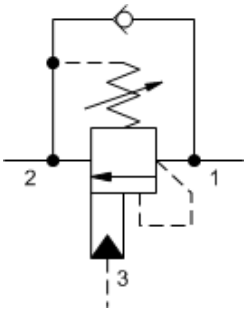
FUNCTIONAL SETTING RANGE (J)

- **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

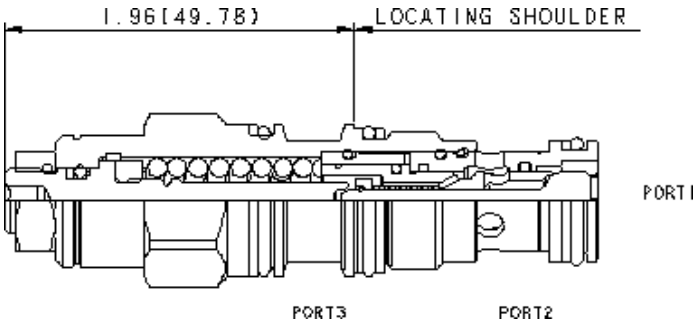
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

(140 bar) Standard Setting



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set
- **R** Lockwired Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

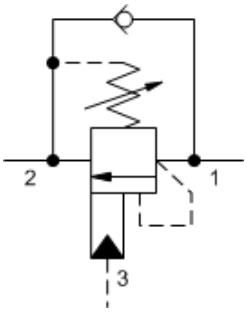
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

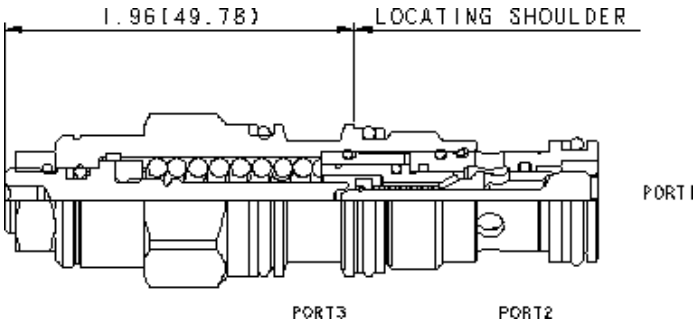
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

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



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set
- **R** Lockwired Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

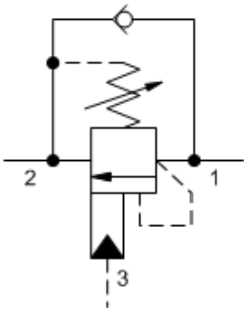
- **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar)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

SEAL MATERIAL (N)

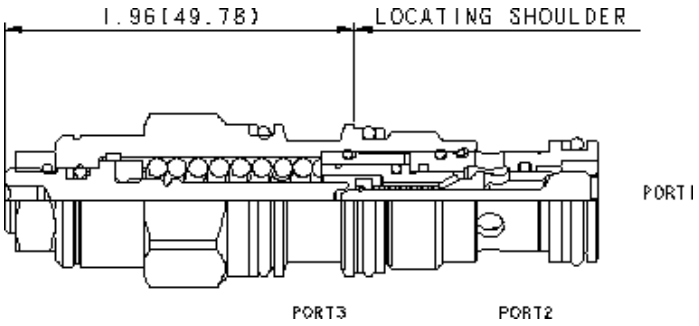
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

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



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set
- **R** Lockwired Screw Adjustment

FUNCTIONAL SETTING RANGE (J)

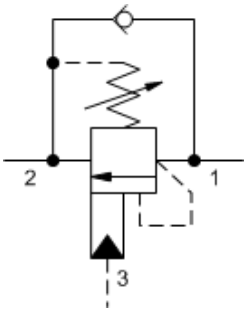
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

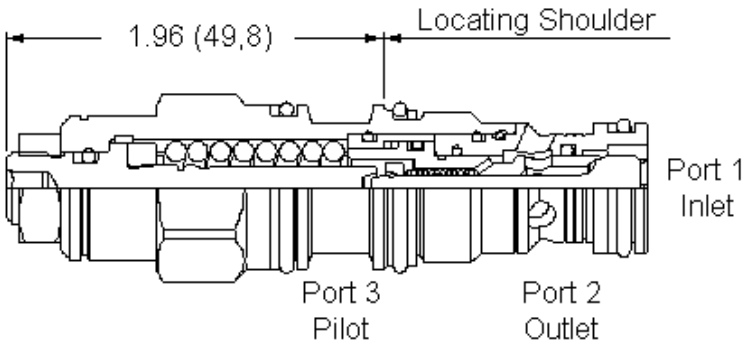
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

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



3-Port Non-vented



in (mm)

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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (J)

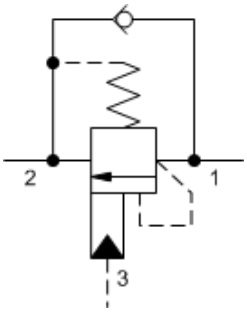
- **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140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

SEAL MATERIAL (N)

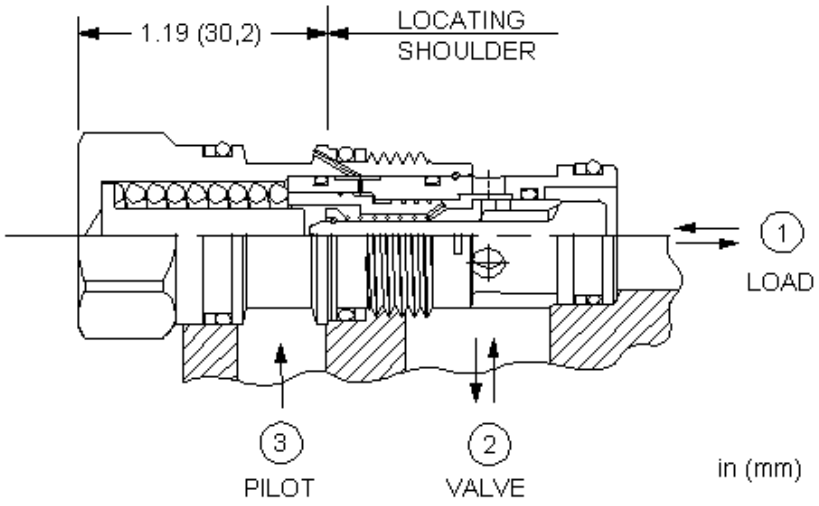
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

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



3-Port Non-vented, Fixed Setting



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

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

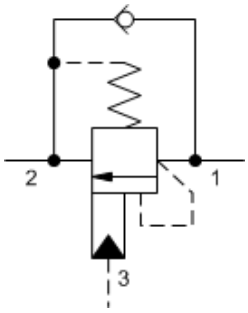
TECHNICAL DATA

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

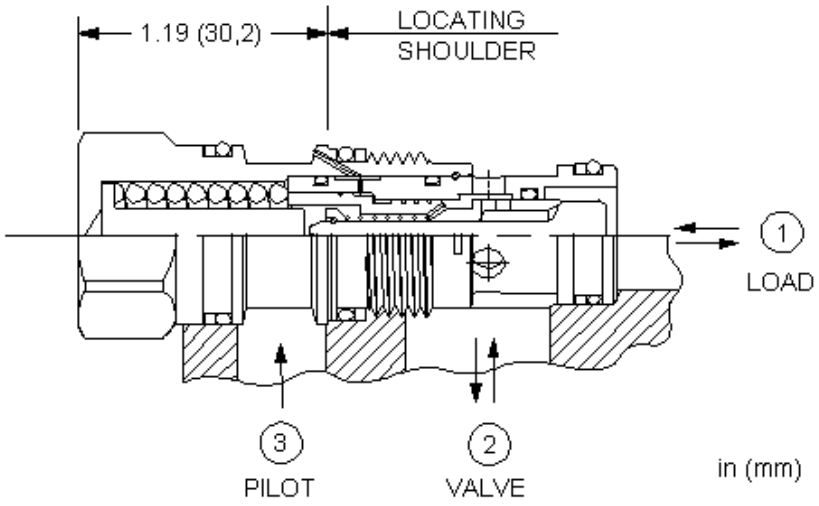
CONFIGURATION OPTIONS

Model Code Example: CBCLXMN

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



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.

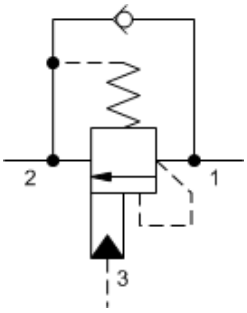
TECHNICAL DATA

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

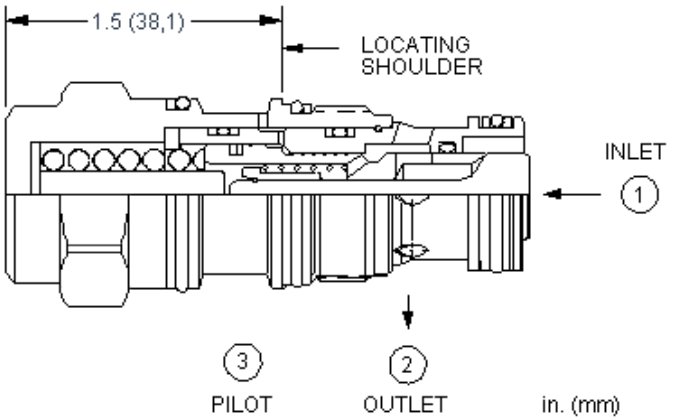
CONFIGURATION OPTIONS

Model Code Example: CBCAXNN

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



3-Port Non-vented, Fixed Setting



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

TECHNICAL DATA

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

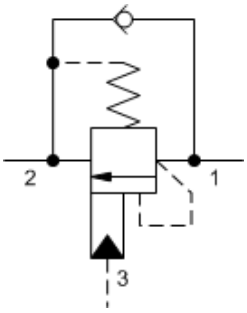
CONFIGURATION OPTIONS

Model Code Example: CBEAXNN

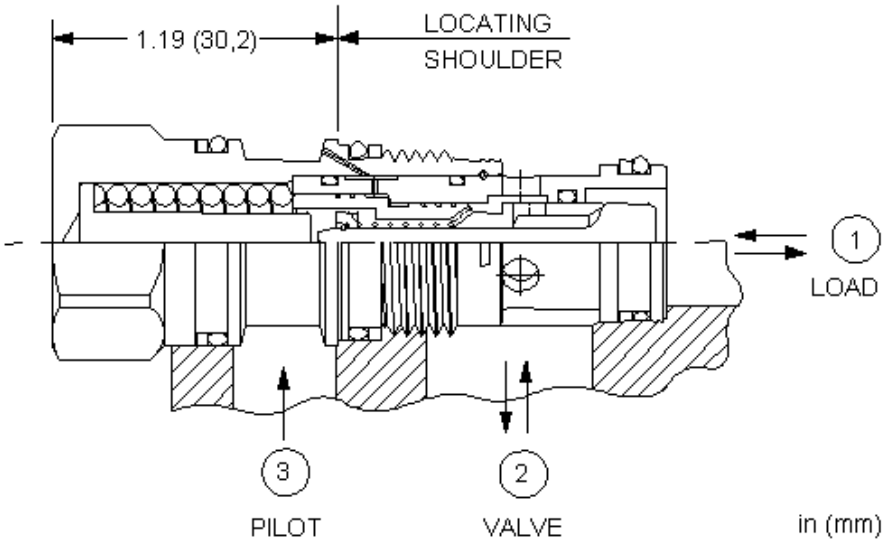
FIXED PRESSURE RANGE	(N)
N 2900 - 3500 psi (200 - 245 bar)	
P 2250 - 2680 psi (155 - 185 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	

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



3-Port Non-vented, Fixed Setting



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

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

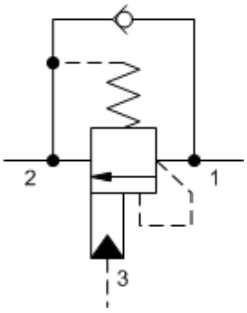
TECHNICAL DATA

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

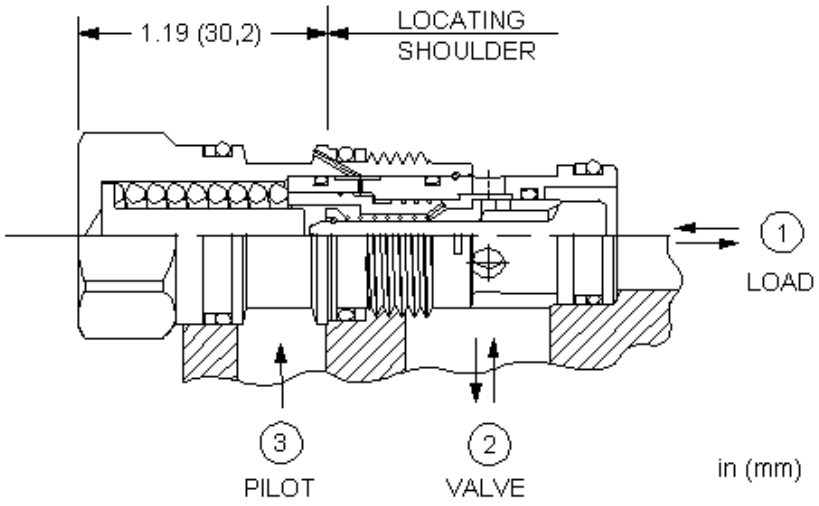
CONFIGURATION OPTIONS

Model Code Example: CBCGXMN

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



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.

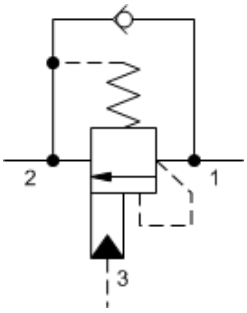
TECHNICAL DATA

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

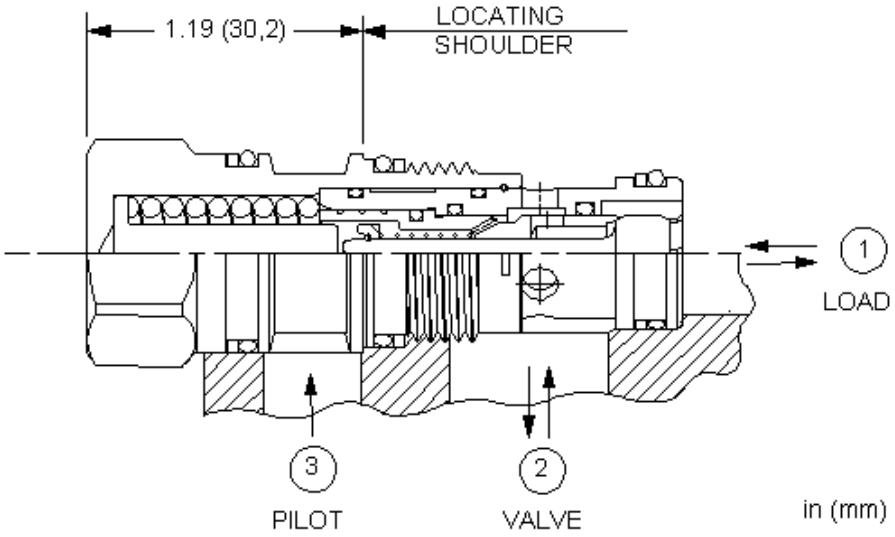
CONFIGURATION OPTIONS

Model Code Example: CBCHXMN

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



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.

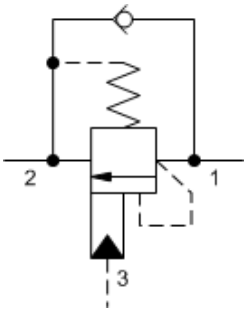
TECHNICAL DATA

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

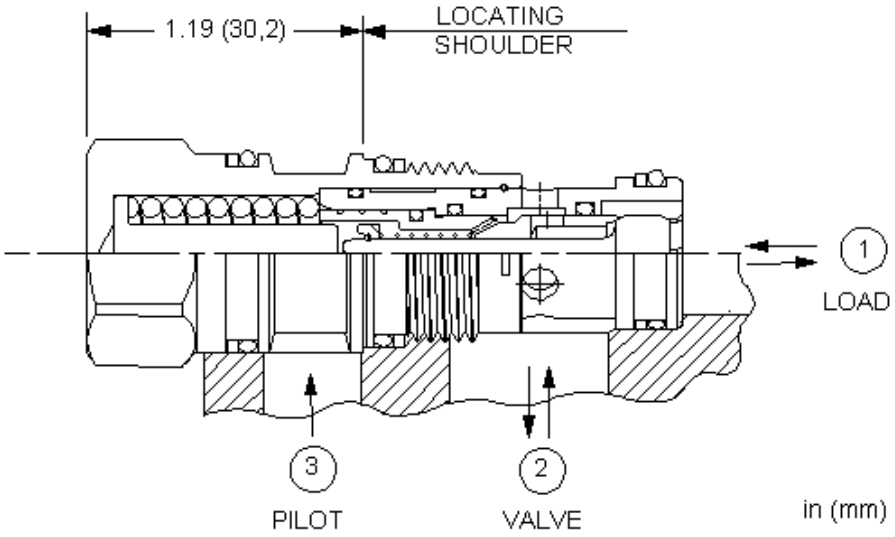
CONFIGURATION OPTIONS

Model Code Example: CBBLXMN

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



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

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

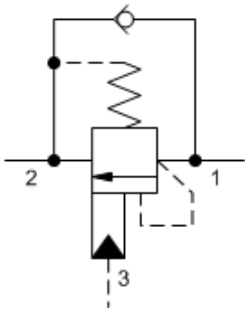
CONFIGURATION OPTIONS

Model Code Example: CBBCXNN

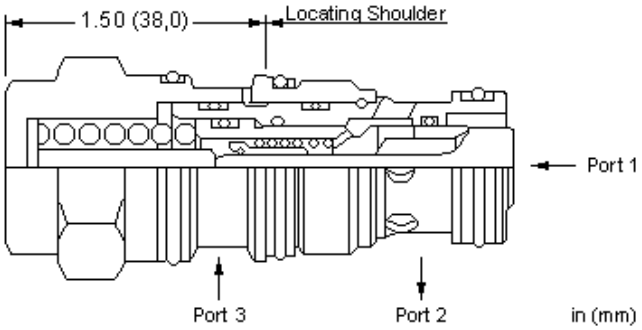
FIXED PRESSURE RANGE	(N)
N 2900 - 3500 psi (200 - 245 bar)	
P 2250 - 2680 psi (155 - 185 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	

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



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.

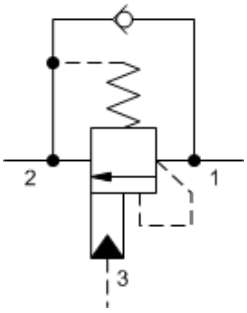
TECHNICAL DATA

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

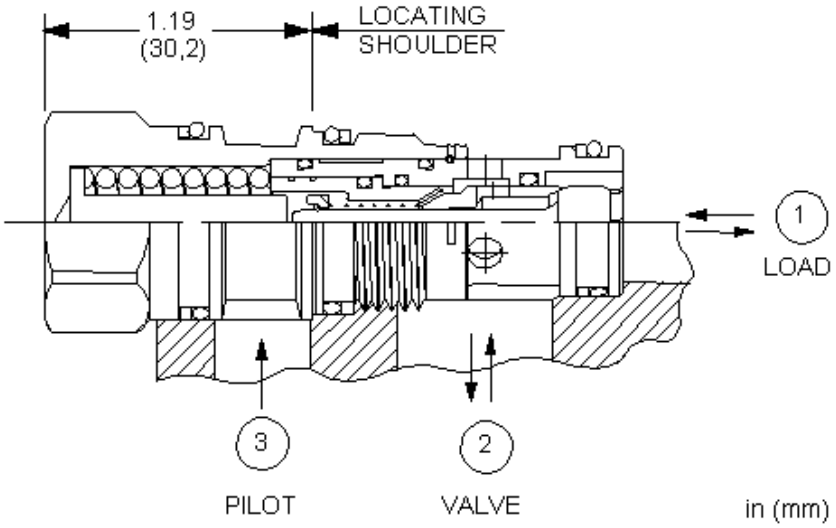
CONFIGURATION OPTIONS

Model Code Example: CBDCXNN

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



3-Port Non-vented, Fixed Setting



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

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

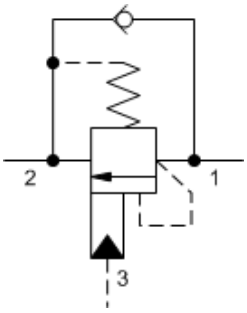
TECHNICAL DATA

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

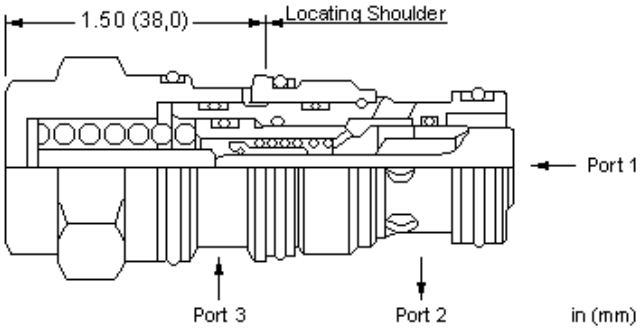
CONFIGURATION OPTIONS

Model Code Example: CBBDXXN

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



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.

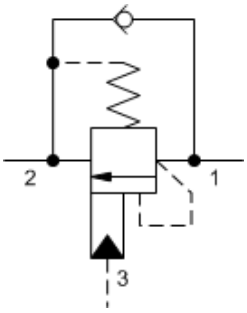
TECHNICAL DATA

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

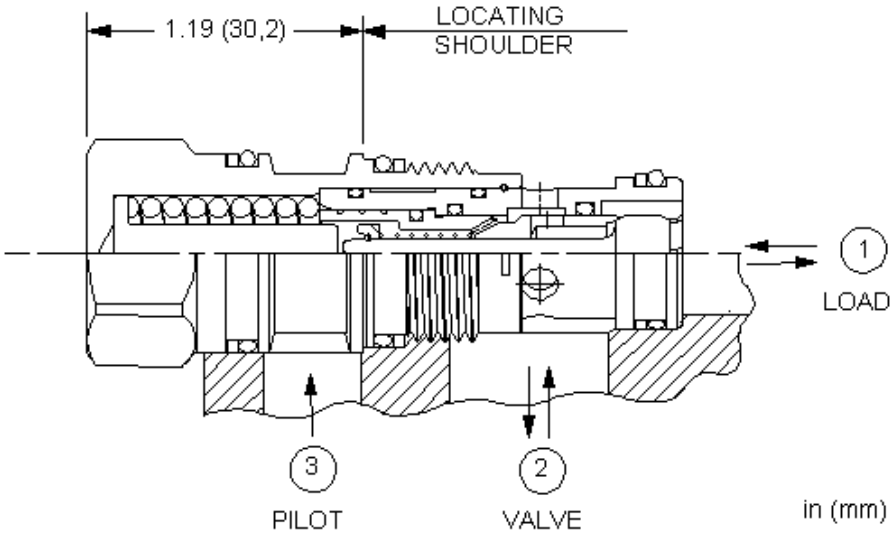
CONFIGURATION OPTIONS

Model Code Example: CBDDXXN

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



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.

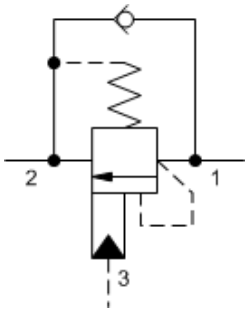
TECHNICAL DATA

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

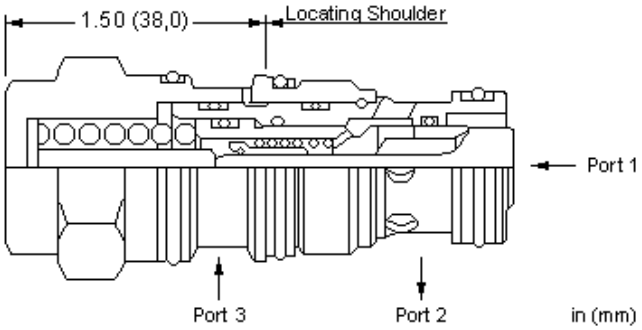
CONFIGURATION OPTIONS

Model Code Example: CBBAXNN

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



3-Port Non-vented, Fixed Setting



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

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

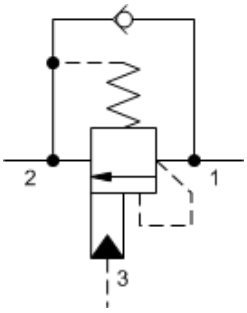
TECHNICAL DATA

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

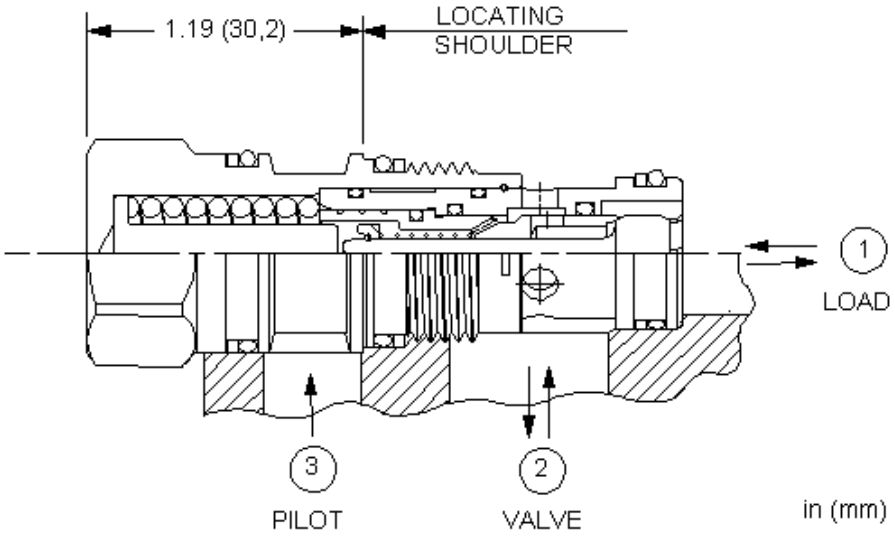
CONFIGURATION OPTIONS

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



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.

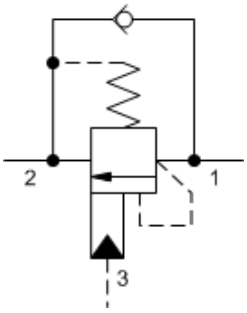
TECHNICAL DATA

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

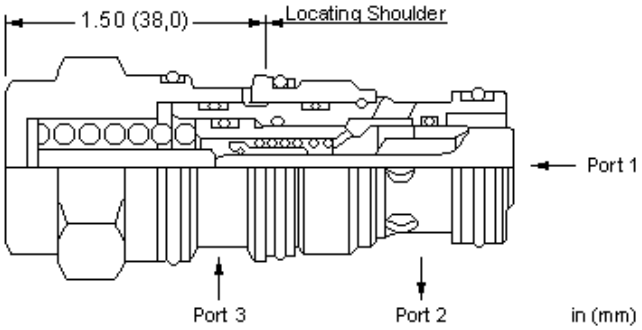
CONFIGURATION OPTIONS

Model Code Example: CBBGXMN

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



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.

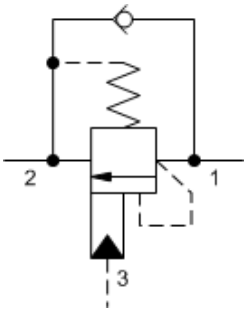
TECHNICAL DATA

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

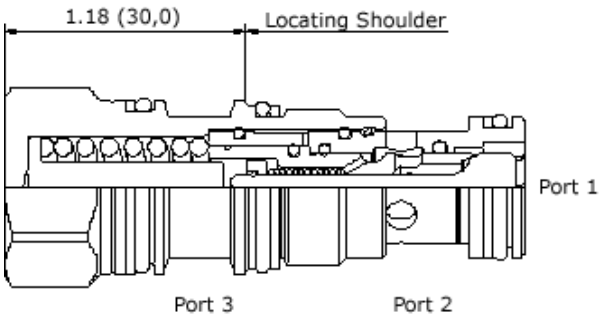
CONFIGURATION OPTIONS

Model Code Example: CBDGXXN

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



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

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

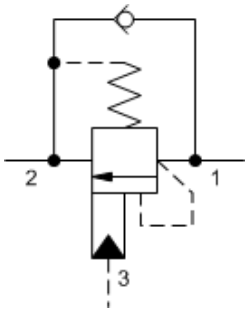
CONFIGURATION OPTIONS

Model Code Example: CBABXNN

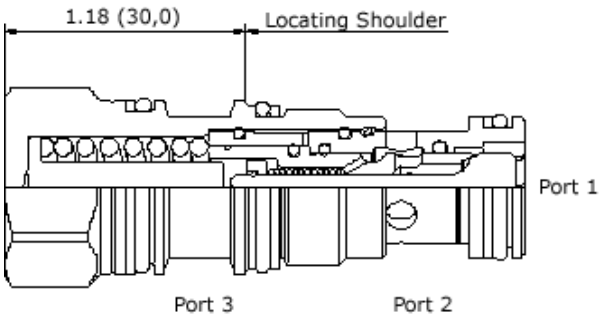
FIXED PRESSURE RANGE	(N)
N 2900 - 3500 psi (200 - 245 bar)	
P 2250 - 2680 psi (155 - 185 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	

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



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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

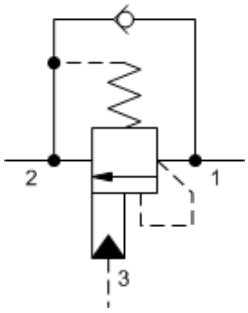
CONFIGURATION OPTIONS

Model Code Example: CBAAXNN

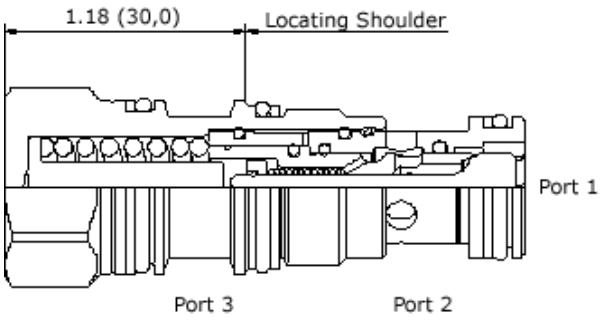
FIXED PRESSURE RANGE	(N)
N 2900 - 3500 psi (200 - 245 bar)	
P 2250 - 2680 psi (155 - 185 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	

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



3-Port Non-vented, Fixed Setting



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

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

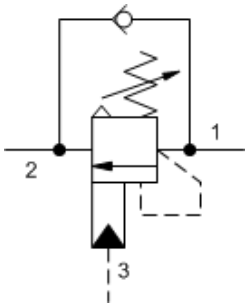
TECHNICAL DATA

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

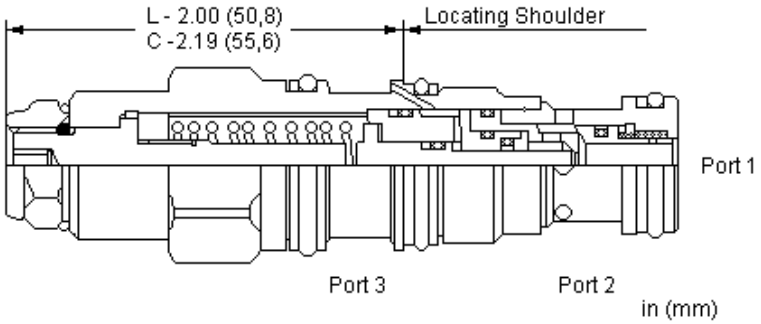
CONFIGURATION OPTIONS

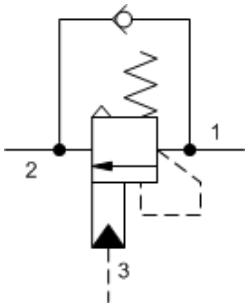
Model Code Example: CBAGXMN

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



3-Port Atmospherically Referenced





3-Port Atmospherically Referenced, Non-adjustable

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

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

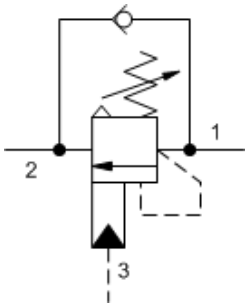
TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

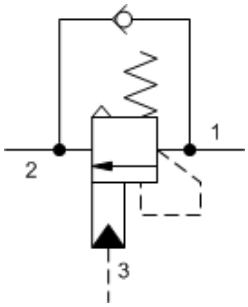
CONFIGURATION OPTIONS

Model Code Example: CABKLHN

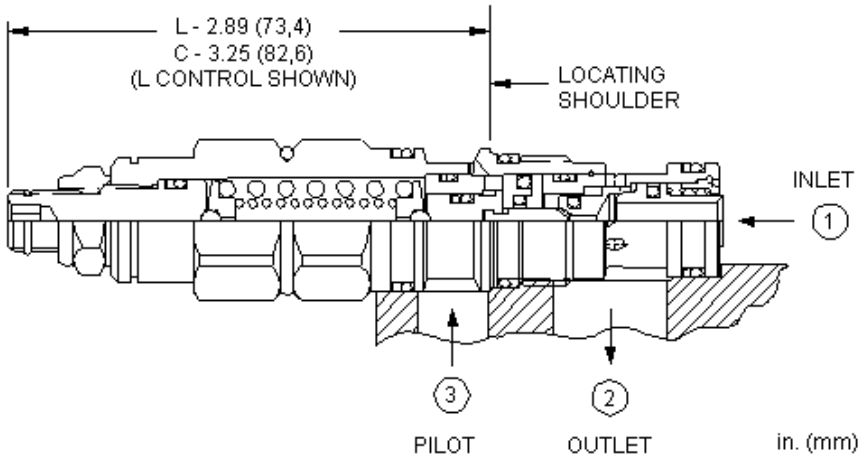
CONTROL (L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)
L Standard Screw Adjustment	**H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting	**N** Buna-N
C Tamper Resistant - Factory Set		**V** Viton



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.

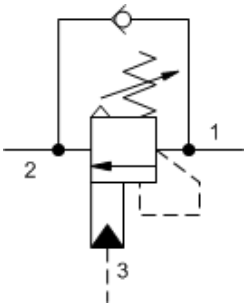
TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

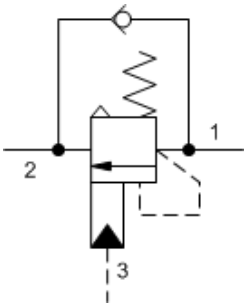
CONFIGURATION OPTIONS

Model Code Example: CACKLHN

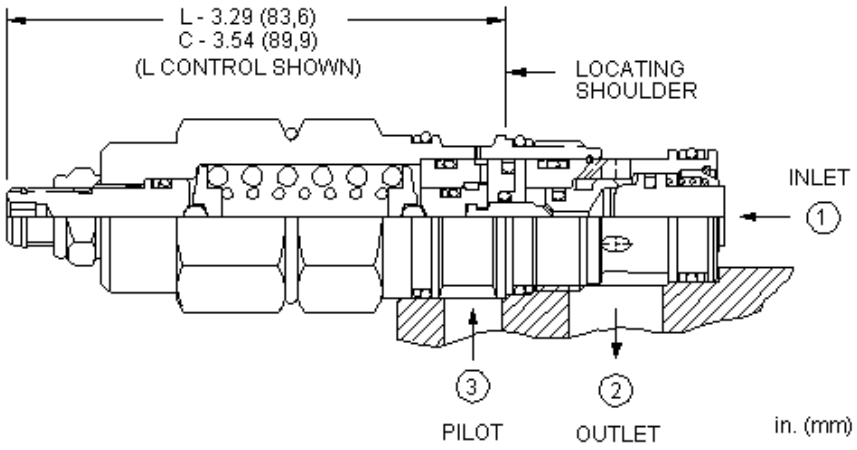
CONTROL (L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)	MATERIAL/COATING
L Standard Screw Adjustment	**H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting	**N** Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	**I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar)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



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

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 - Number of Counterclockwise Turns to Increase 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)

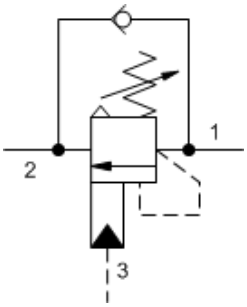
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

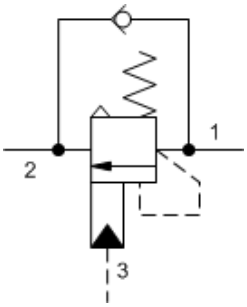
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

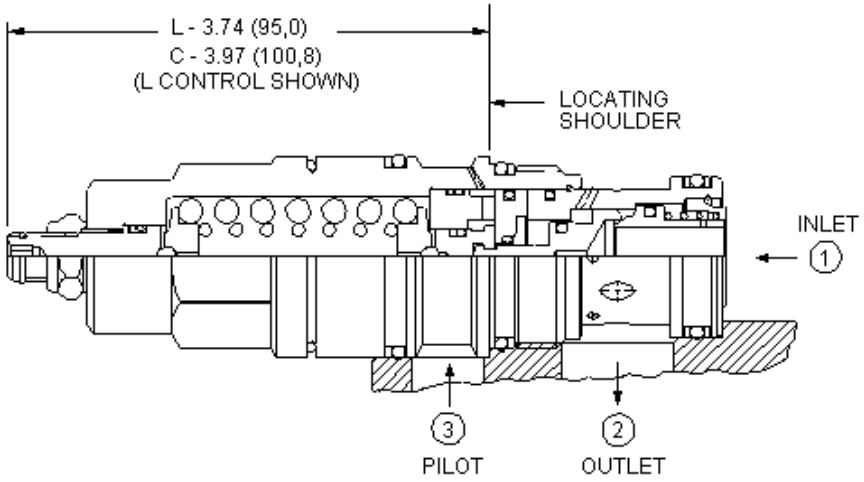
- **N** Buna-N
- **V** Viton



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

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 - Number of Counterclockwise Turns to Increase 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)

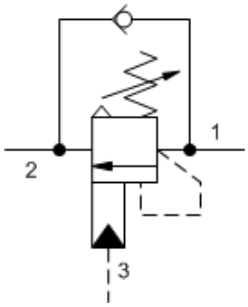
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

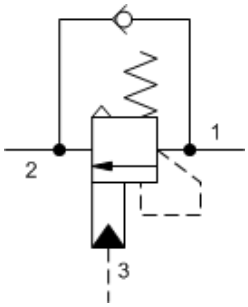
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

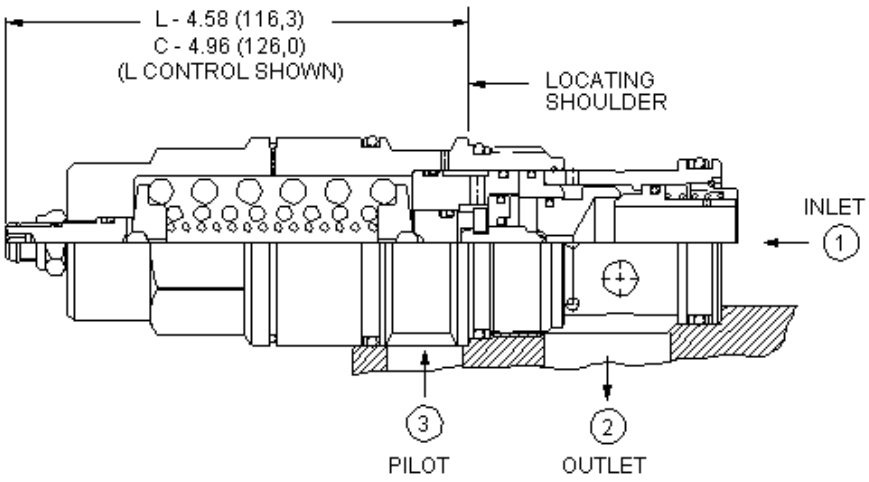
- **N** Buna-N
- **V** Viton



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

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 - Number of Counterclockwise Turns to Increase 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)

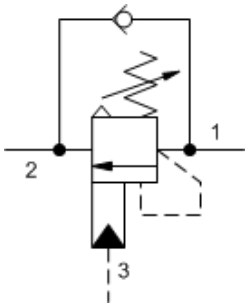
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

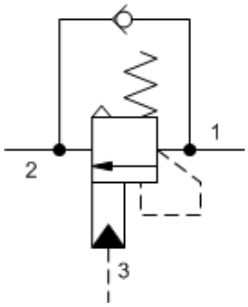
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

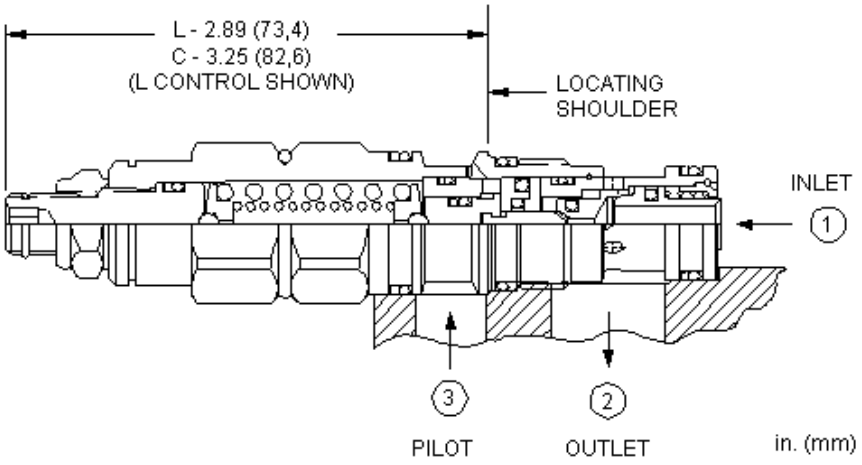
- **N** Buna-N
- **V** Viton



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (F)

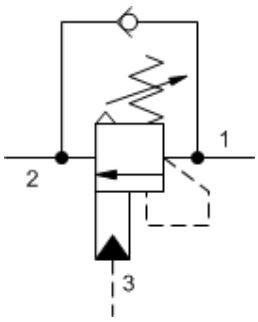
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting

SEAL MATERIAL (N)

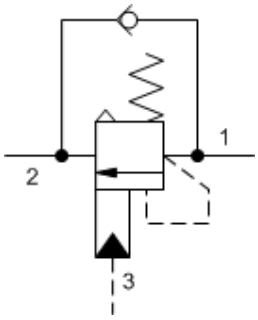
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

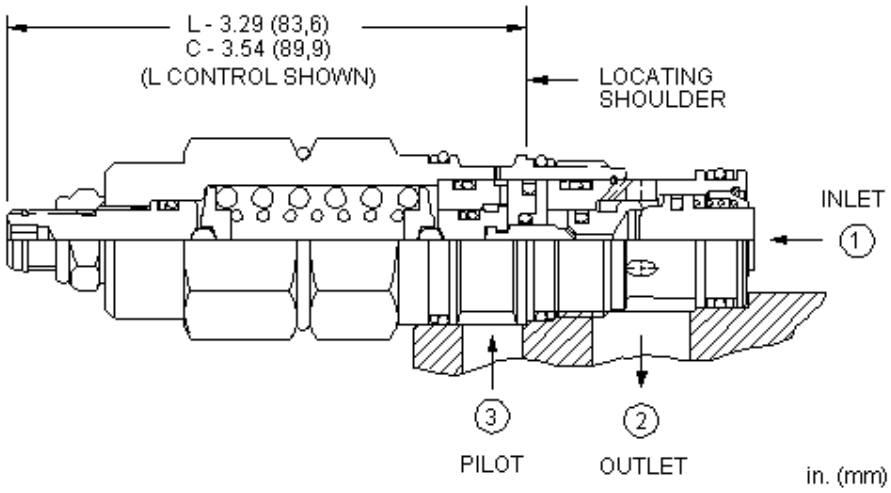
- Standard Material/Coating
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

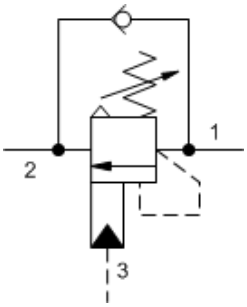
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

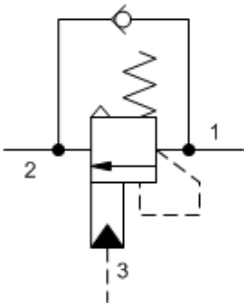
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

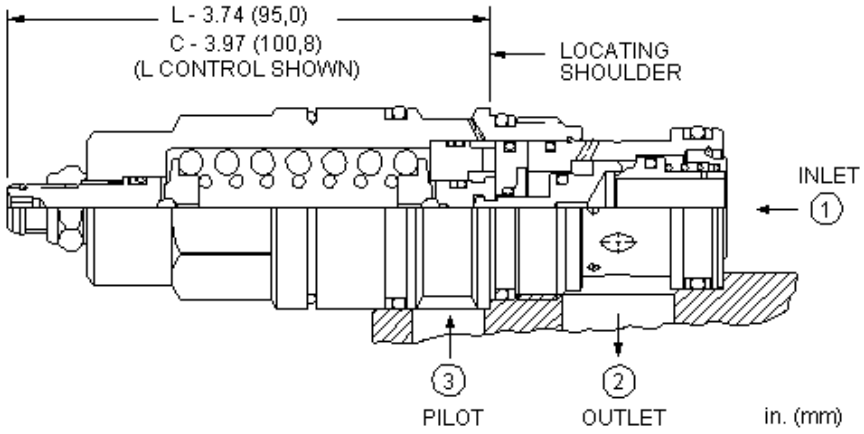
- **N** Buna-N
- **V** Viton



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

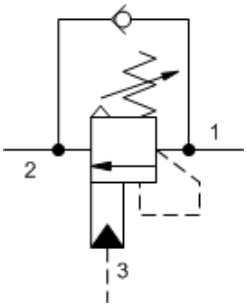
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

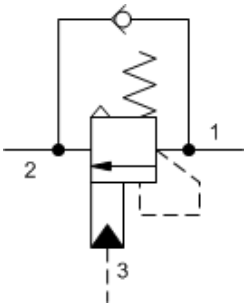
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

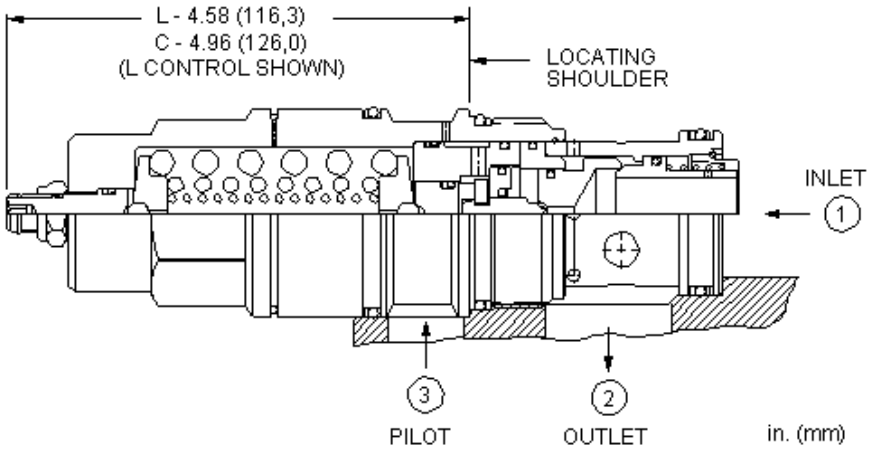
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

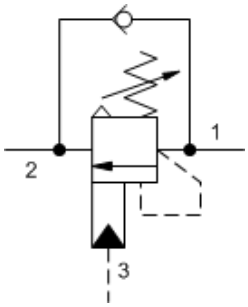
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

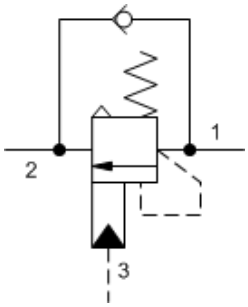
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

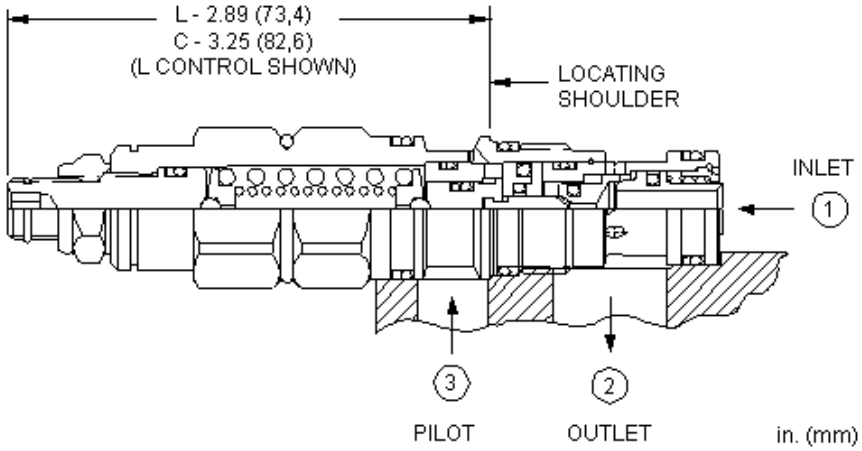
- Standard Material/Coating
- **/LH** Mild Steel, Zinc-Nickel



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.

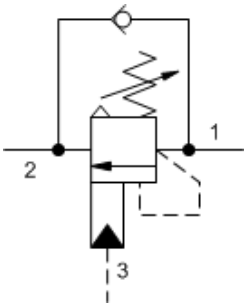
TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

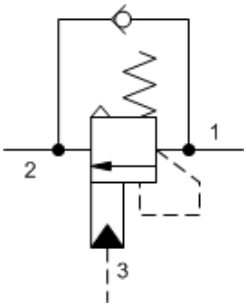
CONFIGURATION OPTIONS

Model Code Example: CACALHN

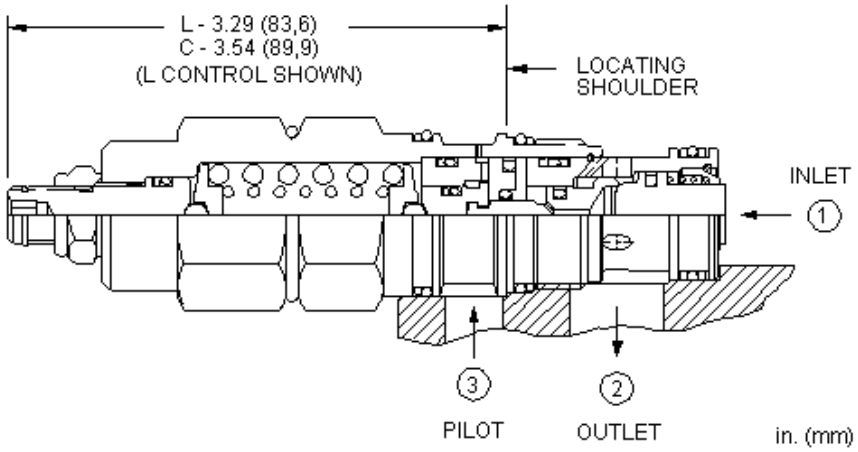
CONTROL (L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)	MATERIAL/COATING
L Standard Screw Adjustment	**H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting	**N** Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	**I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar)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



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

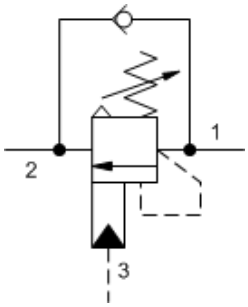
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

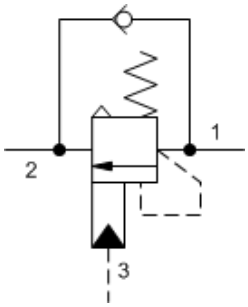
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

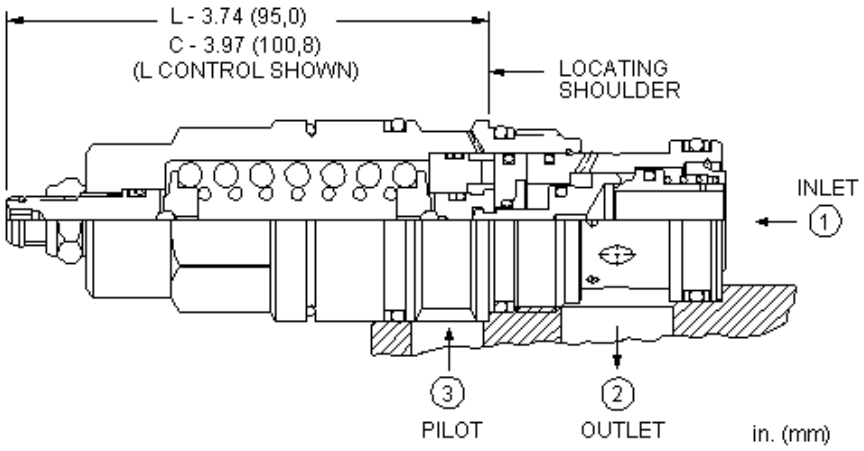
- Standard Material/Coating
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

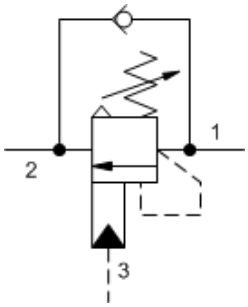
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

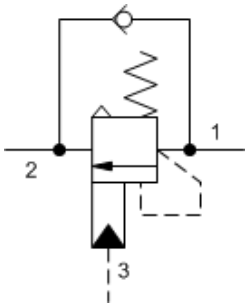
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

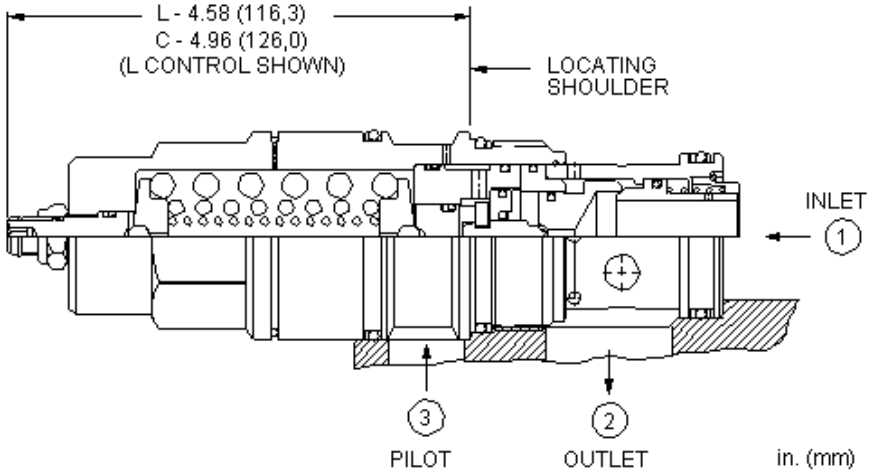
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

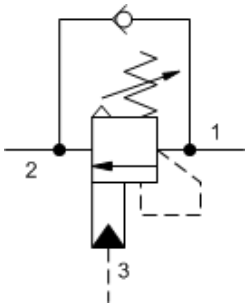
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

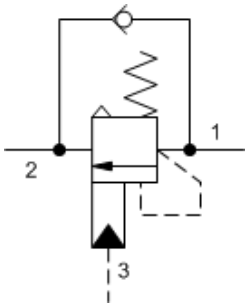
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

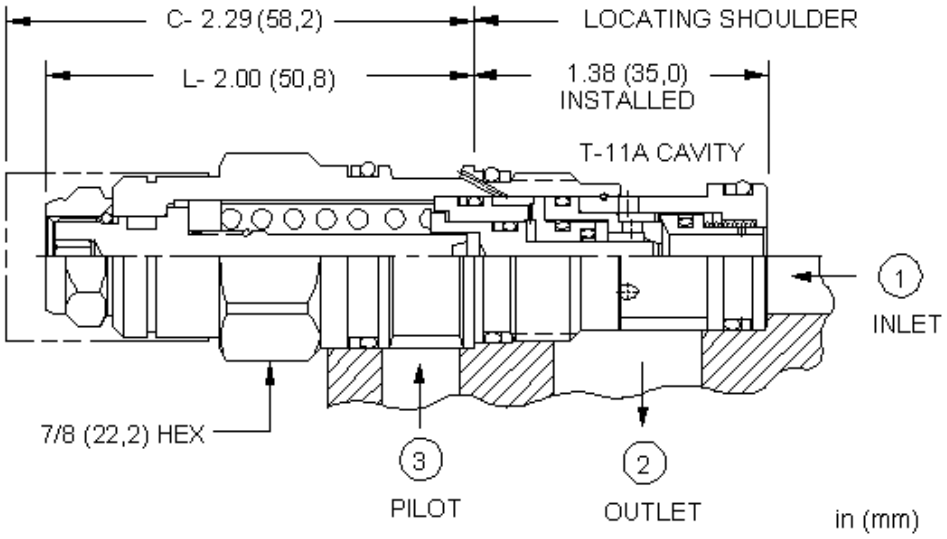
- **N** Buna-N
- **V** Viton



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.

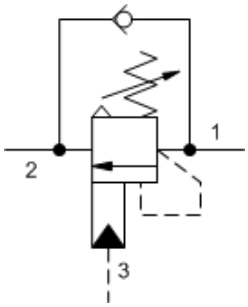
TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

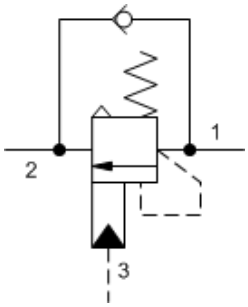
CONFIGURATION OPTIONS

Model Code Example: CABGLHN

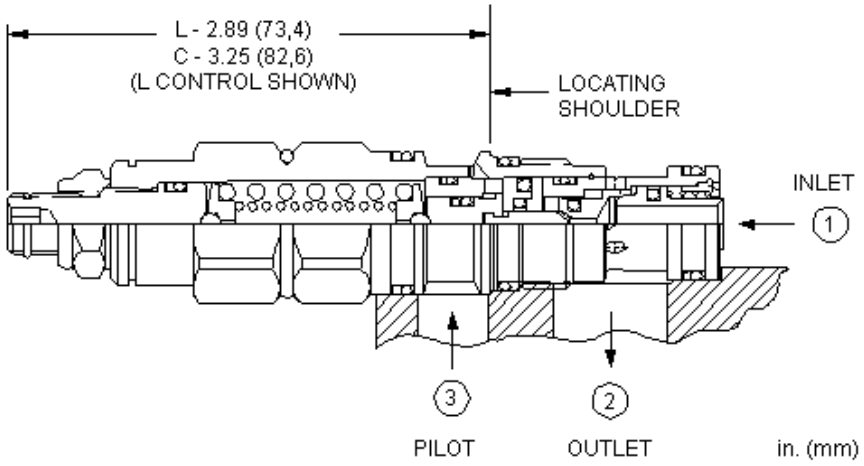
CONTROL (L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)
L Standard Screw Adjustment	**H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting	**N** Buna-N
C Tamper Resistant - Factory Set		**V** Viton



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.

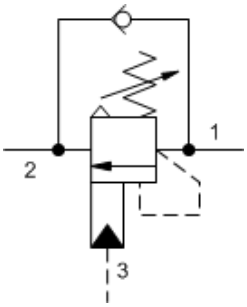
TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

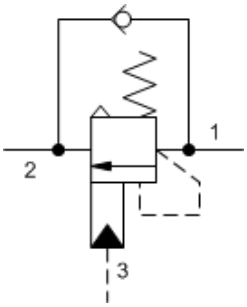
CONFIGURATION OPTIONS

Model Code Example: CACGLGN

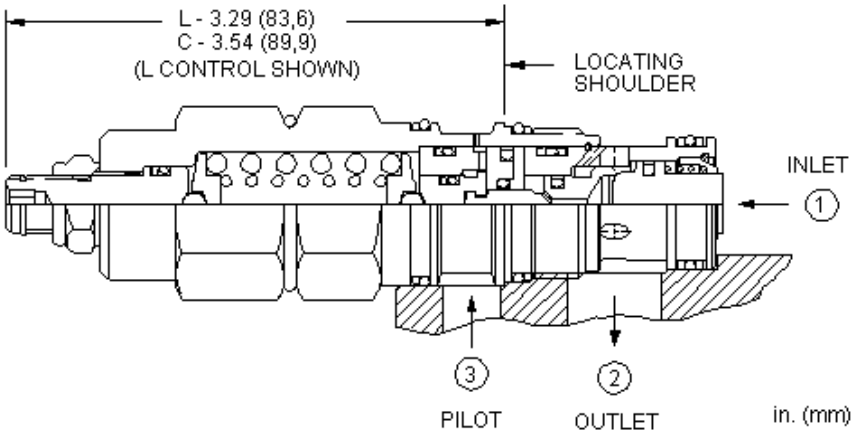
CONTROL (L)	FUNCTIONAL SETTING RANGE (G)	SEAL MATERIAL (N)	MATERIAL/COATING
L Standard Screw Adjustment	**G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting	**N** Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	**F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140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



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

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

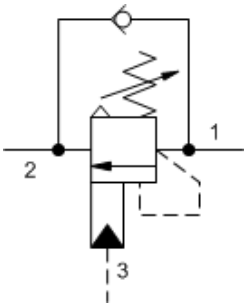
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

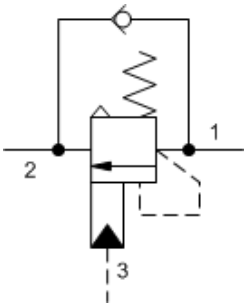
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

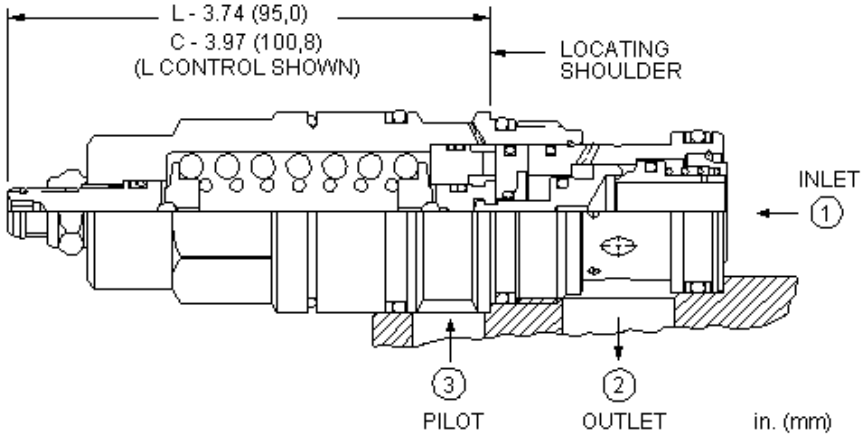
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated



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

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

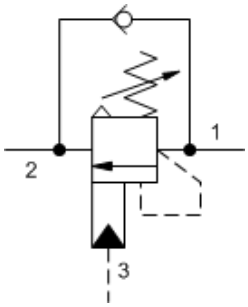
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

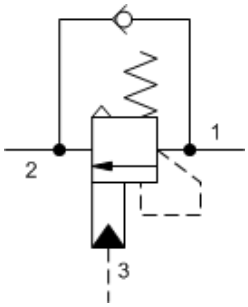
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

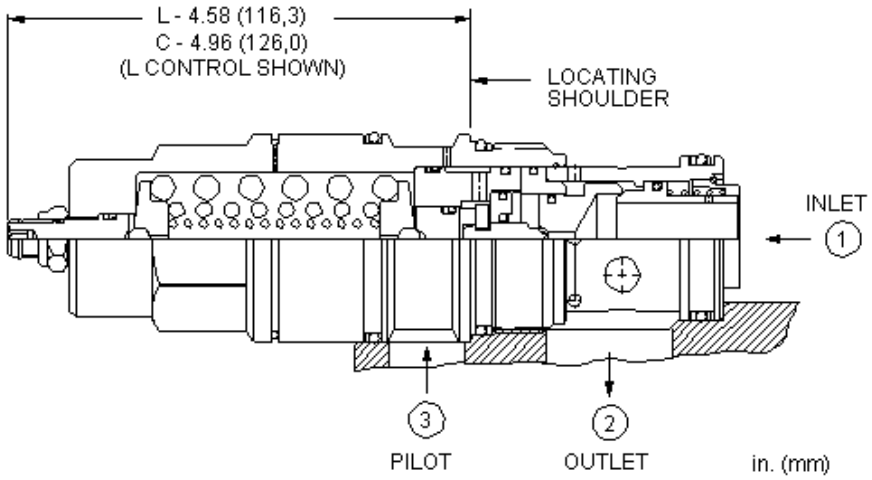
- **N** Buna-N
- **V** Viton



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

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 - Number of Counterclockwise Turns to Increase 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

CONFIGURATION OPTIONS

Model Code Example: CAIGLGN

CONTROL (L)

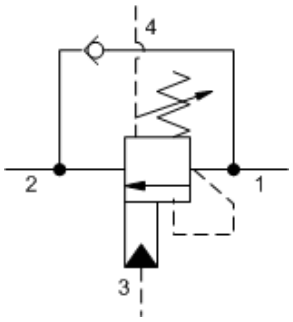
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

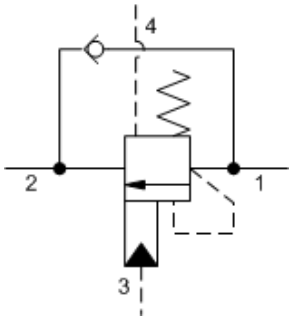
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

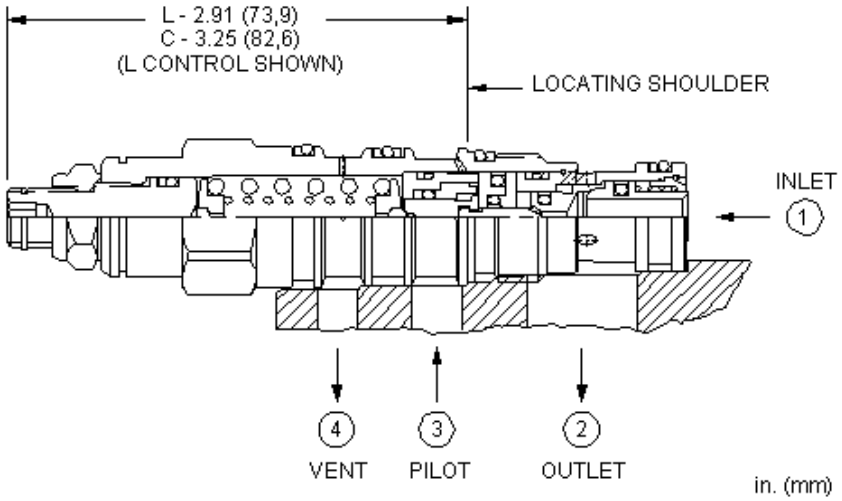
- **N** Buna-N
- **V** Viton



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

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

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

SEAL MATERIAL (N)

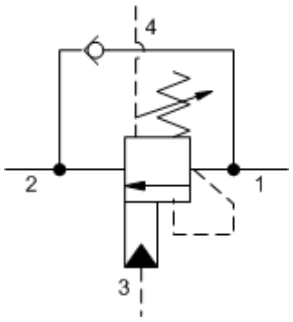
N Buna-N

V Viton

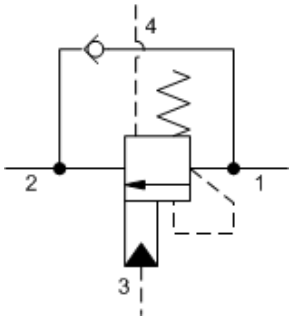
MATERIAL/COATING

Standard Material/Coating

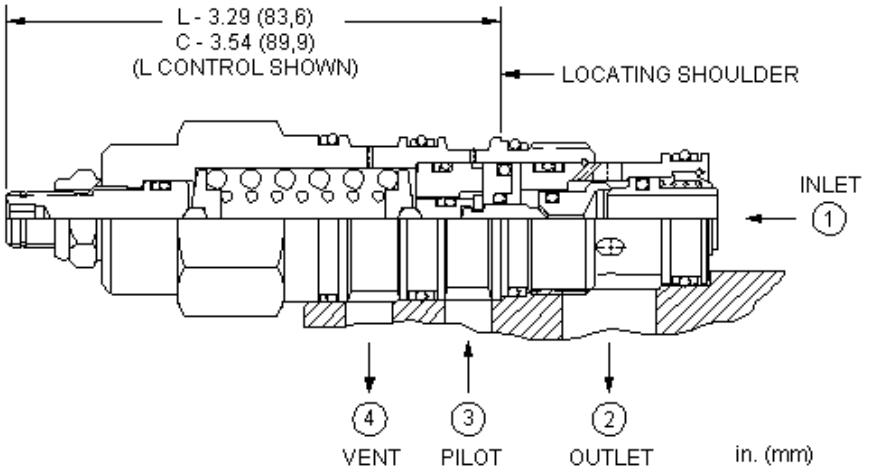
/AP Stainless Steel, Passivated



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

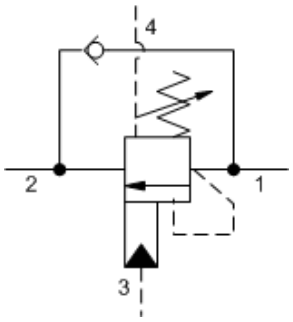
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

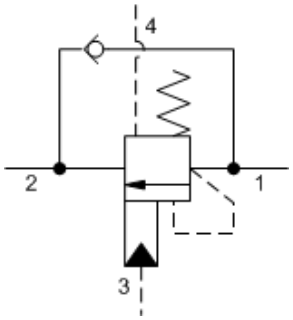
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

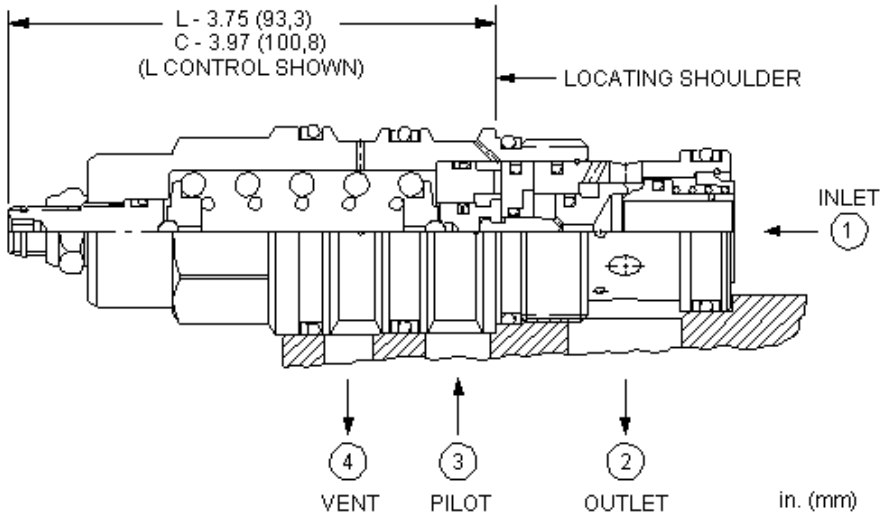
- Standard Material/Coating
- **/LH** Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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 (L)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

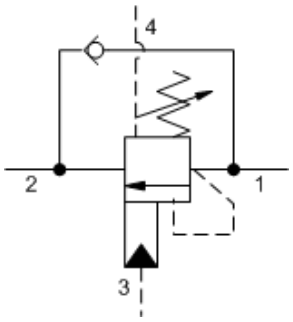
H 1000 - 4000 psi (70 - 280 bar), 3000 psi

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

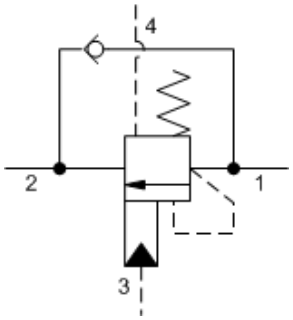
SEAL MATERIAL (N)

N Buna-N

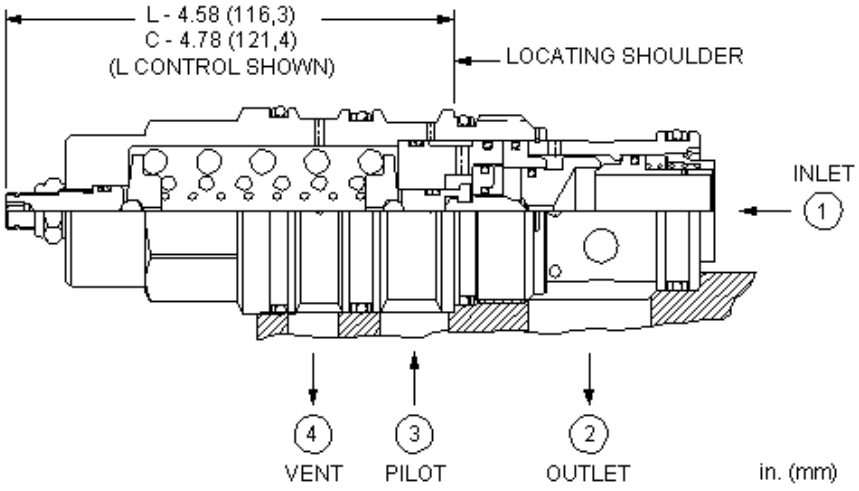
V Viton



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

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

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

SEAL MATERIAL (N)

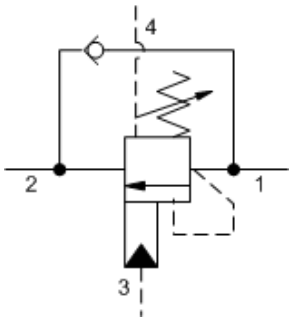
N Buna-N

V Viton

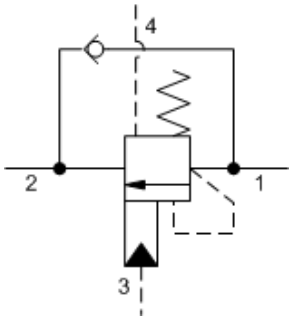
MATERIAL/COATING

Standard Material/Coating

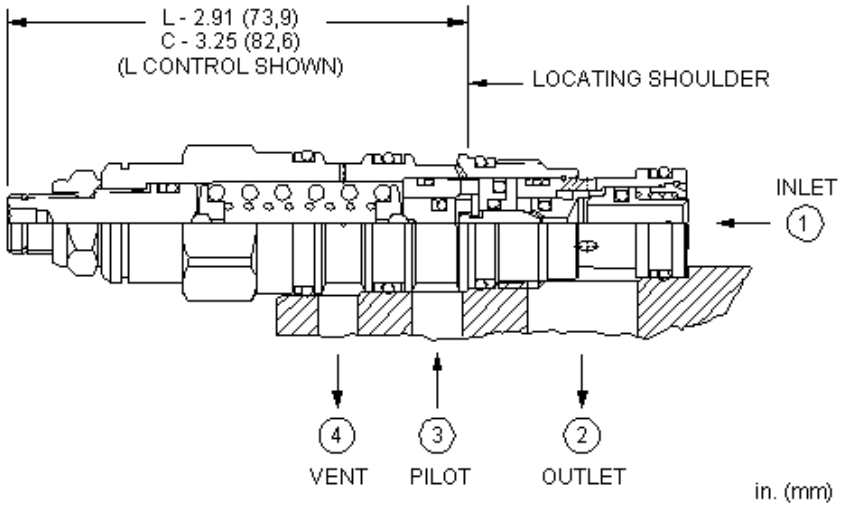
/LH Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

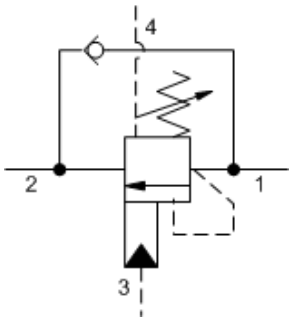
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

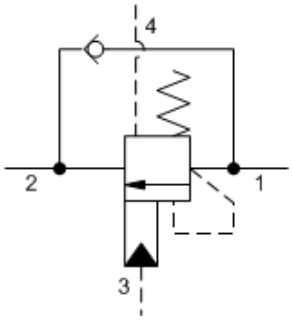
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

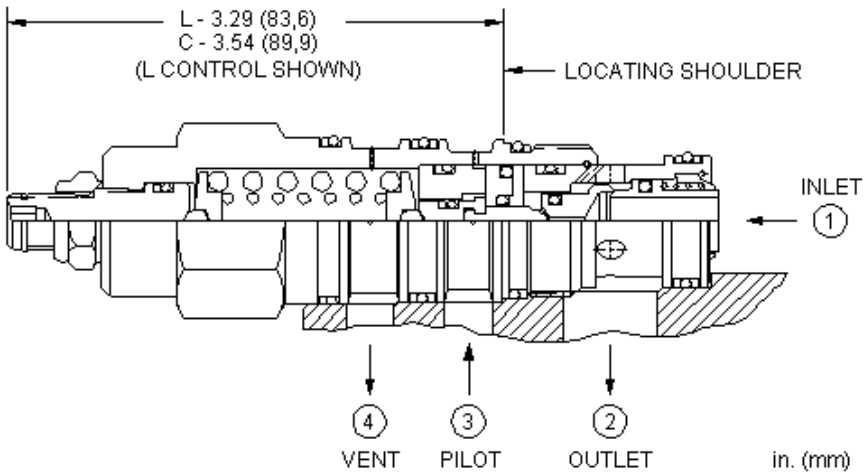
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

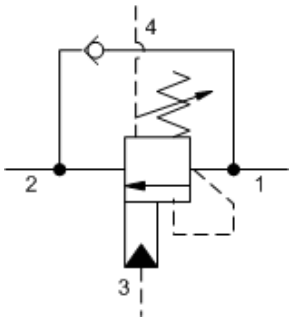
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

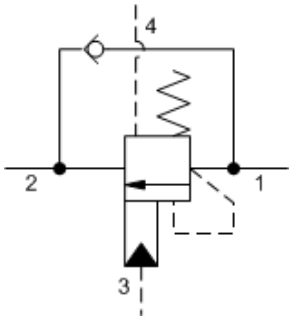
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

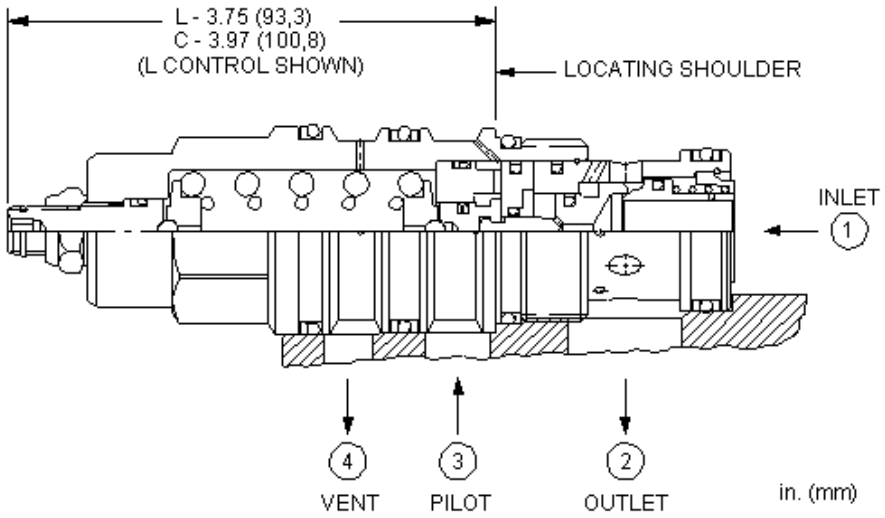
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

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

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

SEAL MATERIAL (N)

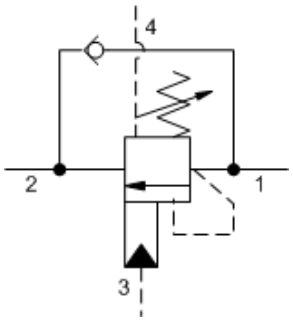
N Buna-N

V Viton

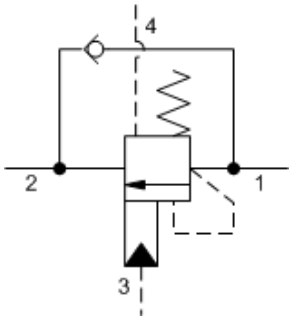
MATERIAL/COATING

Standard Material/Coating

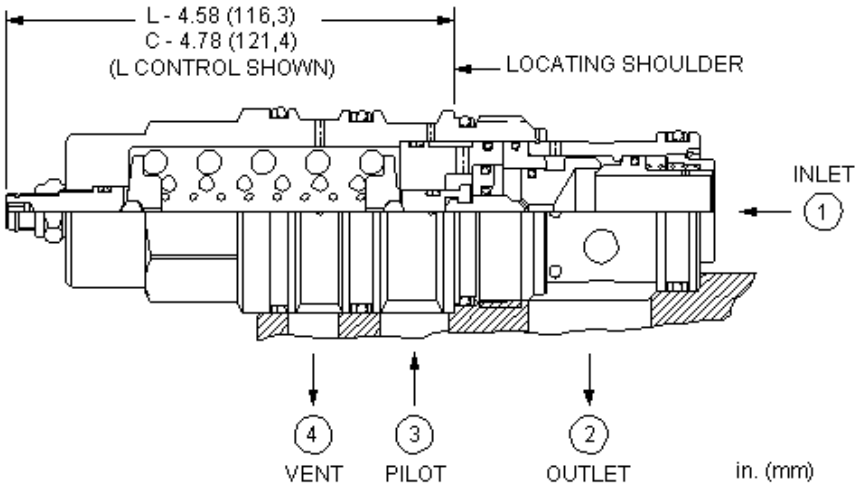
/AP Stainless Steel, Passivated



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

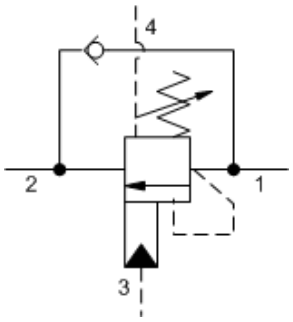
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

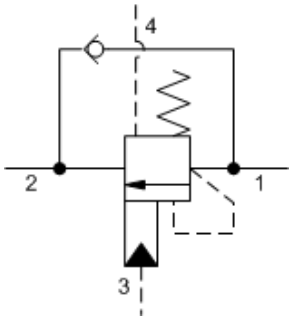
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

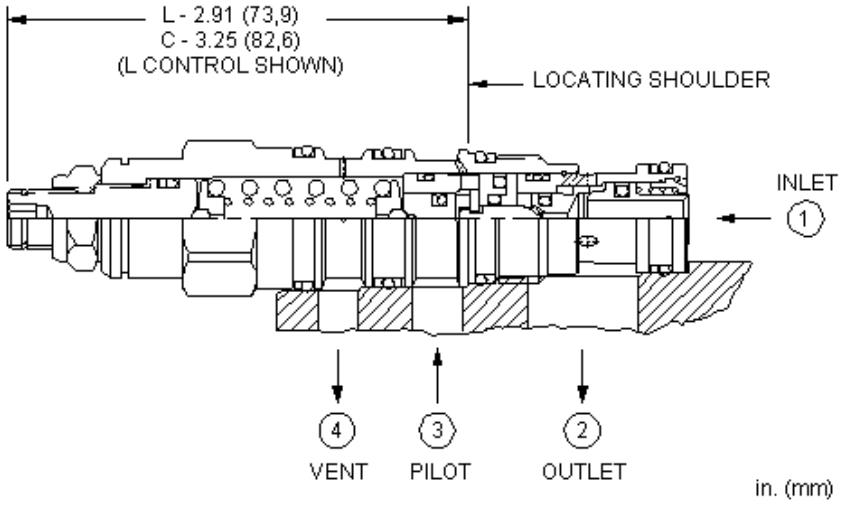
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

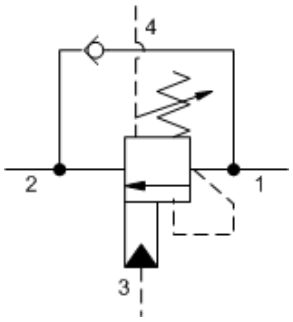
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

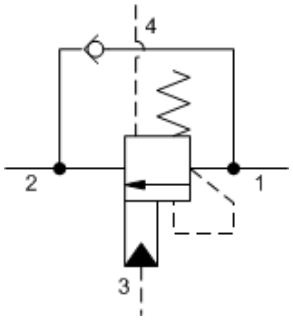
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

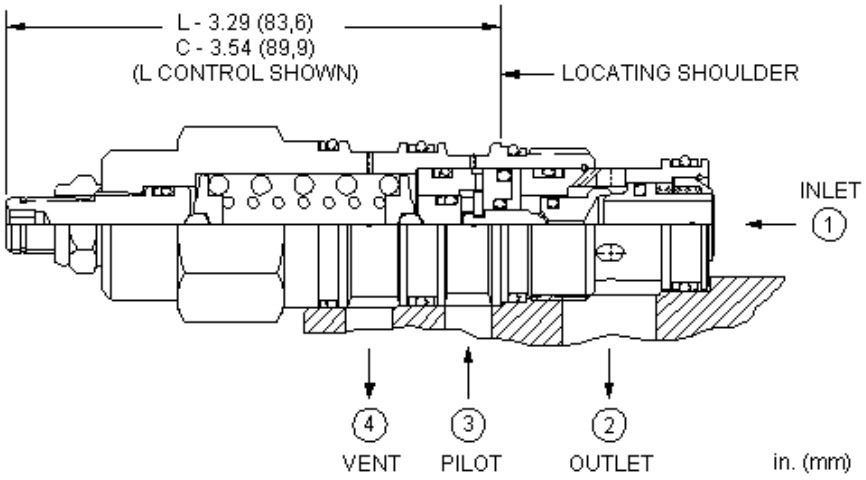
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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: CWEALHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

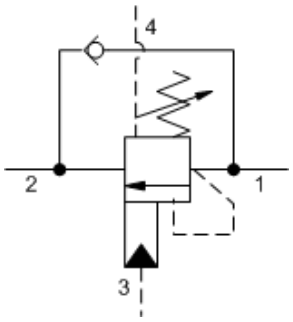
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

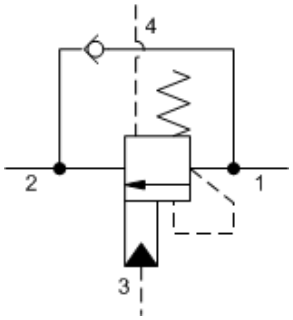
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

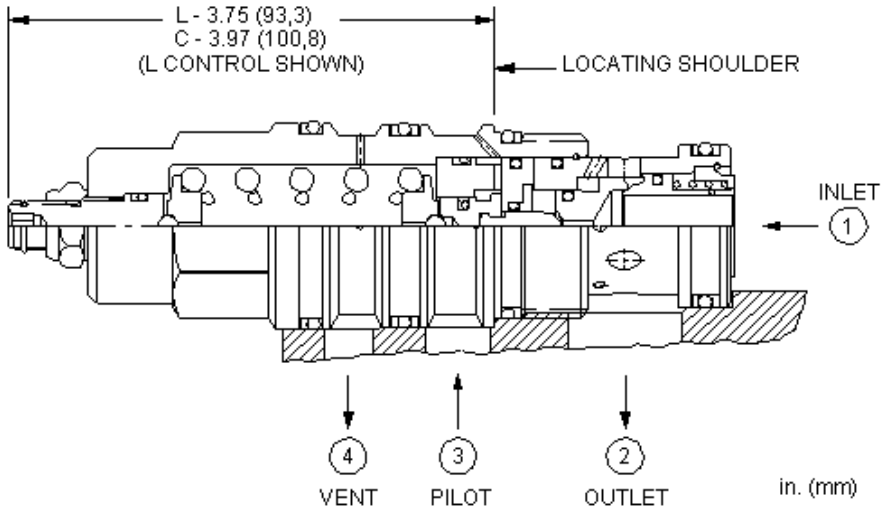
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

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

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

SEAL MATERIAL (N)

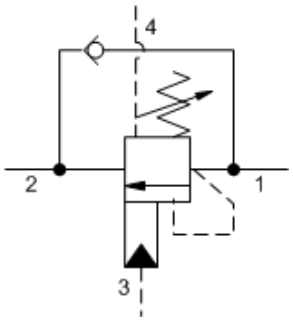
N Buna-N

V Viton

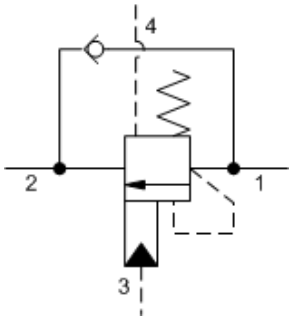
MATERIAL/COATING

Standard Material/Coating

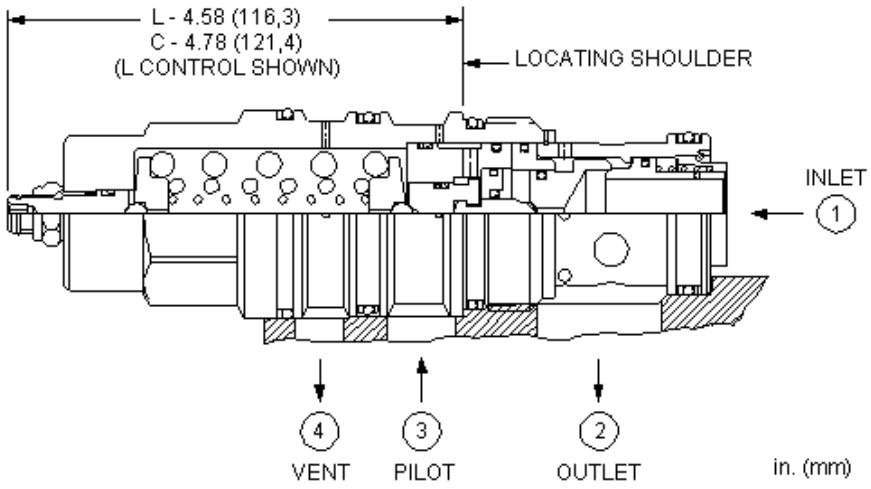
/AP Stainless Steel, Passivated



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

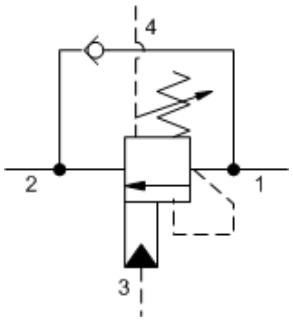
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL (N)

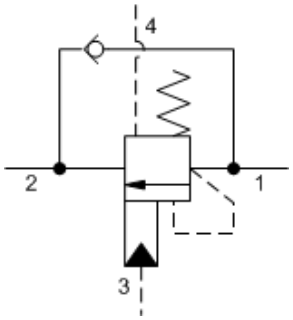
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

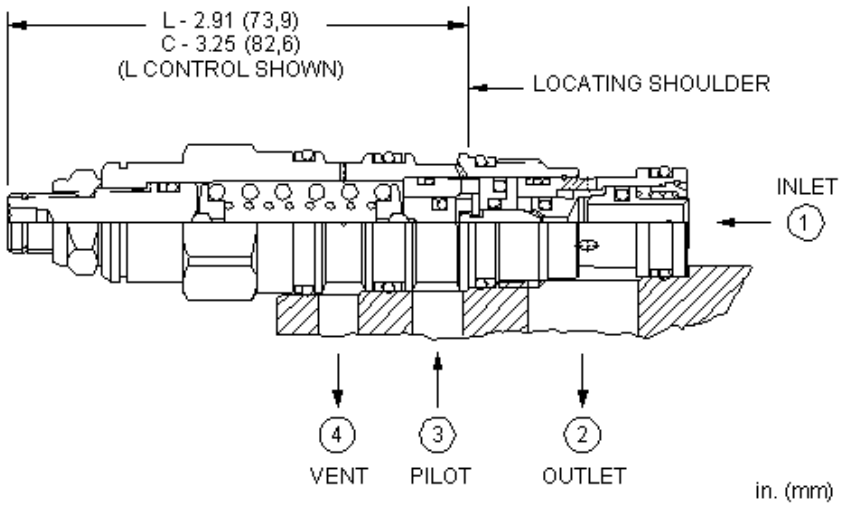
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

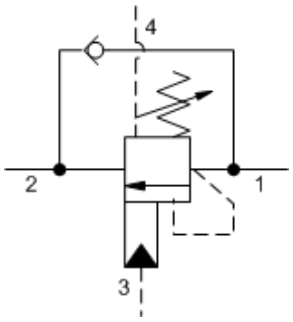
TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

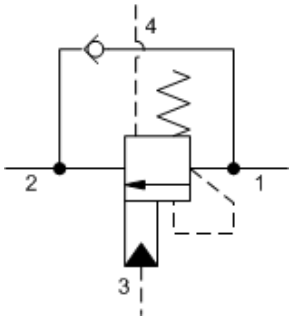
CONFIGURATION OPTIONS

Model Code Example: CWCGLGN

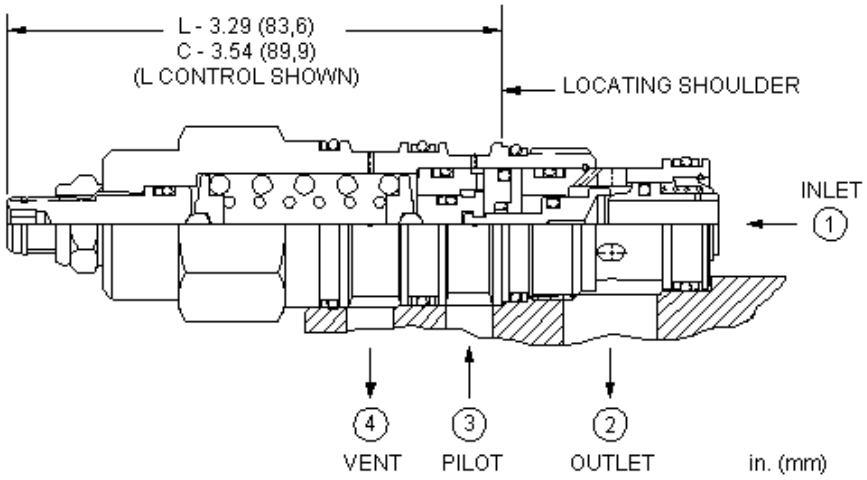
CONTROL (L)	FUNCTIONAL SETTING RANGE (G)	SEAL MATERIAL (N)	MATERIAL/COATING
L Standard Screw Adjustment	**G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting	**N** Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	**F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140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



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

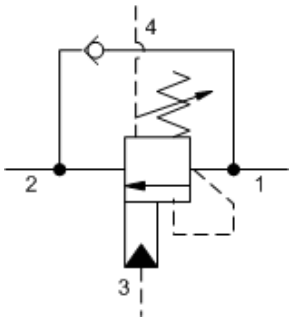
- **G** 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
- **F** 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

SEAL MATERIAL (N)

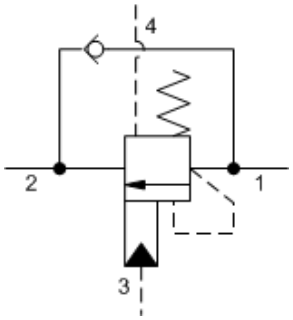
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

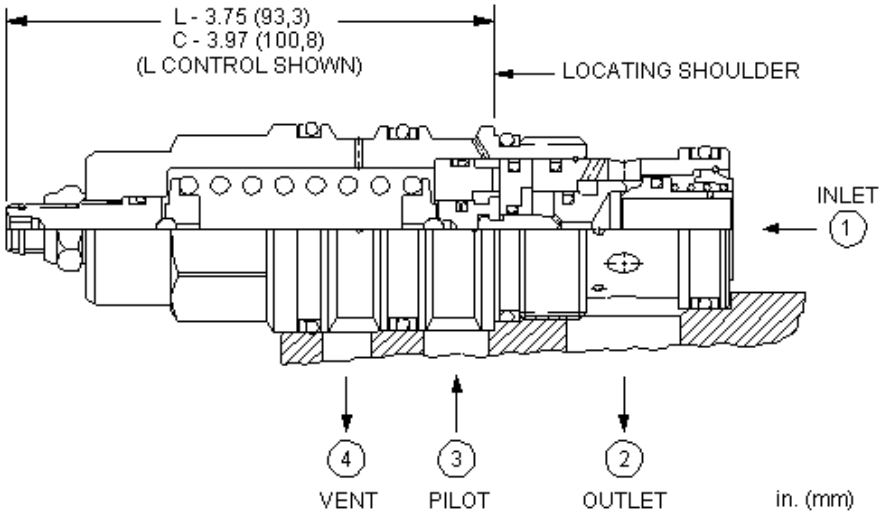
- Standard Material/Coating
- **/AP** Stainless Steel, Passivated
- **/LH** Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

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

SEAL MATERIAL (N)

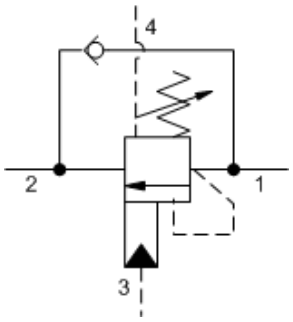
N Buna-N

V Viton

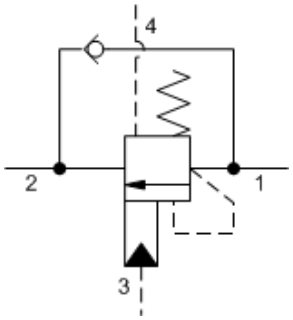
MATERIAL/COATING

Standard Material/Coating

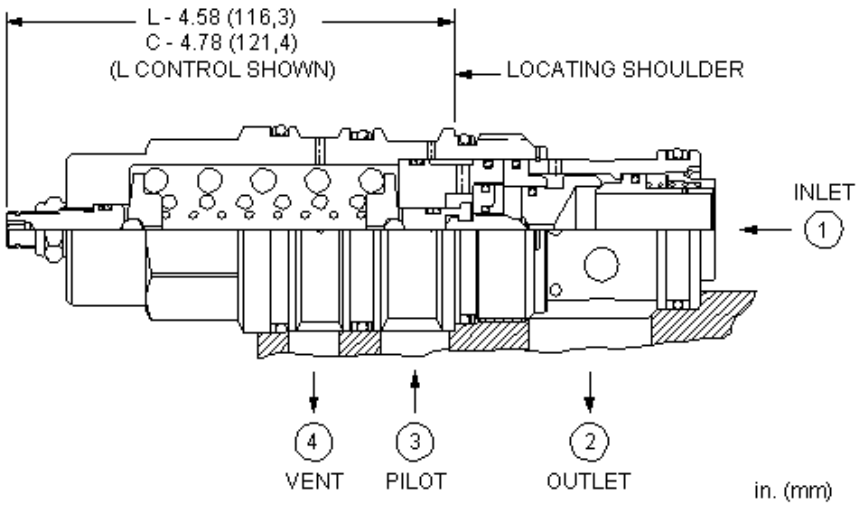
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel



4-Port Vented



4-Port Vented, Non-adjustable



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

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

TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (G)

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

SEAL MATERIAL (N)

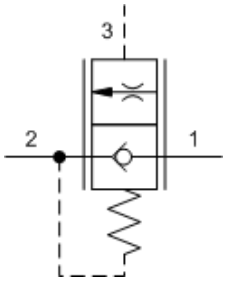
N Buna-N

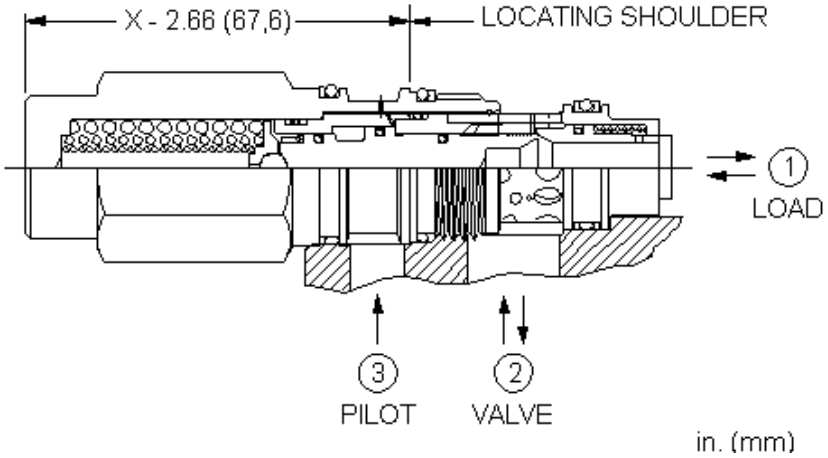
V Viton

MATERIAL/COATING

Standard Material/Coating

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





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.

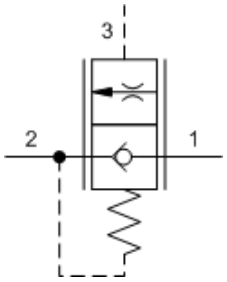
TECHNICAL DATA

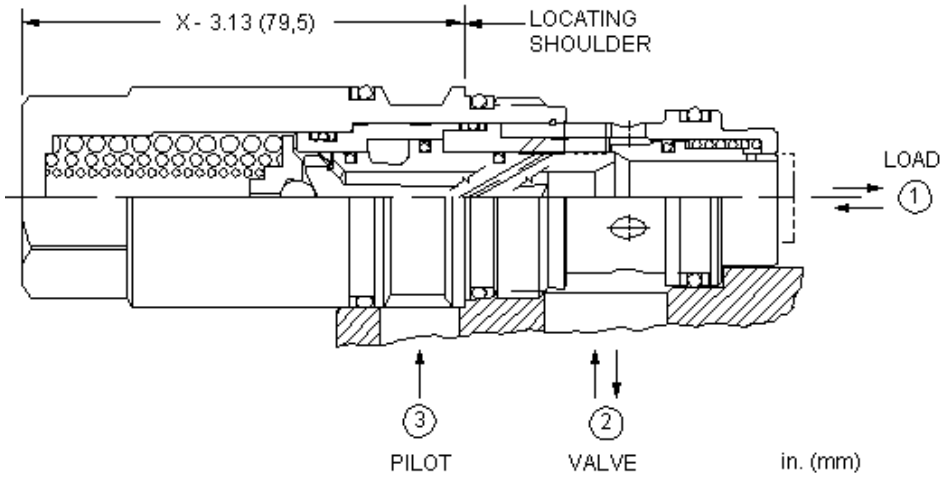
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	See Technical Features
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: MBEMXIN

CONTROL (X)	MINIMUM CONTROL PRESSURE (I)	SEAL MATERIAL (N)
X Not Adjustable	**I** 300 psi (20 bar)	**N** Buna-N
	E 75 psi (5 bar)	**V** Viton
	G 150 psi (10,5 bar)	
	H 200 psi (14 bar)	
	K 450 psi (33 bar)	
	M 525 psi (36,7 bar)	





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.

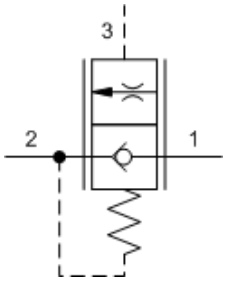
TECHNICAL DATA

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	See Technical Features
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: MBGMXIN

CONTROL (X)	MINIMUM CONTROL PRESSURE (I)	SEAL MATERIAL (N)	MATERIAL/COATING
X Not Adjustable	**I** 300 psi (20 bar)	**N** Buna-N	Standard Material/Coating
	E 75 psi (5 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	G 150 psi (10,5 bar)		
	K 450 psi (33 bar)		
	M 525 psi (36,7 bar)		



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.

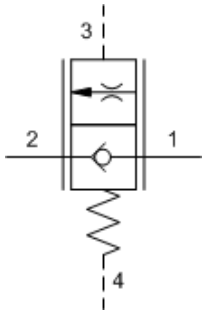
TECHNICAL DATA

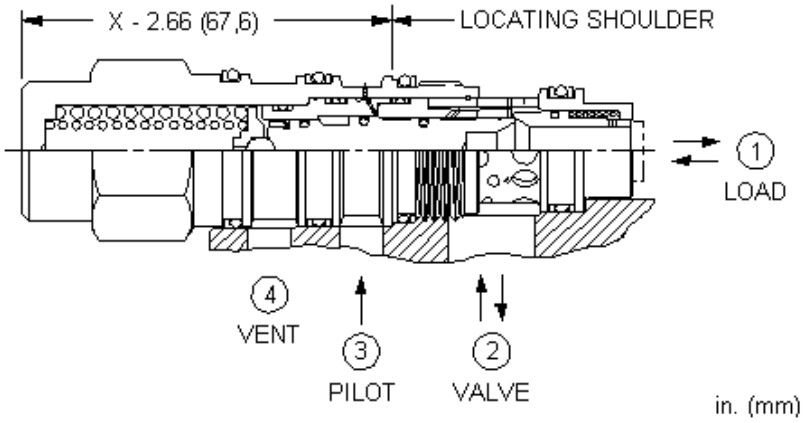
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	See Technical Features
Check Cracking Pressure	1,7 bar

CONFIGURATION OPTIONS

Model Code Example: MBIMXIN

CONTROL (X)	MINIMUM CONTROL PRESSURE (I)	SEAL MATERIAL (N)	MATERIAL/COATING
X Not Adjustable	**I** 300 psi (20 bar)	**N** Buna-N	Standard Material/Coating
	E 75 psi (5 bar)	**E** EPDM	**/AP** Stainless Steel, Passivated
	G 100 psi (7 bar)	**V** Viton	
	H 200 psi (14 bar)		
	K 450 psi (33 bar)		
	M 525 psi (36,7 bar)		





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).

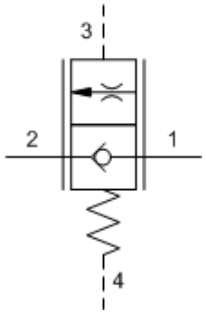
TECHNICAL DATA

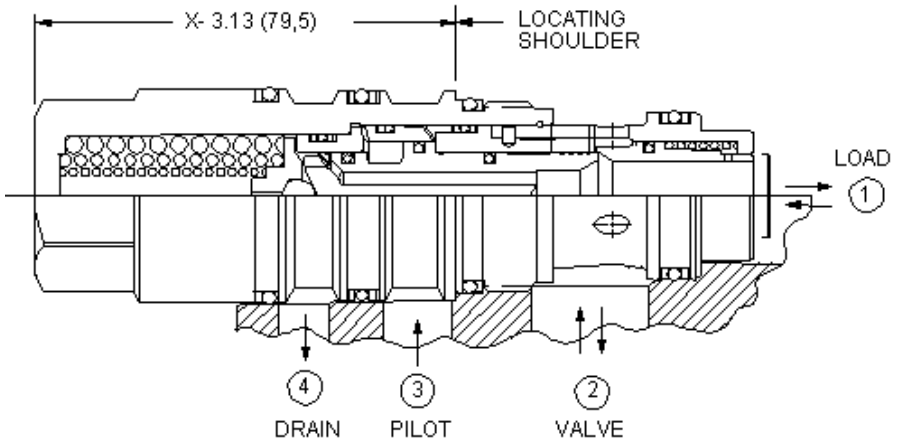
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	See Technical Features
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

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)	**N** Buna-N	Standard Material/Coating
	E 75 psi (5 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	G 150 psi (10,5 bar)		
	H 200 psi (14 bar)		
	K 450 psi (33 bar)		
	M 525 psi (36,7 bar)		





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).

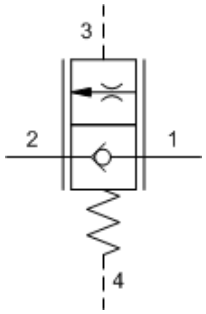
TECHNICAL DATA

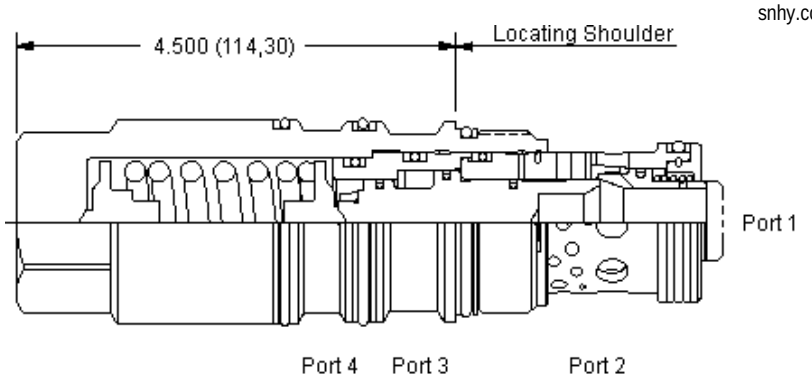
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	See Technical Features
Check Cracking Pressure	1,7 bar
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: MWGMXIN

CONTROL (X)	MINIMUM CONTROL PRESSURE (I)	SEAL MATERIAL (N)	MATERIAL/COATING
X Not Adjustable	**I** 300 psi (20 bar)	**N** Buna-N	Standard Material/Coating
	E 75 psi (5 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	G 150 psi (10,5 bar)		
	K 450 psi (33 bar)		
	M 525 psi (36,7 bar)		





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).

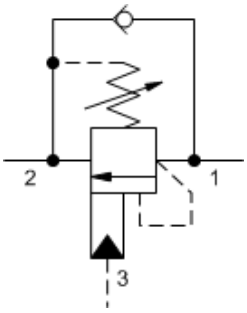
TECHNICAL DATA

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

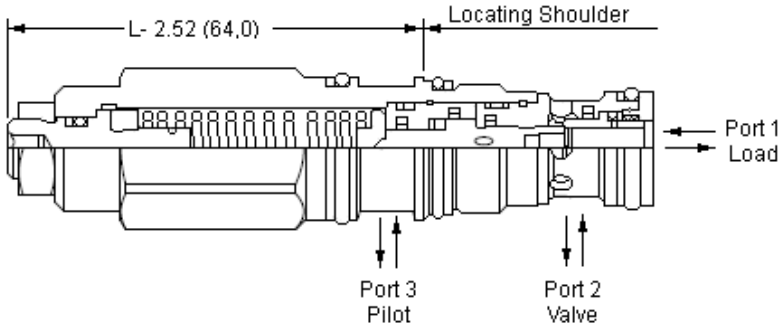
CONFIGURATION OPTIONS

Model Code Example: MWIMXIN

CONTROL (X)	MINIMUM CONTROL PRESSURE (I)	SEAL MATERIAL (N)	MATERIAL/COATING
X Not Adjustable	**I** 300 psi (20 bar)	**N** Buna-N	Standard Material/Coating
	E 75 psi (5 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	G 150 psi (10,5 bar)		
	H 200 psi (14 bar)		
	K 450 psi (33 bar)		
	M 525 psi (36,7 bar)		



3-Port Non-vented



in (mm)

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

Pilot Ratio	1.5:1
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.
Check Cracking Pressure	1,7 bar
Adjustment - Number of Counterclockwise Turns to Increase Setting	6.5
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: MBDBLHN

CONTROL (L)

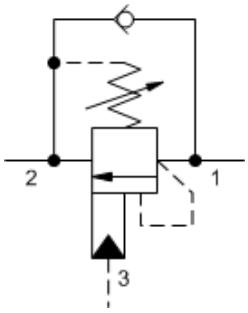
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

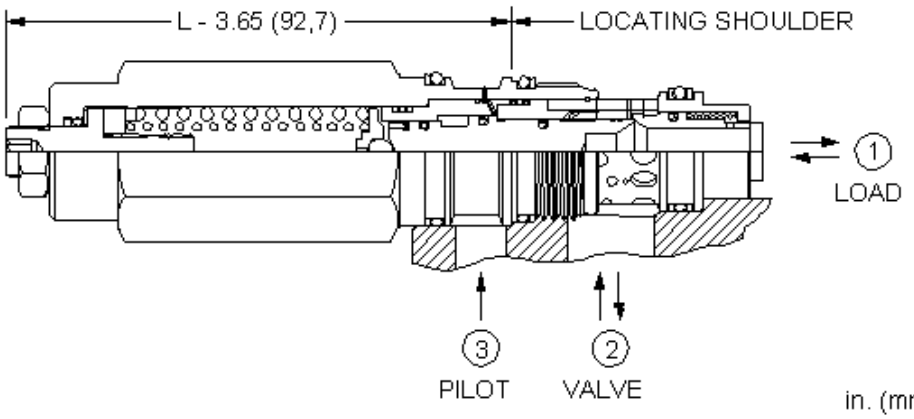
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



3-Port Non-vented



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

TECHNICAL DATA

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MBEBLHN

CONTROL (L)

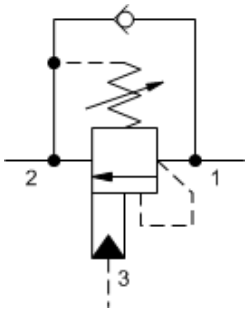
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

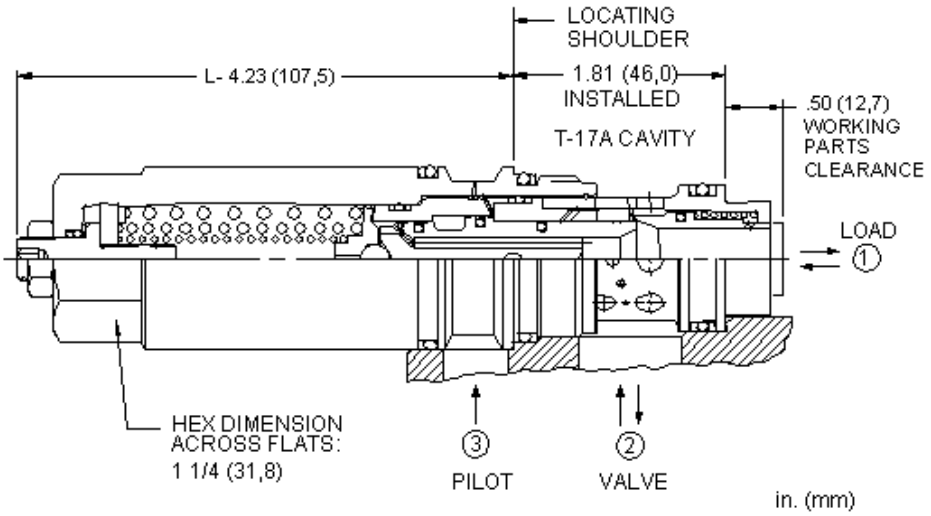
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



3-Port Non-vented



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

TECHNICAL DATA

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MBGBLHN

CONTROL (L)

L Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

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

SEAL MATERIAL (N)

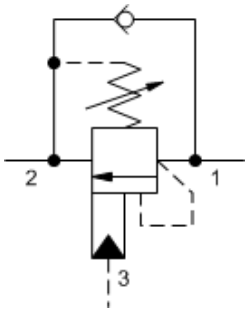
N Buna-N

V Viton

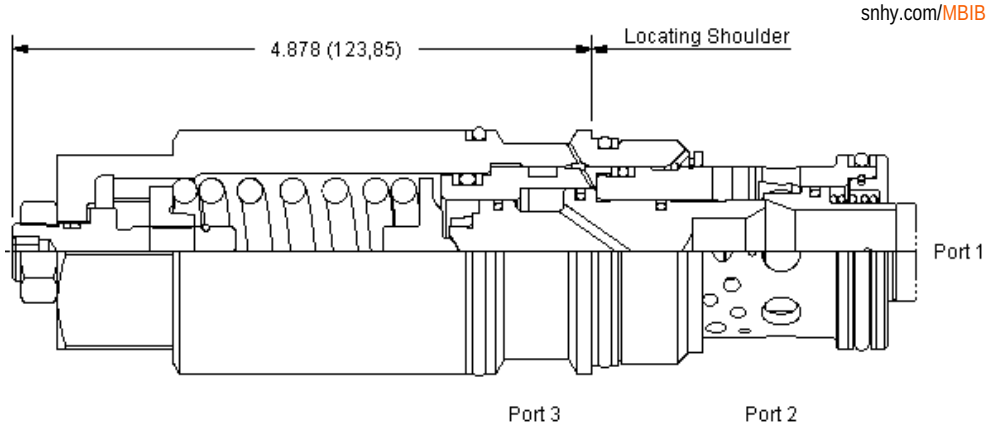
MATERIAL/COATING

Standard Material/Coating

/AP Stainless Steel, Passivated



3-Port Non-vented



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

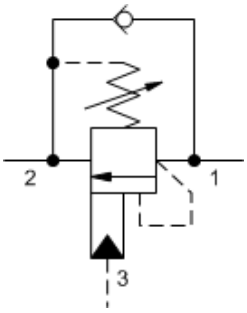
TECHNICAL DATA

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	7
Reseat	>85% 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

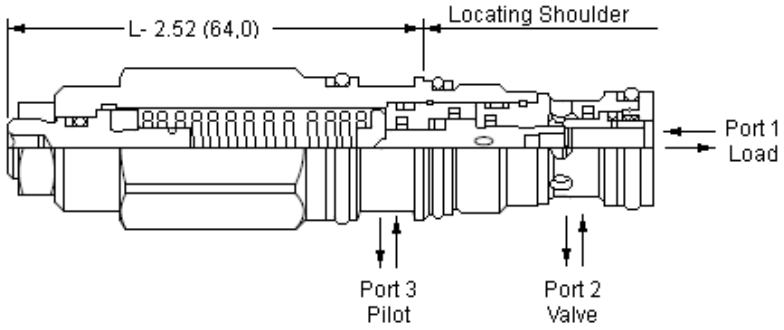
CONFIGURATION OPTIONS

Model Code Example: MBIBLHN

CONTROL (L)	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	Standard Material/Coating
	J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting	**V** Viton	**/AP** Stainless Steel, Passivated



3-Port Non-vented



in (mm)

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

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	6.5
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: MBDALHN

CONTROL (L)

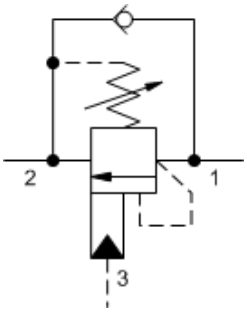
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

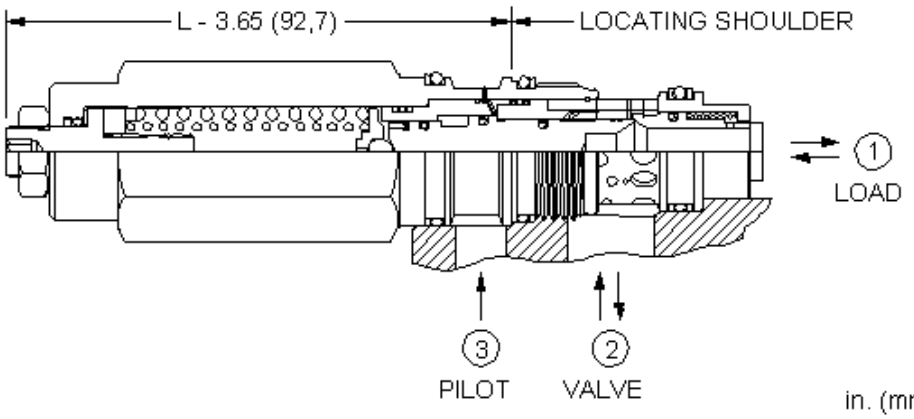
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



3-Port Non-vented



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

TECHNICAL DATA

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MBEALHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

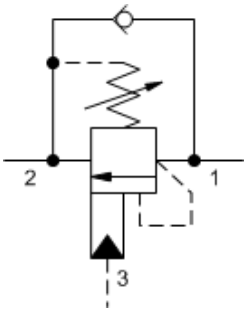
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

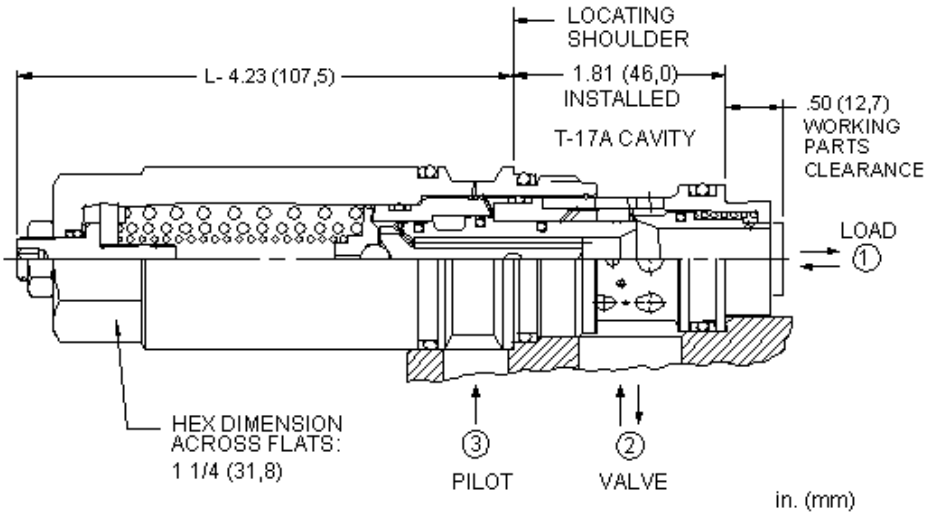
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

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



3-Port Non-vented



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

TECHNICAL DATA

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MBGALHN

CONTROL (L)

L Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

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

SEAL MATERIAL (N)

N Buna-N

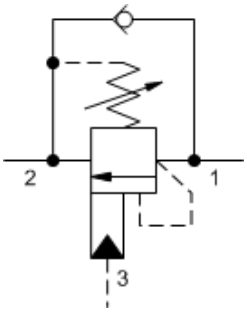
E EPDM

V Viton

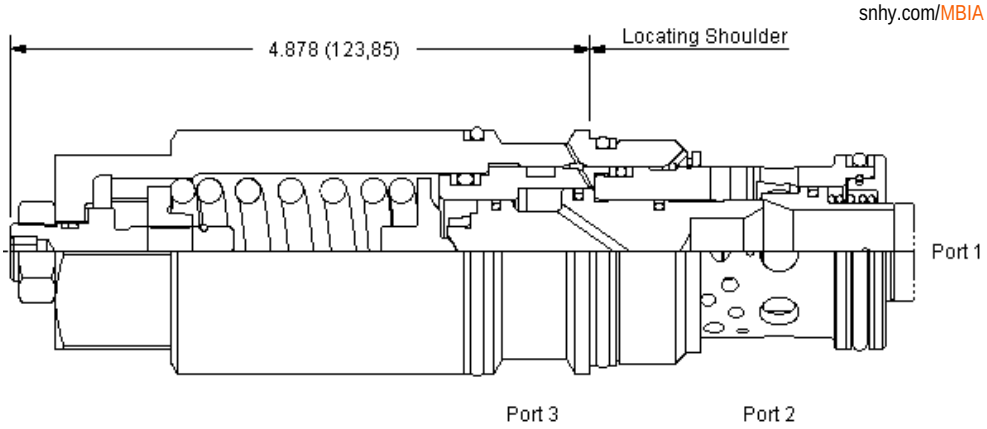
MATERIAL/COATING

Standard Material/Coating

/AP Stainless Steel, Passivated



3-Port Non-vented



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

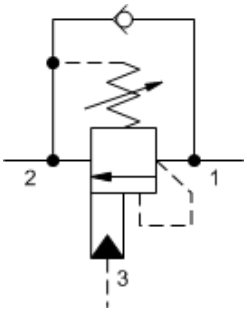
TECHNICAL DATA

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	7
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

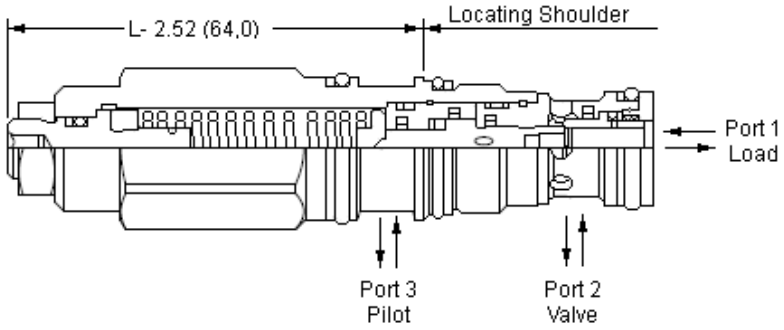
CONFIGURATION OPTIONS

Model Code Example: MBIALHN

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	Standard Material/Coating
	J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting	**V** Viton	**/AP** Stainless Steel, Passivated



3-Port Non-vented



in (mm)

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

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.
Check Cracking Pressure	1,7 bar
Adjustment - Number of Counterclockwise Turns to Increase Setting	6.5
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: MBDGLHN

CONTROL (L)

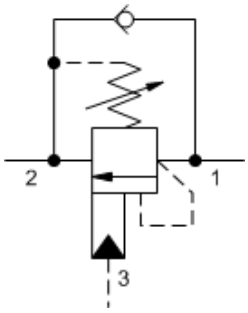
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

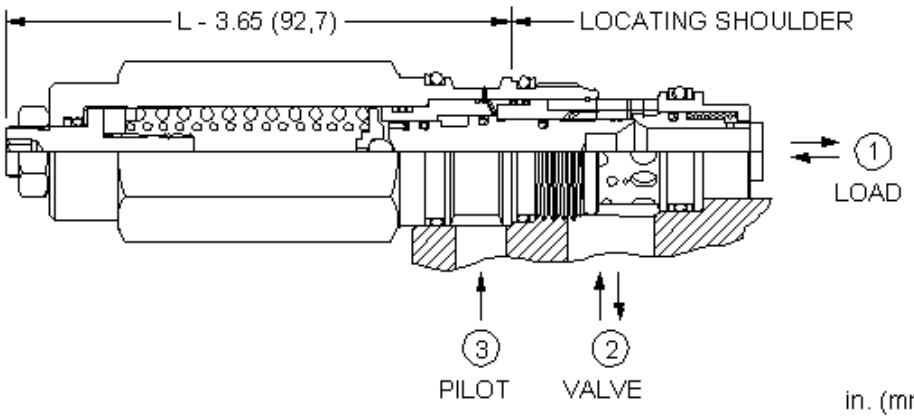
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



3-Port Non-vented



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

TECHNICAL DATA

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MBEGLHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

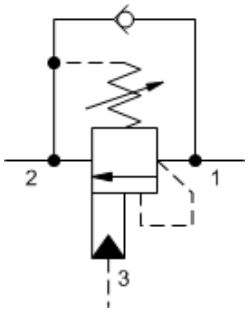
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

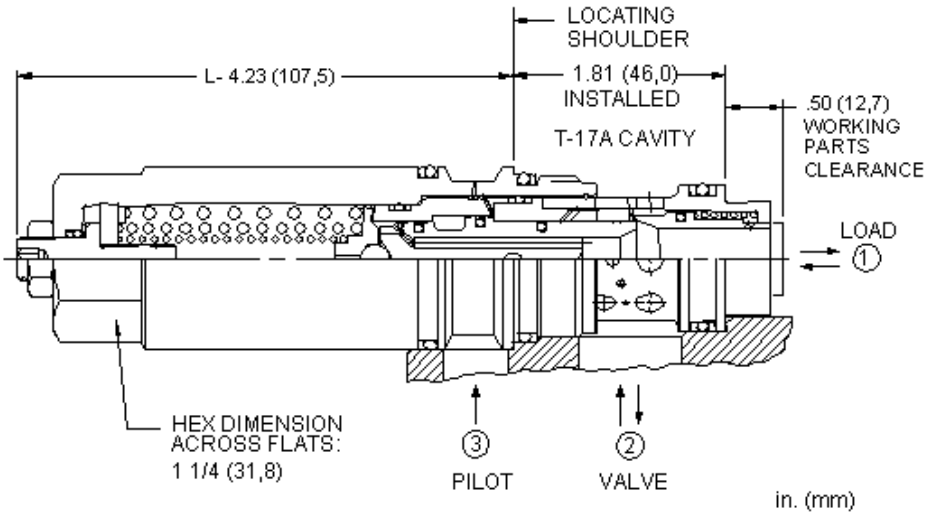
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

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



3-Port Non-vented



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

TECHNICAL DATA

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MBGGLHN

CONTROL (L)

- **L** Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

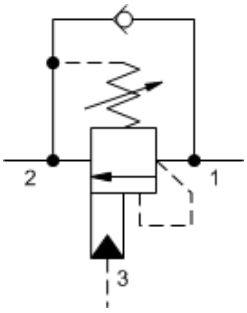
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

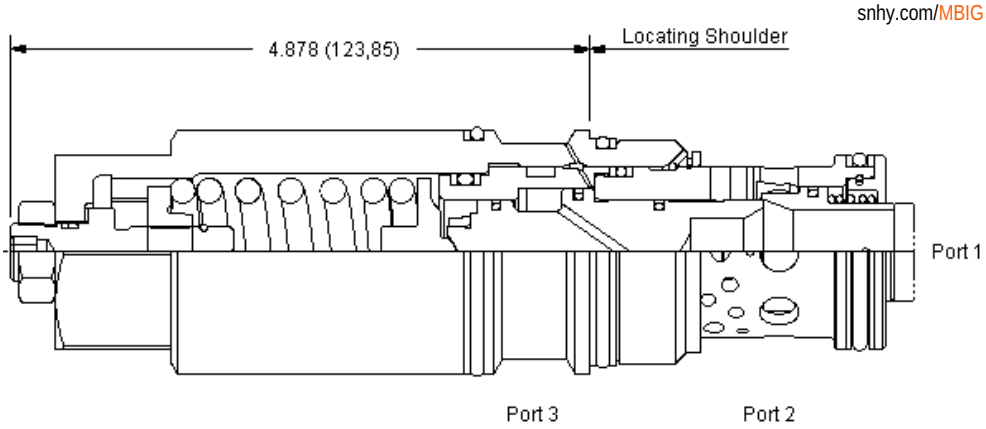
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

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



3-Port Non-vented



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

TECHNICAL DATA

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	7
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: MBIGLHN

CONTROL (L)

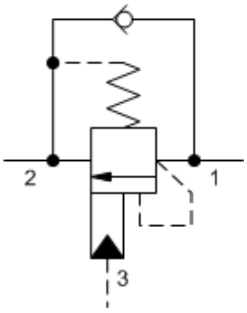
- **L** Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

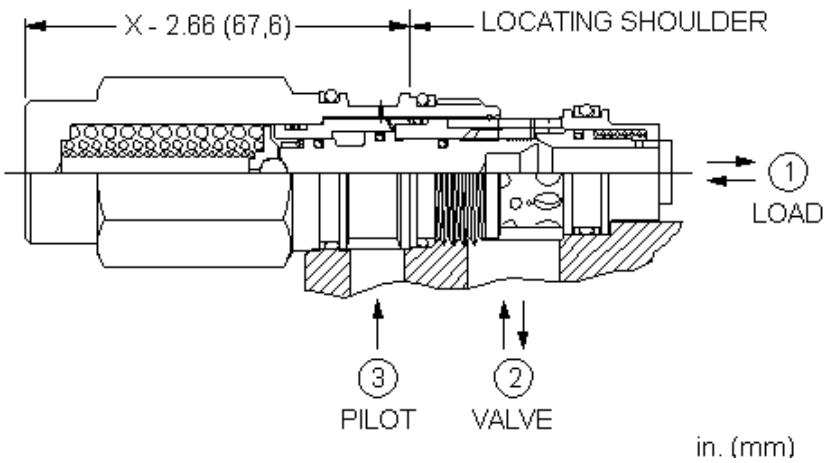
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



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

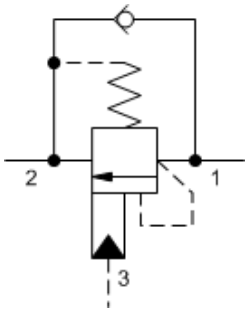
Pilot Ratio	1.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

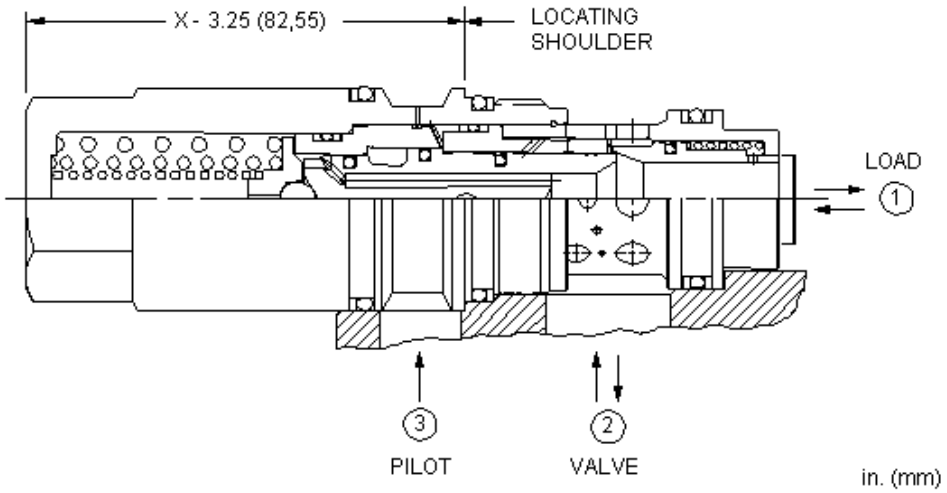
Model Code Example: MBEBXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



3-Port Non-vented, Fixed Setting



in. (mm)

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

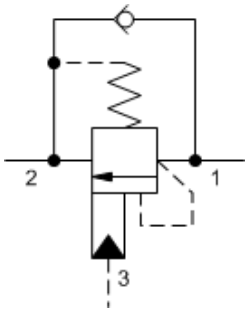
Pilot Ratio	1.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

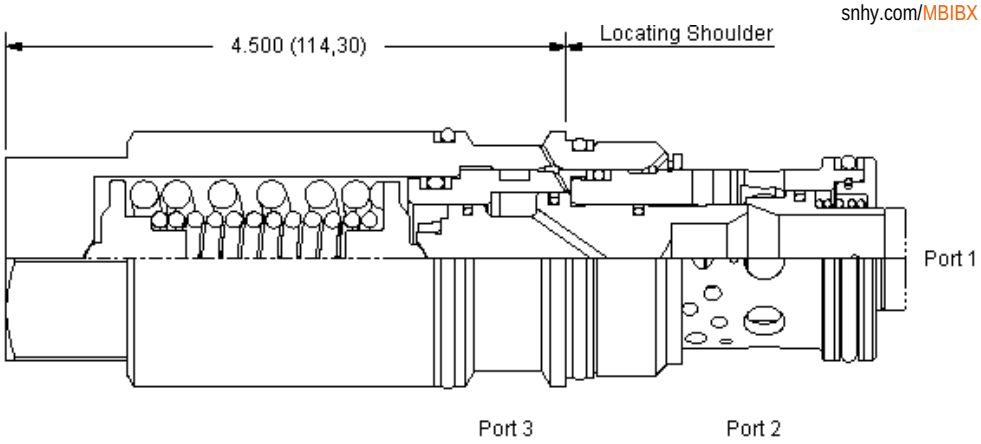
Model Code Example: MBGBXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

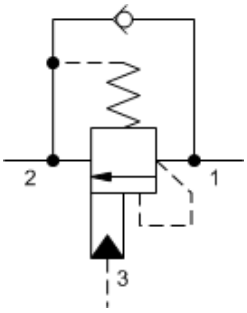
Pilot Ratio	1.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

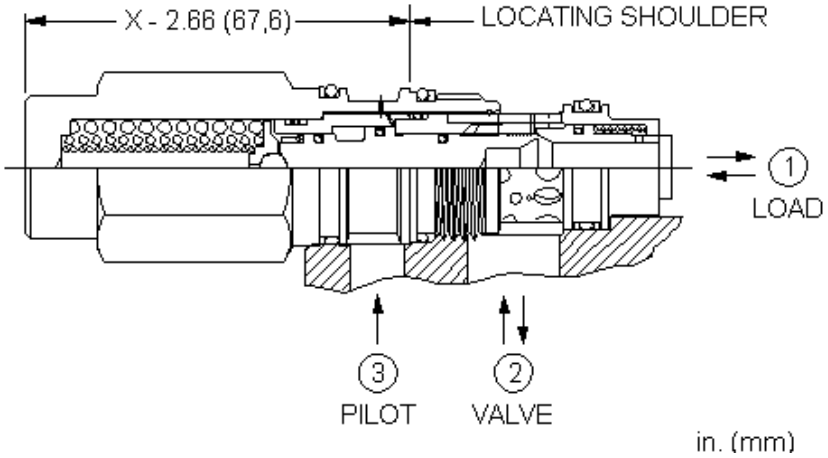
Model Code Example: MBIBXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

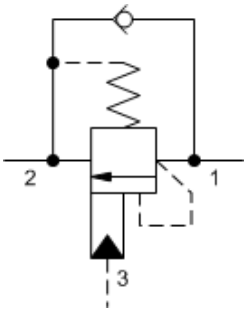
Pilot Ratio	3:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

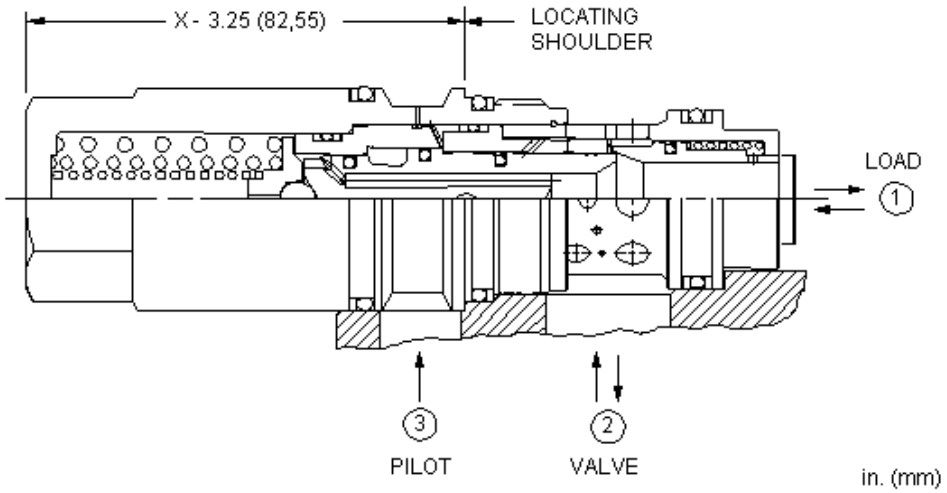
Model Code Example: MBEAXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



3-Port Non-vented, Fixed Setting



in. (mm)

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

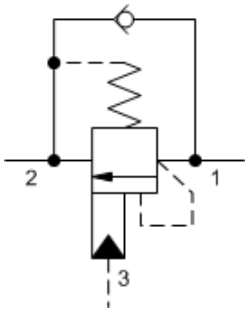
Pilot Ratio	3:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

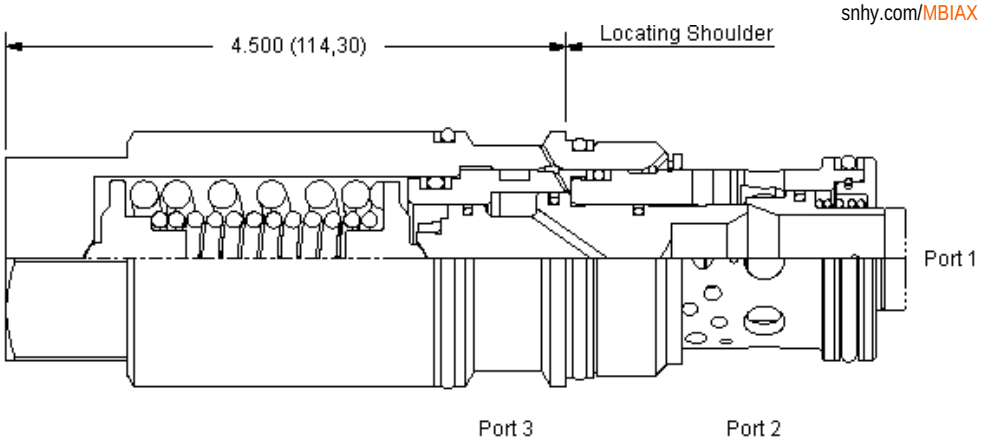
Model Code Example: MBGAXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
E EPDM	
V Viton	



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

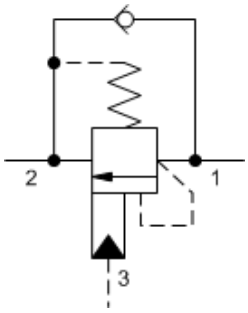
Pilot Ratio	3:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

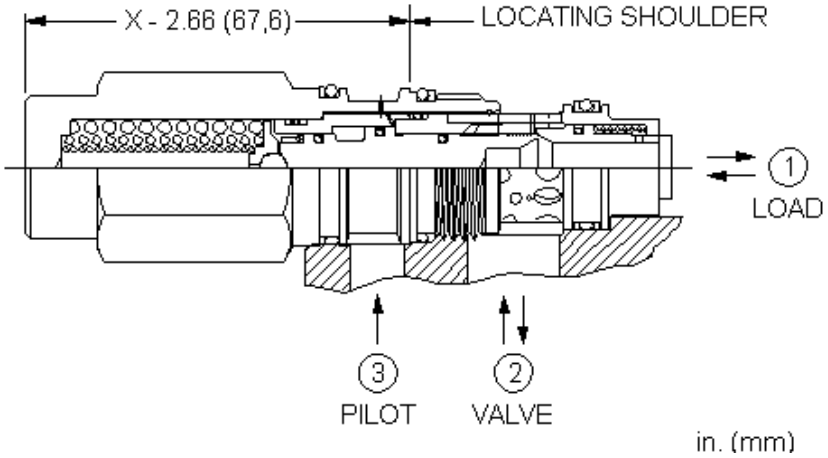
Model Code Example: MBIAXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

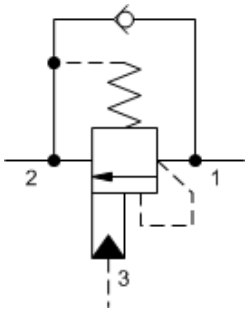
Pilot Ratio	4.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

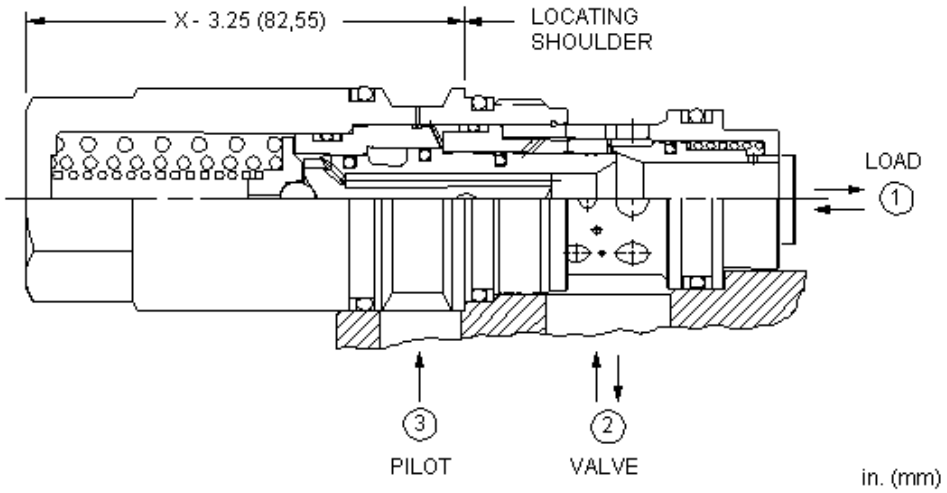
Model Code Example: MBEGXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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.

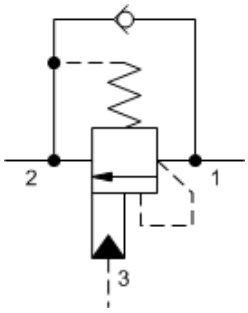
TECHNICAL DATA

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
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

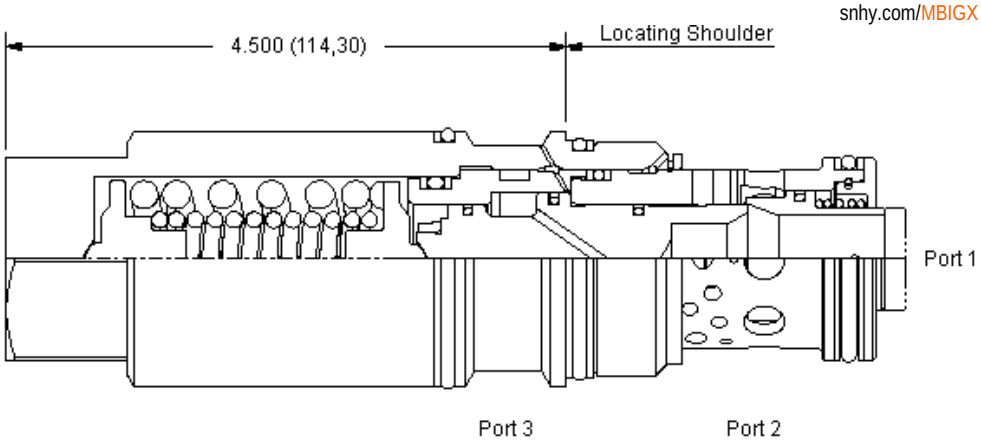
CONFIGURATION OPTIONS

Model Code Example: MBGGXLN

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



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

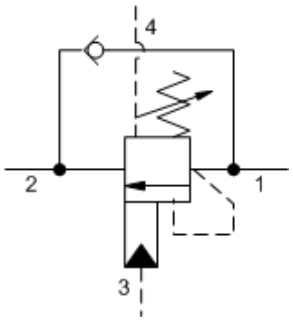
Pilot Ratio	4.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

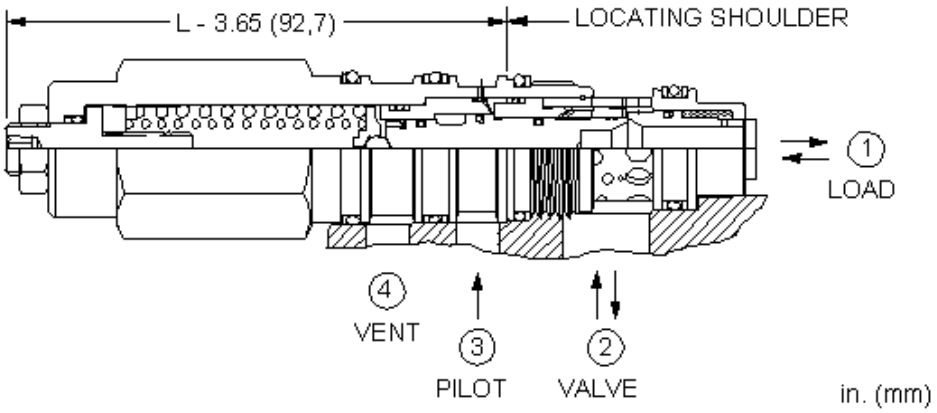
Model Code Example: MBIGXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



4-Port Vented



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

TECHNICAL DATA

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MWEBLHN

CONTROL (L)

L Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

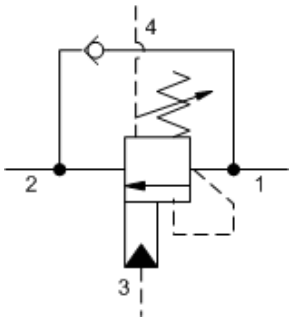
H 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

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

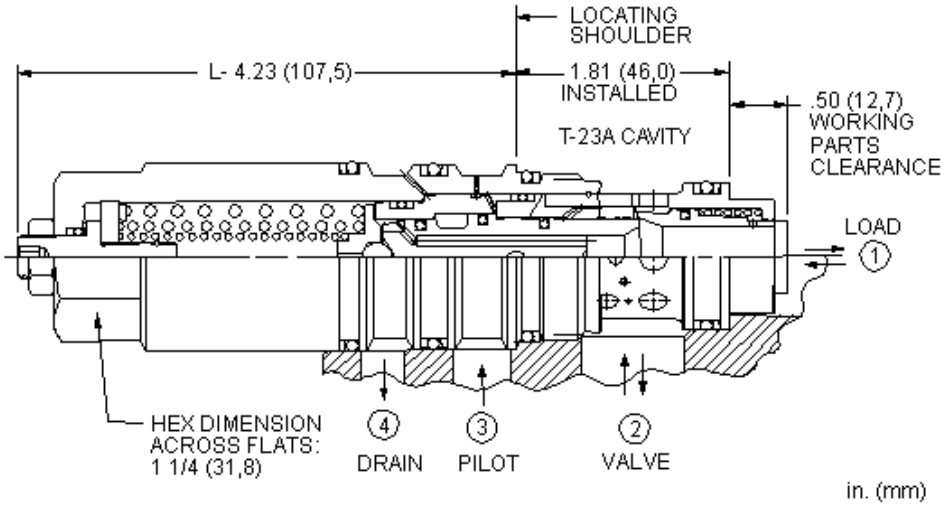
SEAL MATERIAL (N)

N Buna-N

V Viton



4-Port Vented



in. (mm)

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

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MWGBLHN

CONTROL (L)

L Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

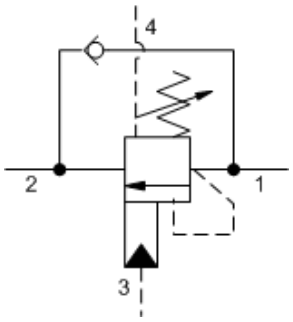
H 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

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

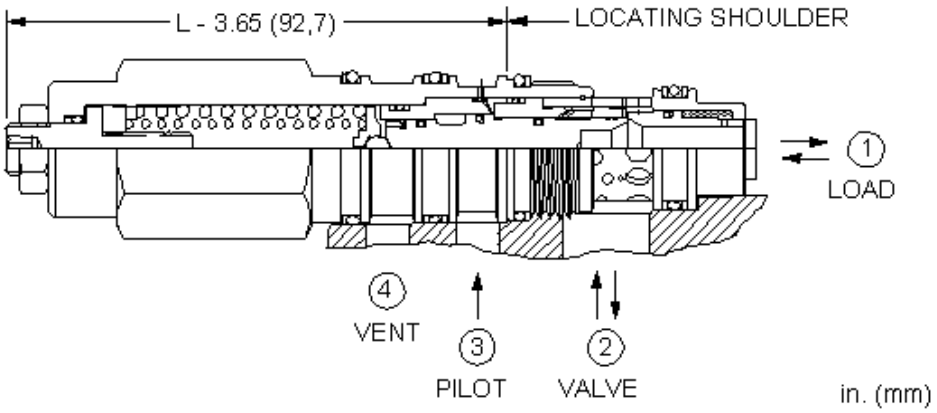
SEAL MATERIAL (N)

N Buna-N

V Viton



4-Port Vented



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

TECHNICAL DATA

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
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: MWEALHN

CONTROL (L)

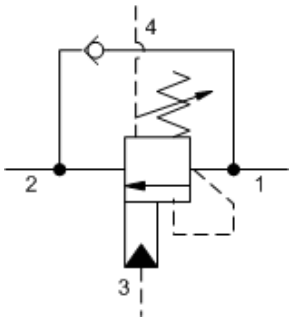
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

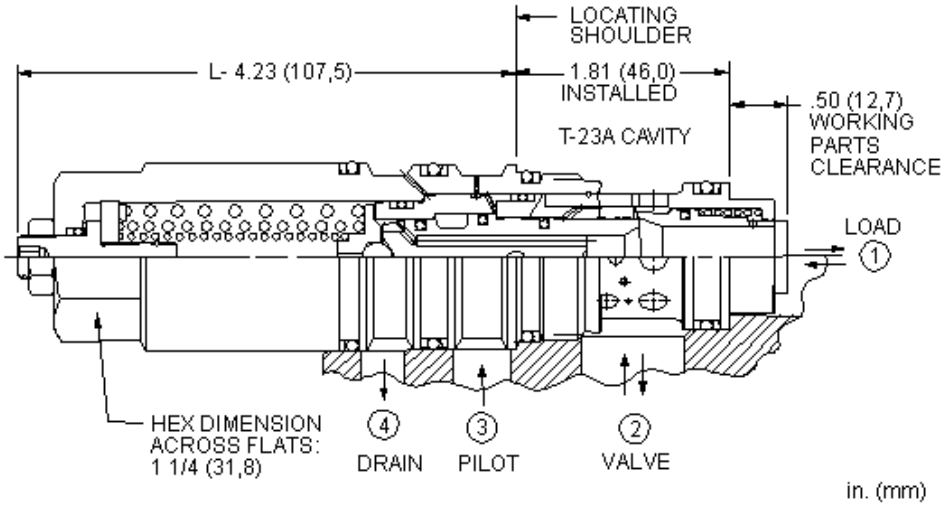
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



4-Port Vented



in. (mm)

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

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	8.5
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: MWGALHN

CONTROL (L)

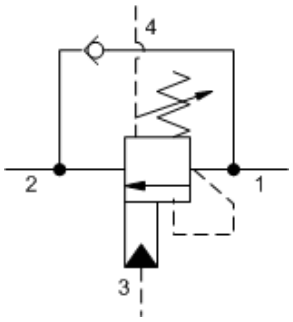
- **L** Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

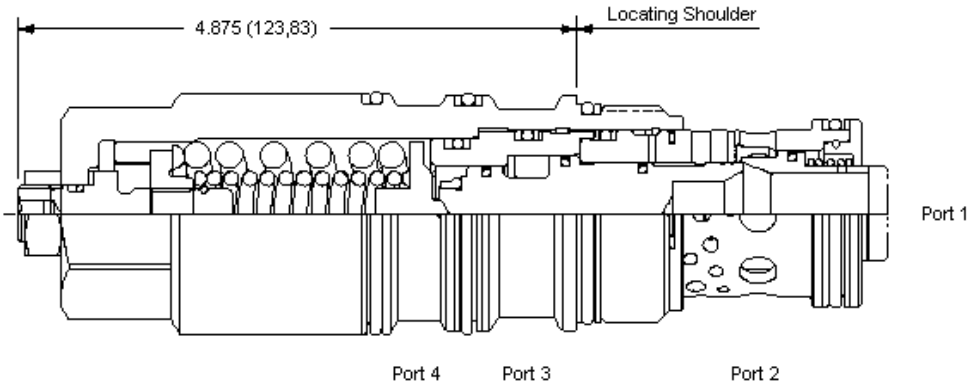
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



4-Port Vented



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

TECHNICAL DATA

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	8.5
Reseat	>85% 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: MWIALHN

CONTROL (L)

L Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

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

SEAL MATERIAL (N)

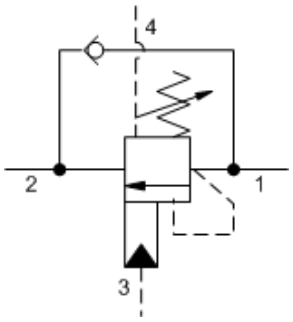
N Buna-N

V Viton

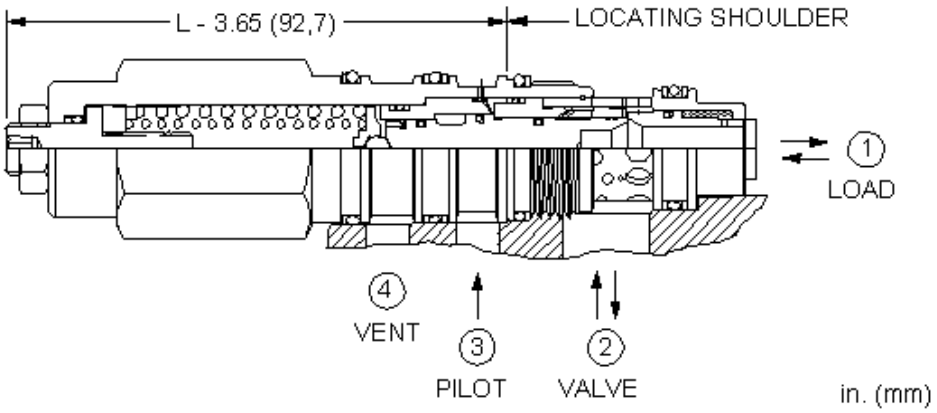
MATERIAL/COATING

Standard Material/Coating

/AP Stainless Steel, Passivated



4-Port Vented



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

TECHNICAL DATA

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	8.5
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: MWEGLHN

CONTROL (L)

L Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

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

SEAL MATERIAL (N)

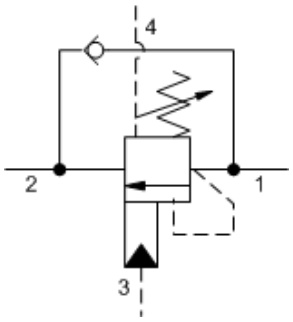
N Buna-N

V Viton

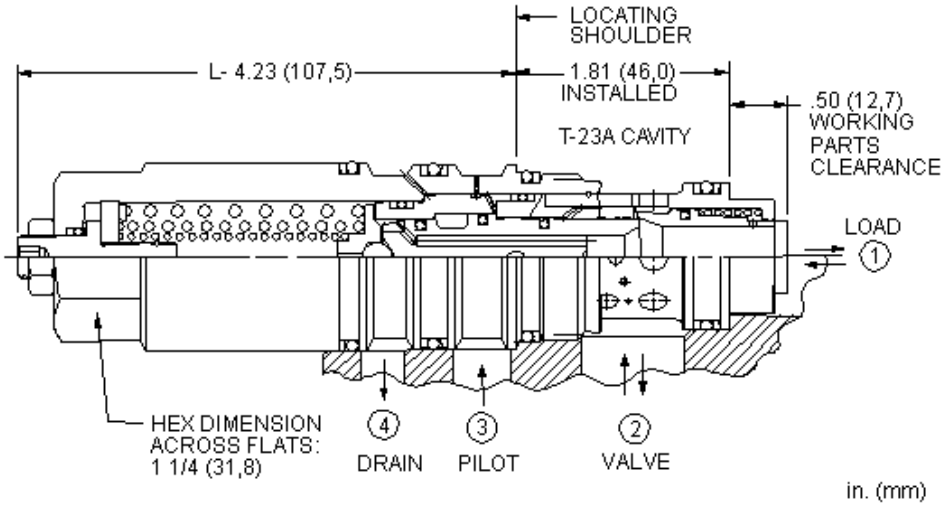
MATERIAL/COATING

Standard Material/Coating

/AP Stainless Steel, Passivated



4-Port Vented



in. (mm)

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

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	9
Reseat	>85% 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)

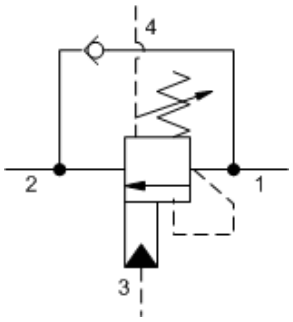
- **L** Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

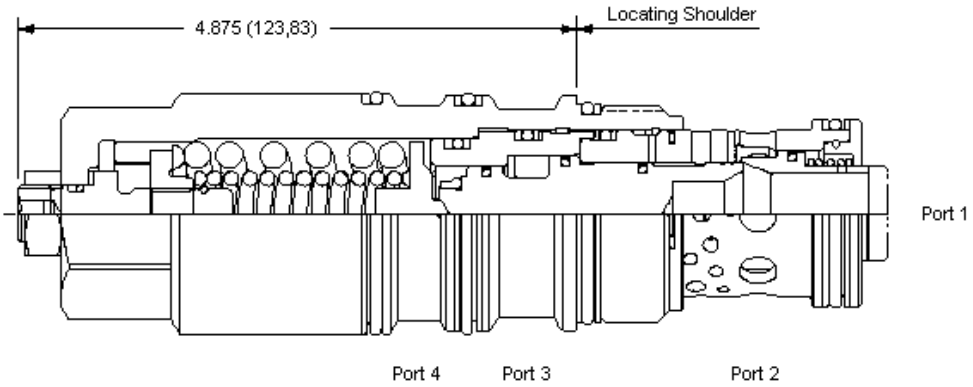
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



4-Port Vented



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

TECHNICAL DATA

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	8.5
Reseat	>85% 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

CONTROL (L)

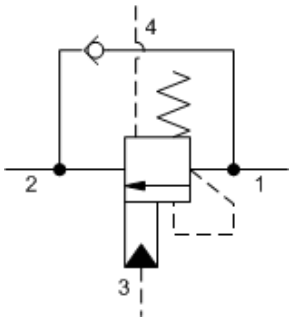
- **L** Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

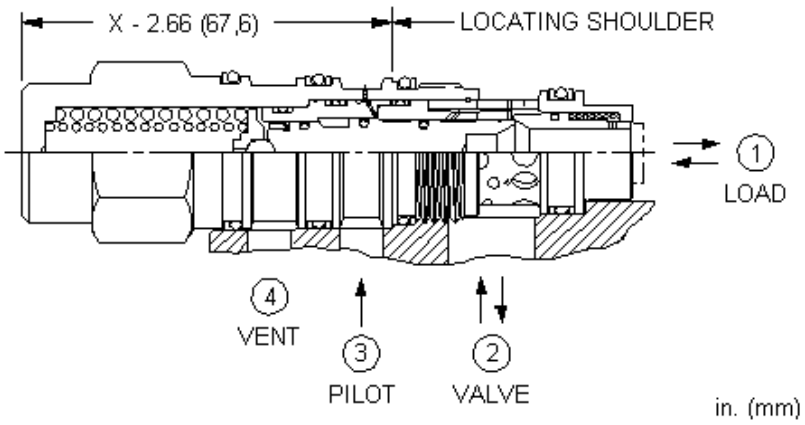
- **H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
- **J** 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



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

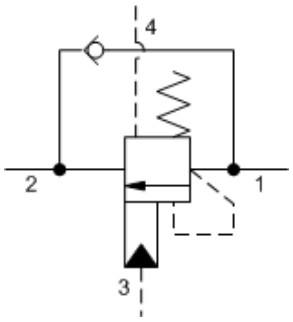
Pilot Ratio	1.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

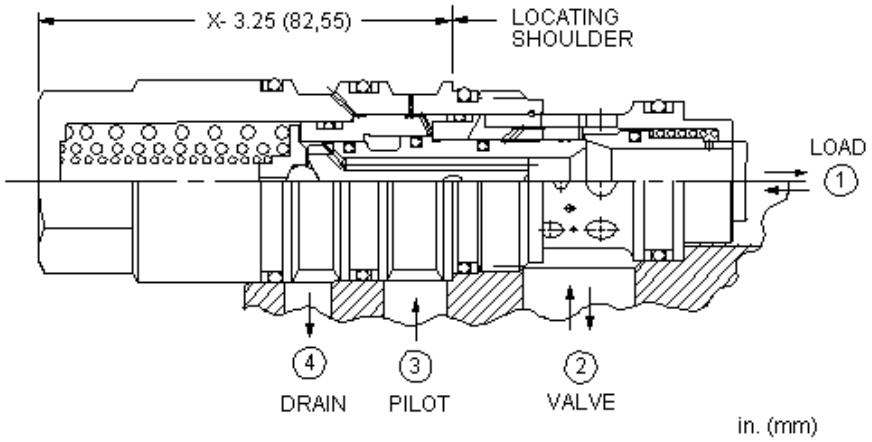
Model Code Example: MWEBXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



4-Port Vented, Non-adjustable



in. (mm)

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

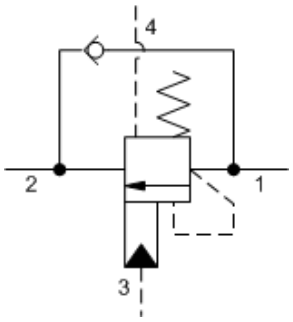
Pilot Ratio	1.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

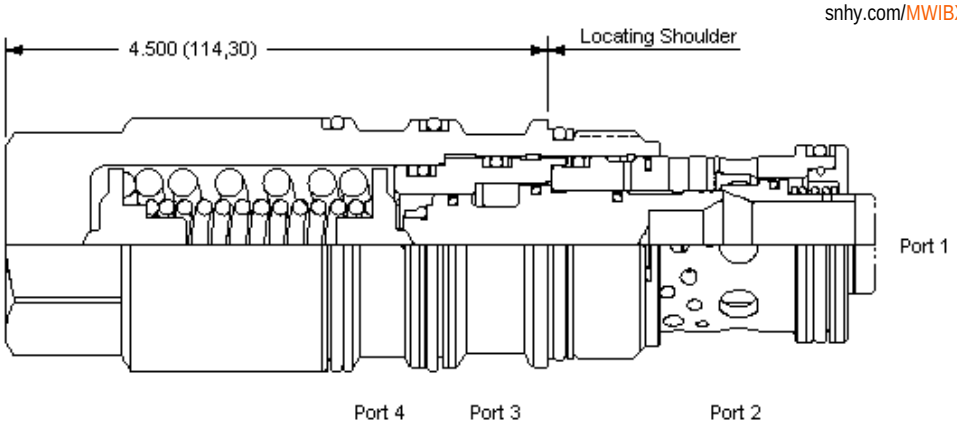
Model Code Example: MWGBXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

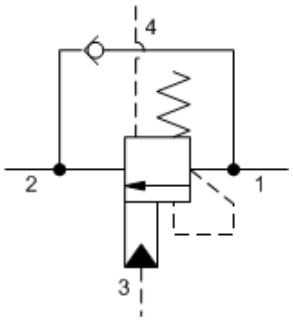
Pilot Ratio	1.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

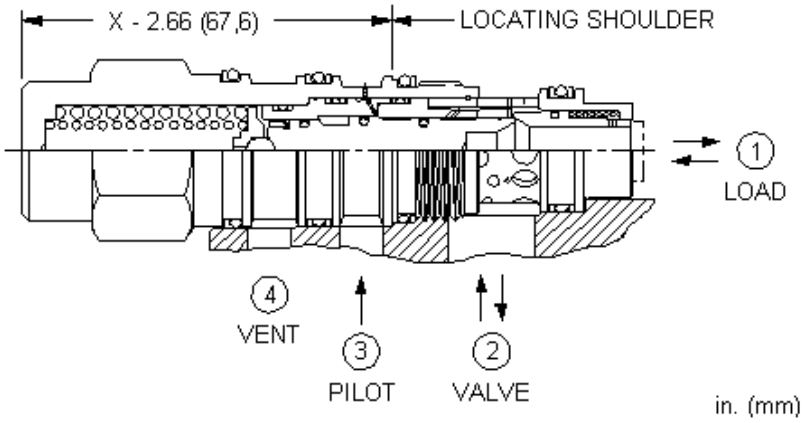
Model Code Example: MWIBXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

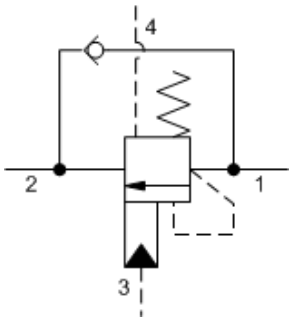
Pilot Ratio	3:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

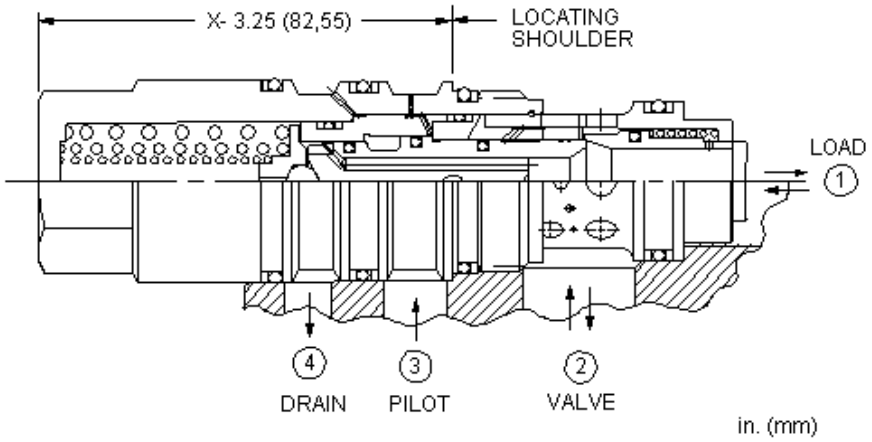
Model Code Example: MWEAXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



4-Port Vented, Non-adjustable



in. (mm)

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).

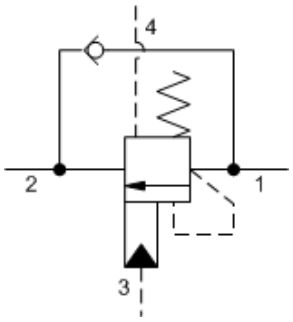
TECHNICAL DATA

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
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

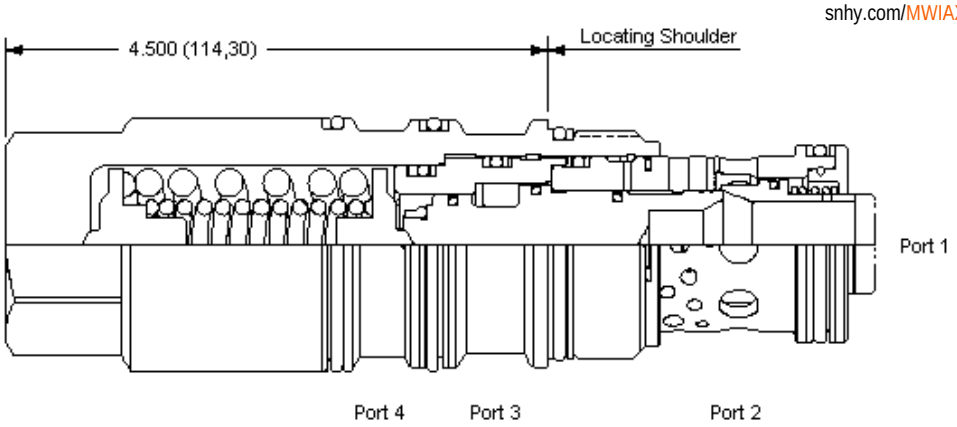
CONFIGURATION OPTIONS

Model Code Example: MWGAXLN

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



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

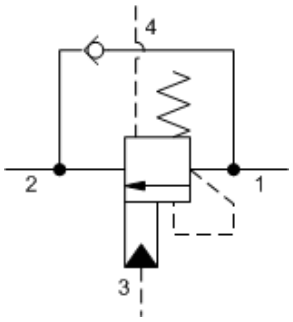
Pilot Ratio	3:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

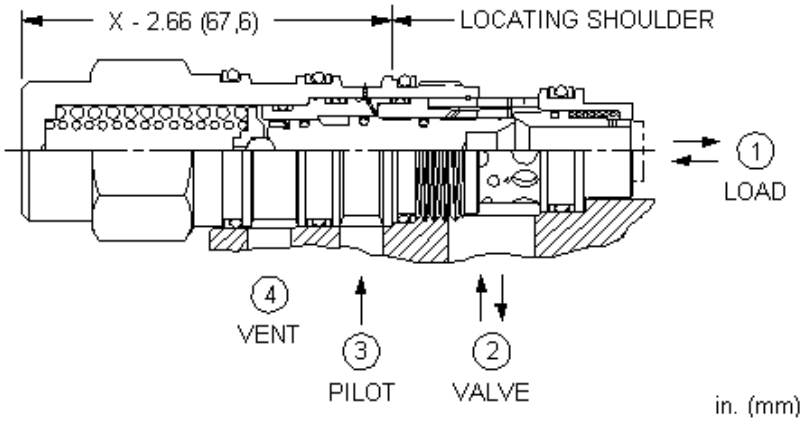
Model Code Example: MWIAXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

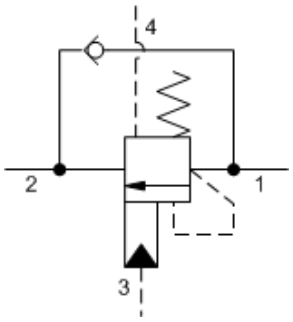
Pilot Ratio	4.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

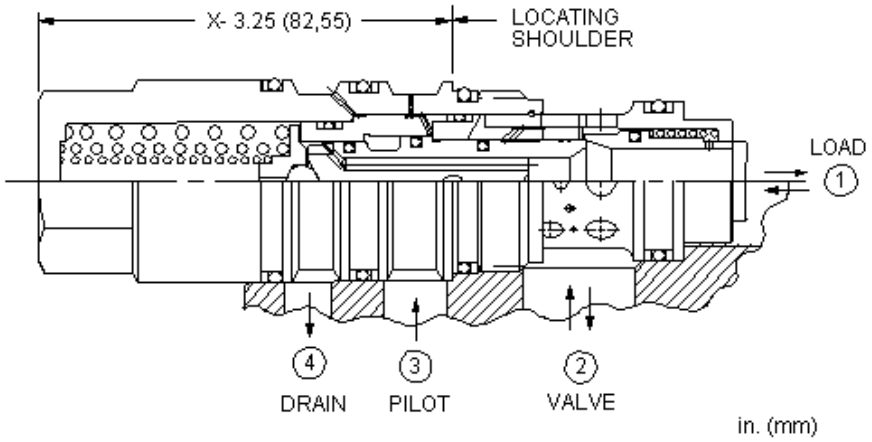
Model Code Example: MWEGXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

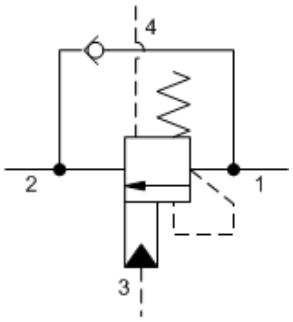
Pilot Ratio	4.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

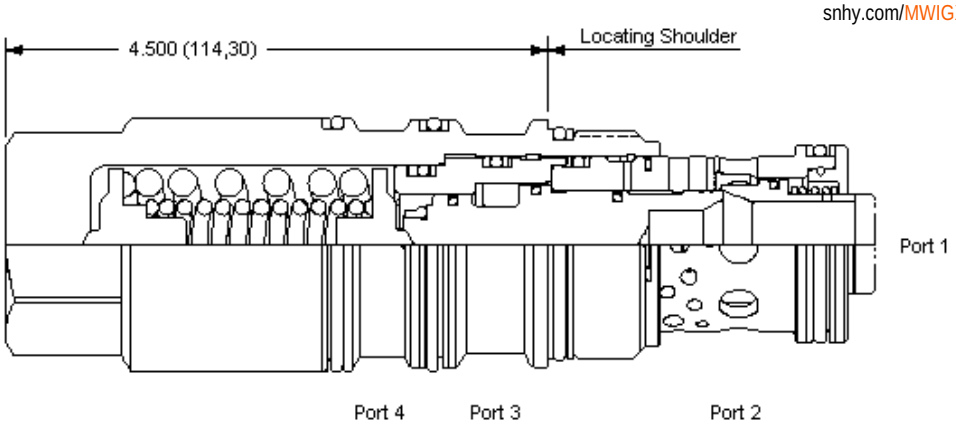
Model Code Example: MWGGXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

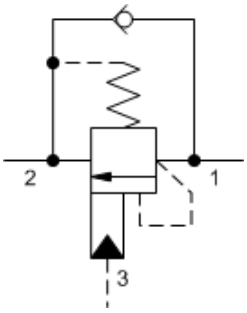
Pilot Ratio	4.5:1
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

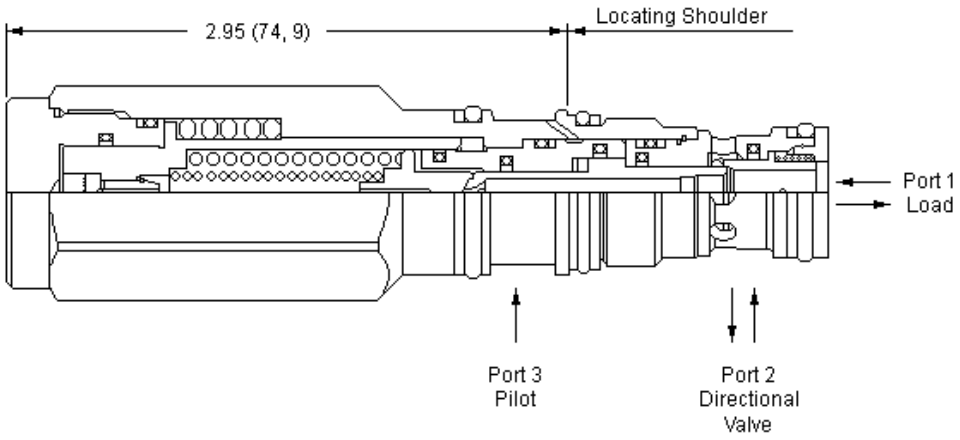
Model Code Example: MWIGXLN

FACTORY SET	(L)
L 4000 psi (280 bar)	
K 3000 psi (210 bar)	
M 5000 psi (350 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



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

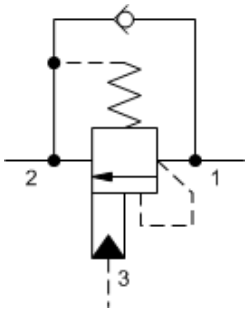
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES Patents are pending for this product.

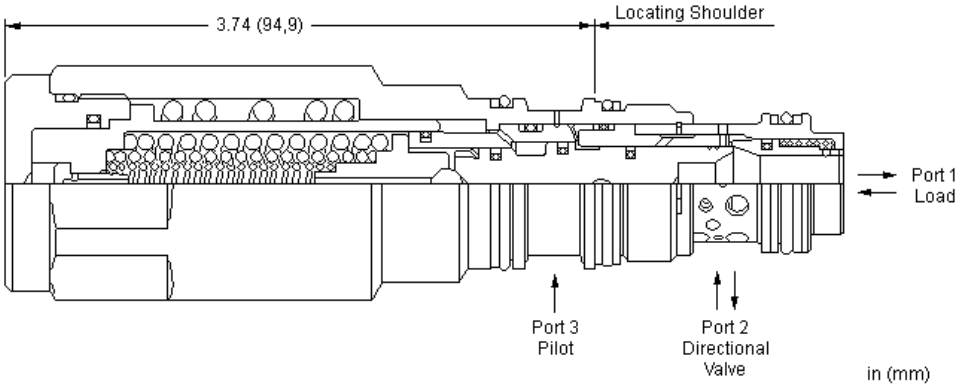
CONFIGURATION OPTIONS

Model Code Example: MBDPDHN

CONTROL (D)	FACTORY SET (H)	SEAL MATERIAL (N)
D LoadMatch™	**H** 4000 psi (280 bar)	**N** Buna-N
	J 5000 psi (350 bar)	**V** Viton



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

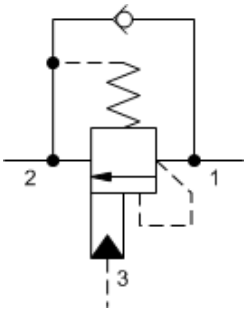
Factory Pressure Settings Established at	30 cc/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at Reseat	0,3 cc/min.
Check Cracking Pressure	1,7 bar
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

NOTES Patents are pending for this product.

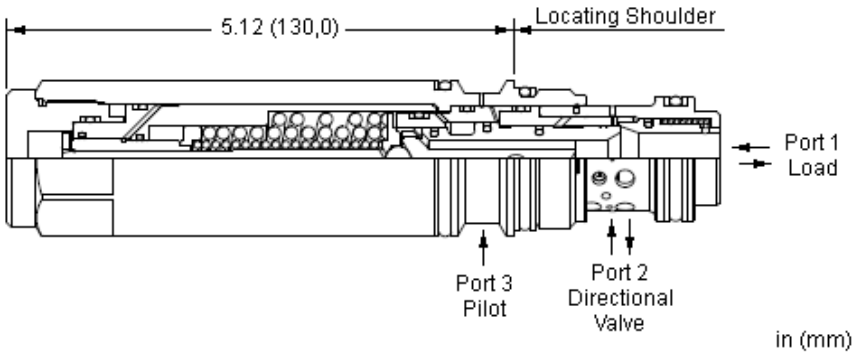
CONFIGURATION OPTIONS

Model Code Example: MBEPDHN

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



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.

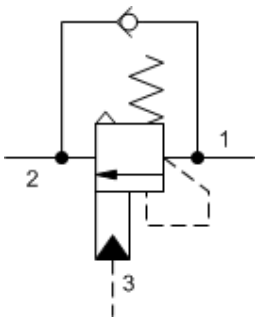
TECHNICAL DATA

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	>85% of setting
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

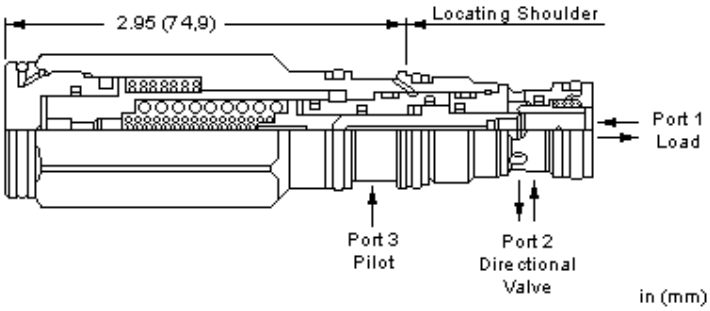
CONFIGURATION OPTIONS

Model Code Example: MBGPDHN

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)		



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

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	>85% of setting
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Viton: 990011006

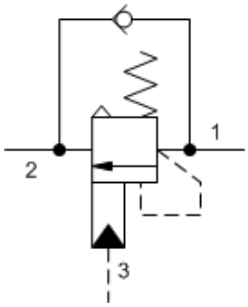
NOTES

Patents are pending for this product.

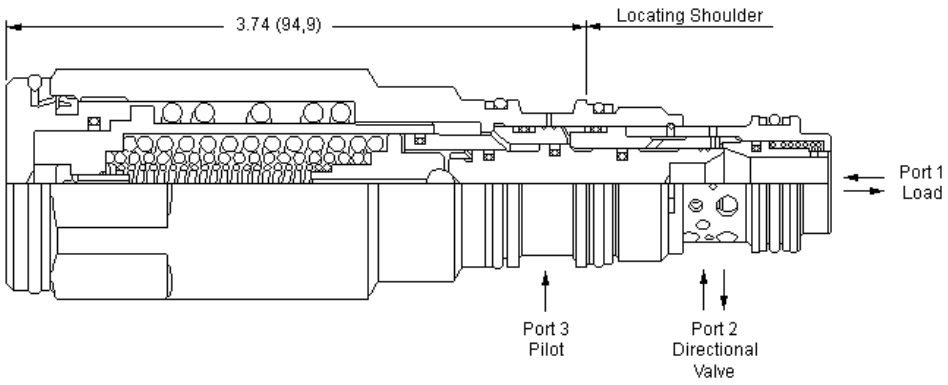
CONFIGURATION OPTIONS

Model Code Example: MADPDHN

CONTROL (D)	FACTORY SET (H)	SEAL MATERIAL (N)
D LoadMatch™	**H** 4000 psi (280 bar)	**N** Buna-N
	J 5000 psi (350 bar)	**V** Viton



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

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	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

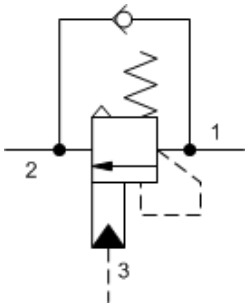
NOTES

- Patents are pending for this product.
- The pressures listed under FACTORY SET are approximate, mean values and should not be used for inspection purposes.

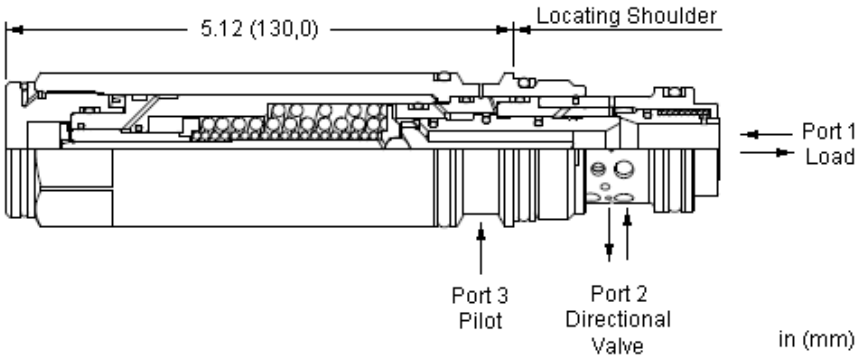
CONFIGURATION OPTIONS

Model Code Example: MAEPDHN

CONTROL (D)	FACTORY SET (H)	SEAL MATERIAL (N)	MATERIAL/COATING
D LoadMatch™	**H** 4000 psi (280 bar)	**N** Buna-N	Standard Material/Coating
	G 6000 psi (420 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	J 5000 psi (350 bar)		



3-Port Atmospherically Referenced, Non-adjustable



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

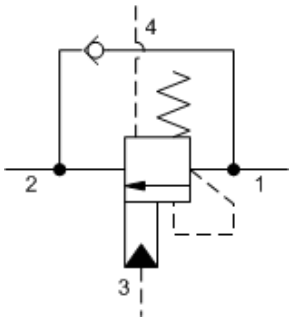
TECHNICAL DATA

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	>85% of setting
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990117006

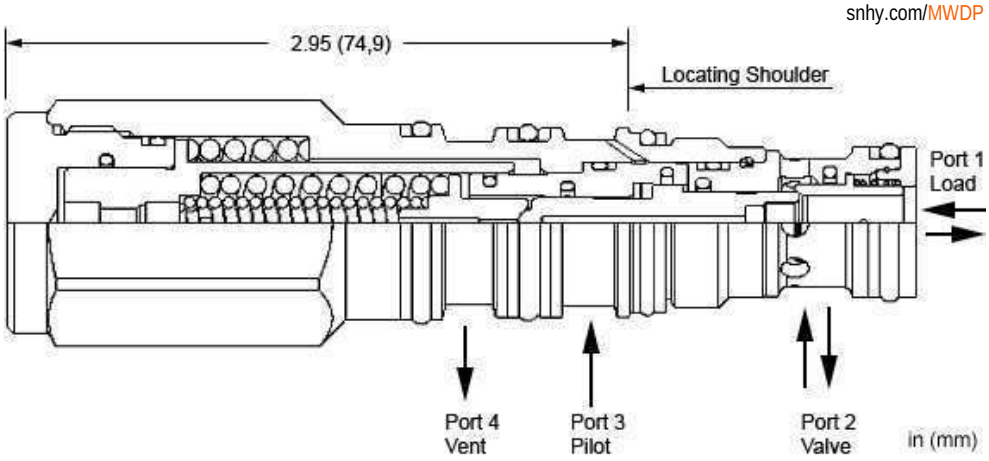
CONFIGURATION OPTIONS

Model Code Example: MAGPDHN

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



4-Port Vented, Non-adjustable



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

TECHNICAL DATA

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	>85% of setting
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

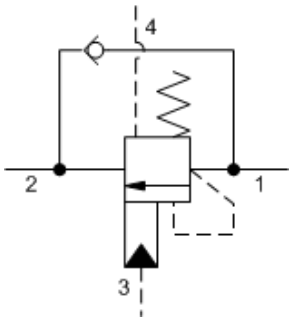
NOTES

Patents are pending for this product.

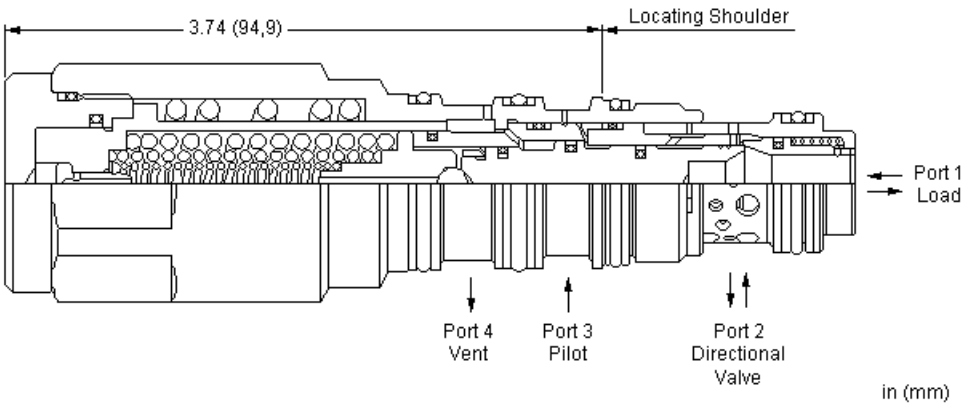
CONFIGURATION OPTIONS

Model Code Example: MWDPDHN

CONTROL (D)	FACTORY SET (H)	SEAL MATERIAL (N)	MATERIAL/COATING
D LoadMatch™	**H** 4000 psi (280 bar)	**N** Buna-N	Standard Material/Coating
	J 5000 psi (350 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel



4-Port Vented, Non-adjustable



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

TECHNICAL DATA

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	>85% of setting
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

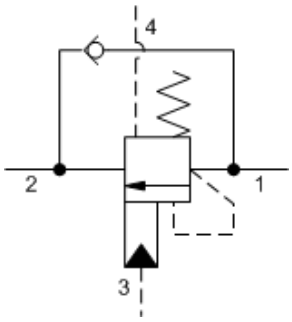
NOTES

Patents are pending for this product.

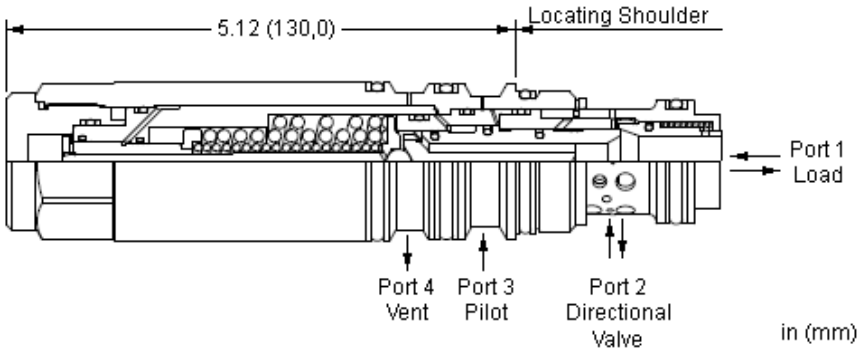
CONFIGURATION OPTIONS

Model Code Example: MWEPDHN

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



4-Port Vented, Non-adjustable



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

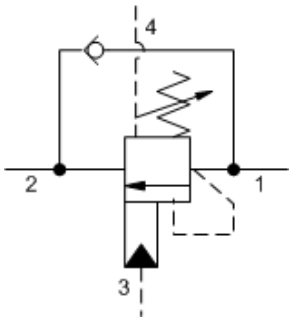
TECHNICAL DATA

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	>85% of setting
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

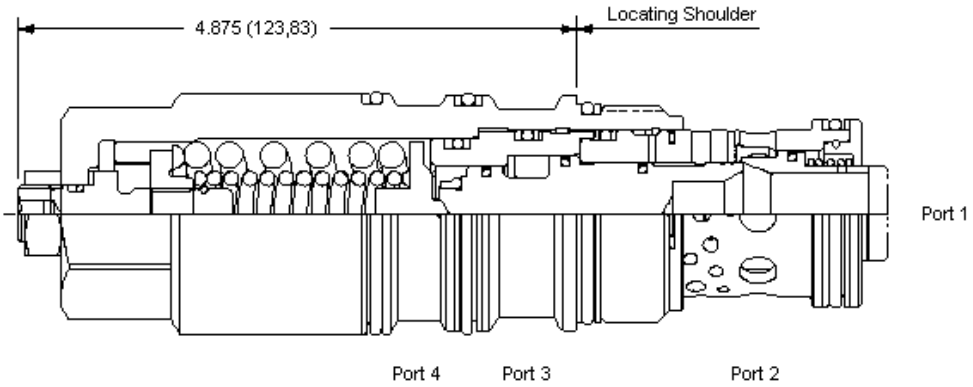
CONFIGURATION OPTIONS

Model Code Example: MWGPDHN

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



4-Port Vented



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

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	260 bar
Maximum Setting	350 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 - Number of Counterclockwise Turns to Increase Setting	8.5
Reseat	>85% of setting
Locknut Hex Size	15 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: MWIBLHN

CONTROL (L)

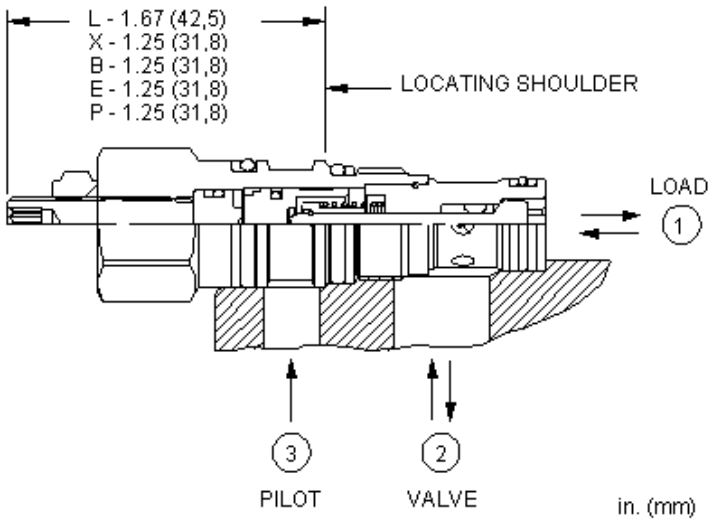
- **L** Standard Screw Adjustment

FUNCTIONAL SETTING RANGE (H)

- **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

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



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

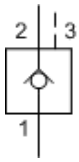
TECHNICAL DATA

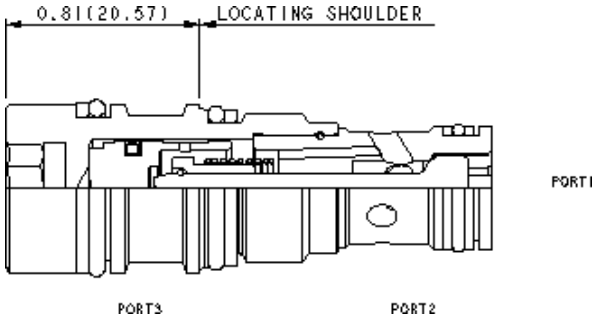
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: CKBBXCN

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





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

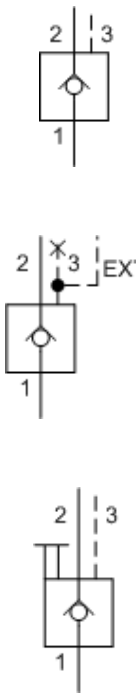
TECHNICAL DATA

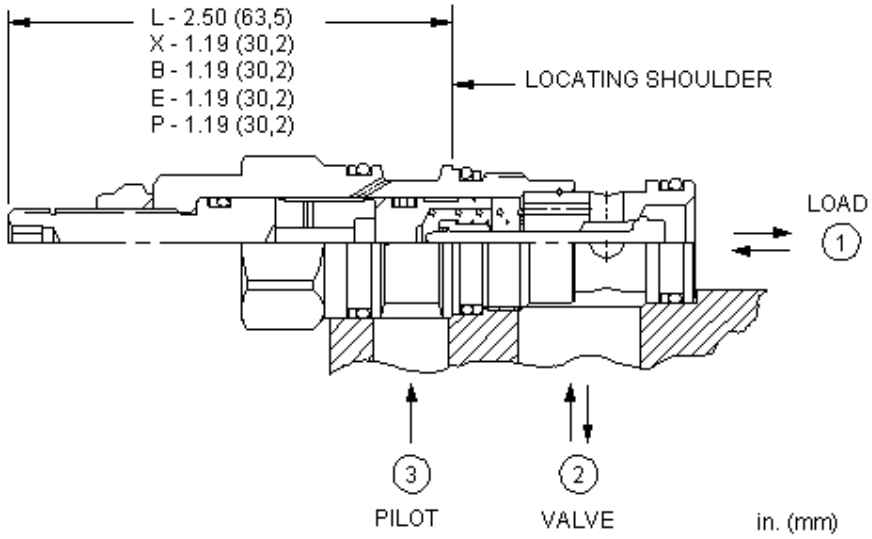
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Valve Internal Hex Size	8 mm
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: CKBGXCN

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





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

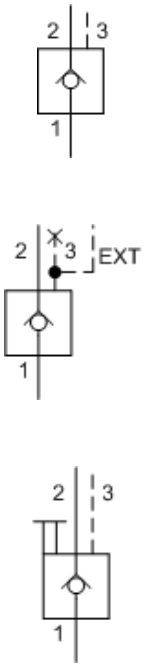
TECHNICAL DATA

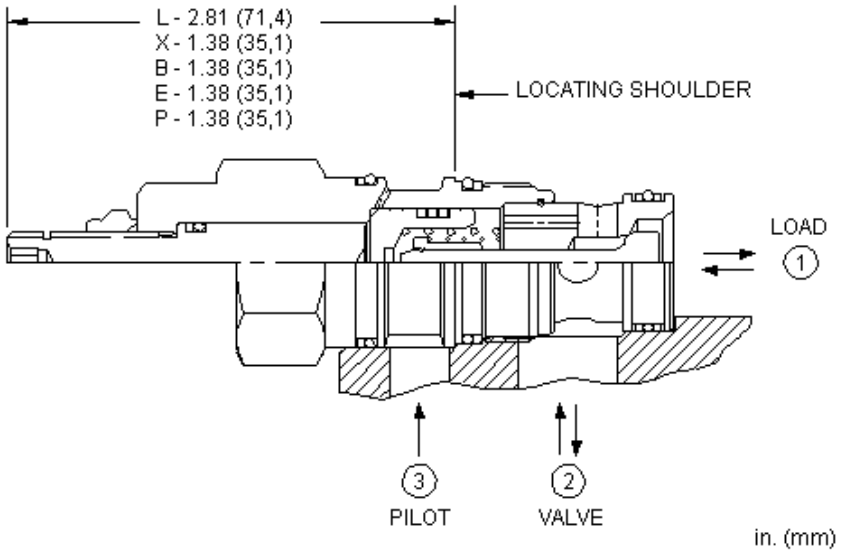
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CKCBXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**E** EPDM	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





in. (mm)

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

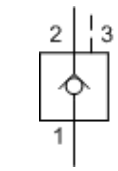
TECHNICAL DATA

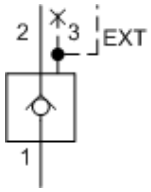
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

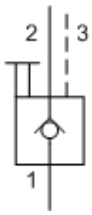
CONFIGURATION OPTIONS

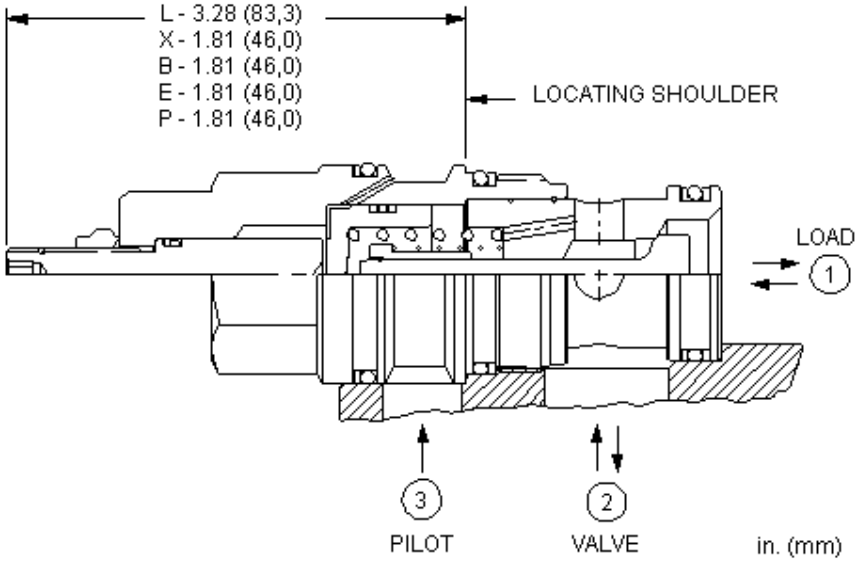
Model Code Example: CKEBXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**E** EPDM	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		









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

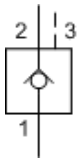
TECHNICAL DATA

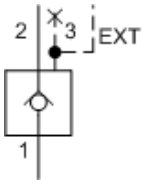
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

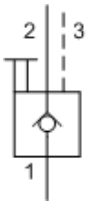
CONFIGURATION OPTIONS

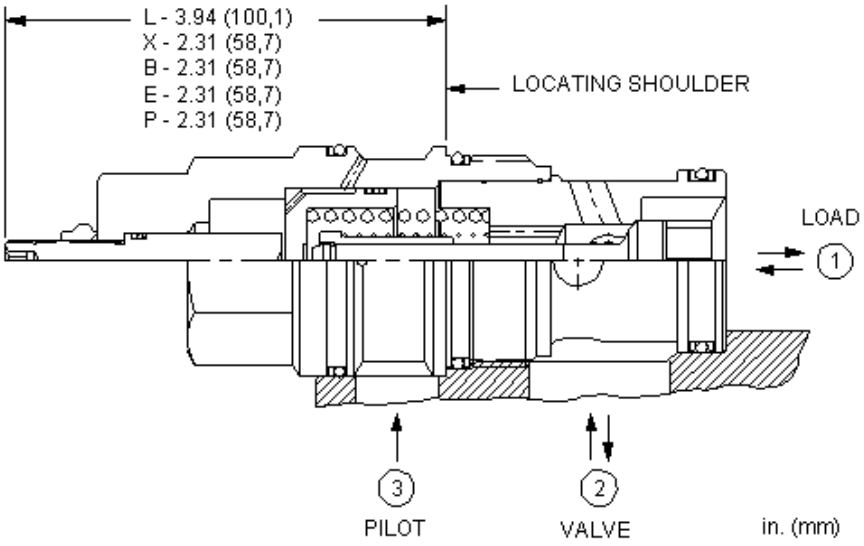
Model Code Example: CKGBXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**E** EPDM	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		









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

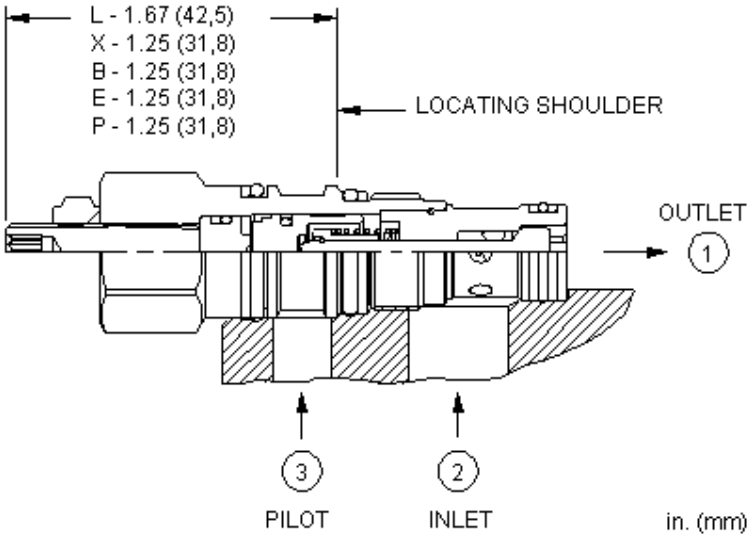
TECHNICAL DATA

Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: CKIBXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**E** EPDM	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		



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

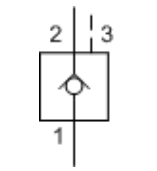
TECHNICAL DATA

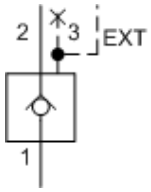
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

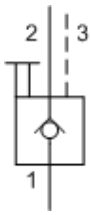
CONFIGURATION OPTIONS

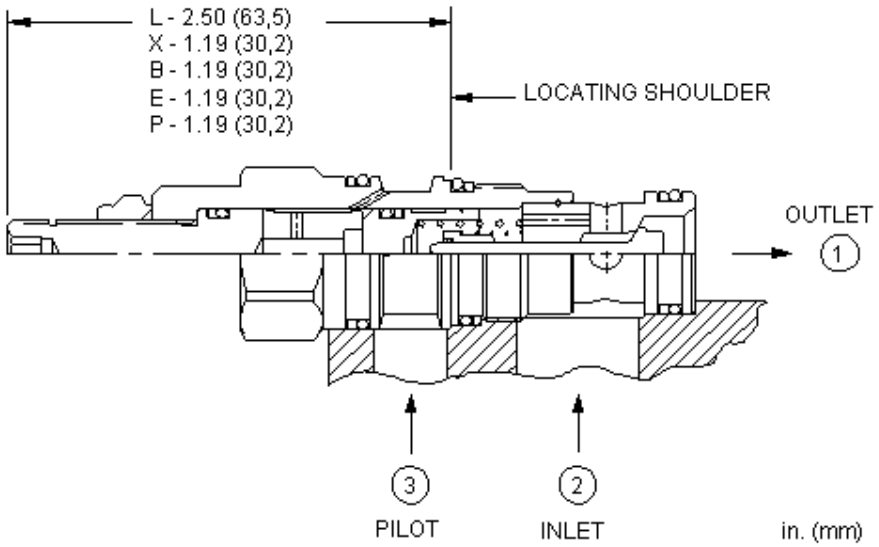
Model Code Example: CKBDXCN

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









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

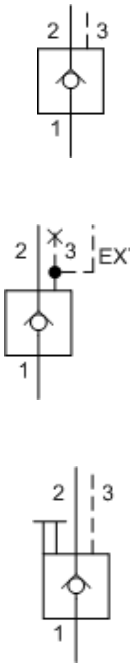
TECHNICAL DATA

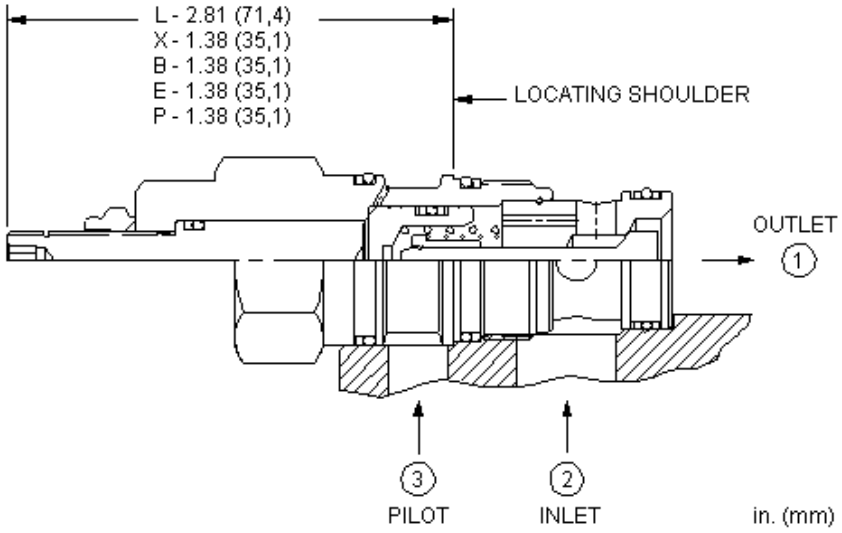
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CKCDXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		
	G 150 psi (10,5 bar)		





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

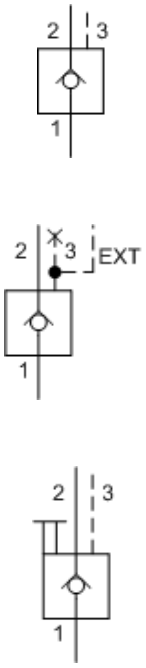
TECHNICAL DATA

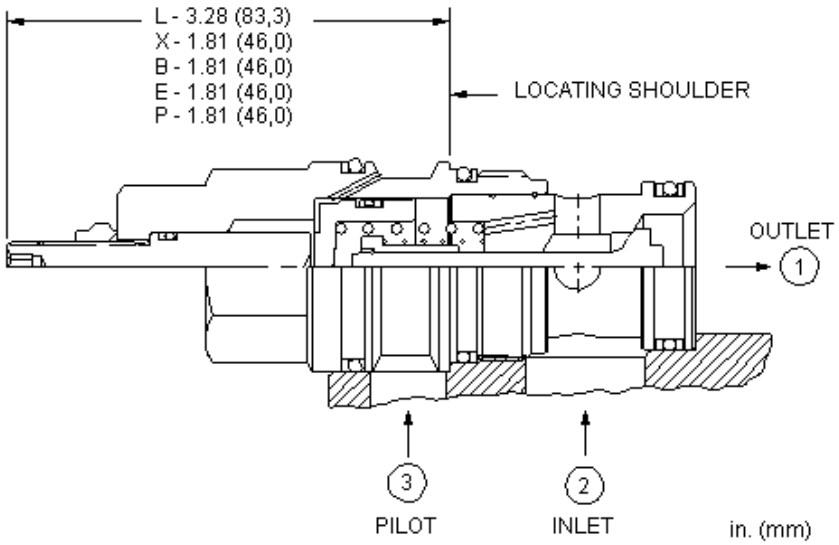
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CKEDXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

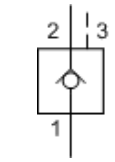
TECHNICAL DATA

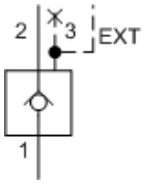
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

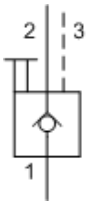
CONFIGURATION OPTIONS

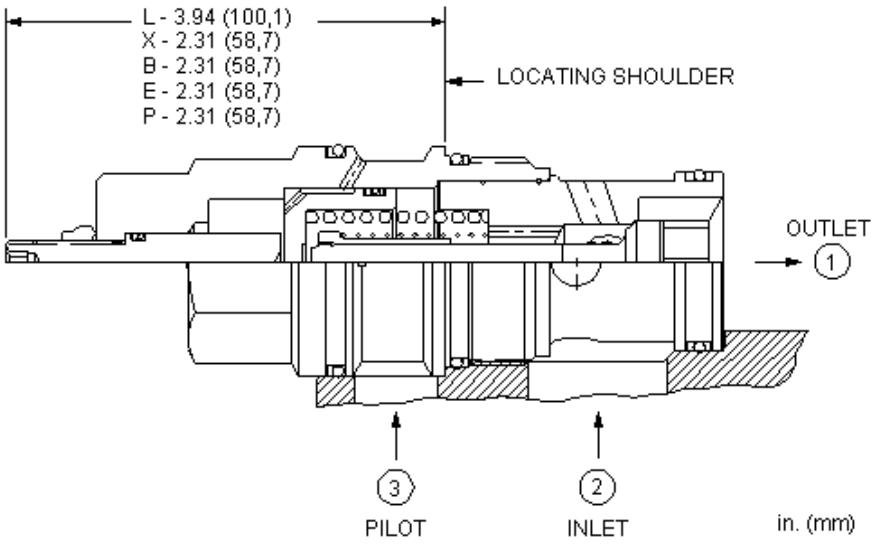
Model Code Example: CKGDXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**E** EPDM	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		









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

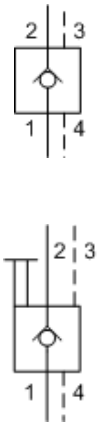
TECHNICAL DATA

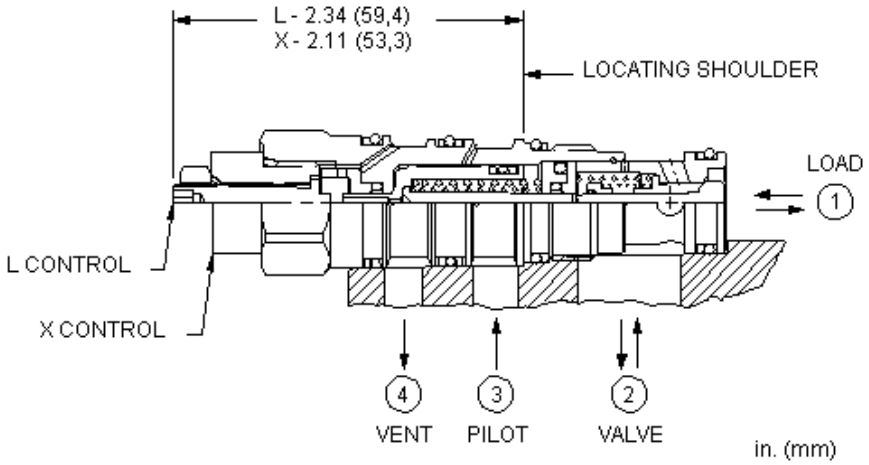
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: CKIDXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

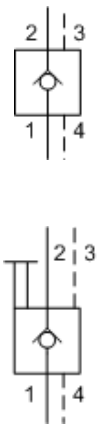
TECHNICAL DATA

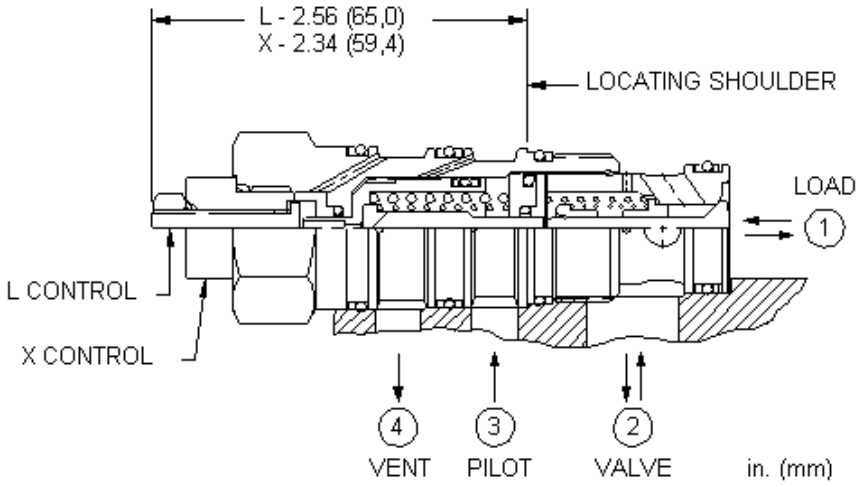
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: CVCVXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

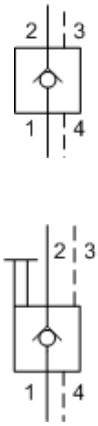
TECHNICAL DATA

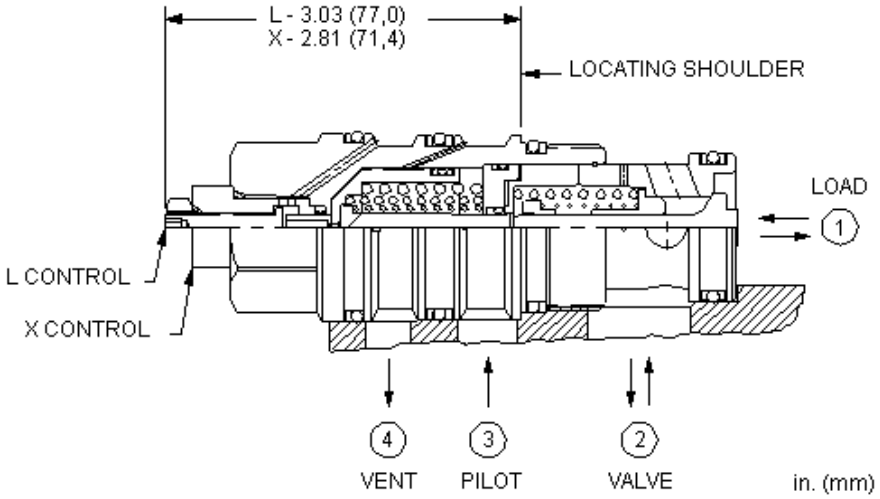
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: CVEVXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

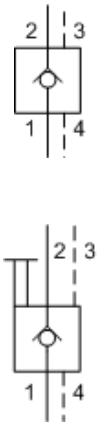
TECHNICAL DATA

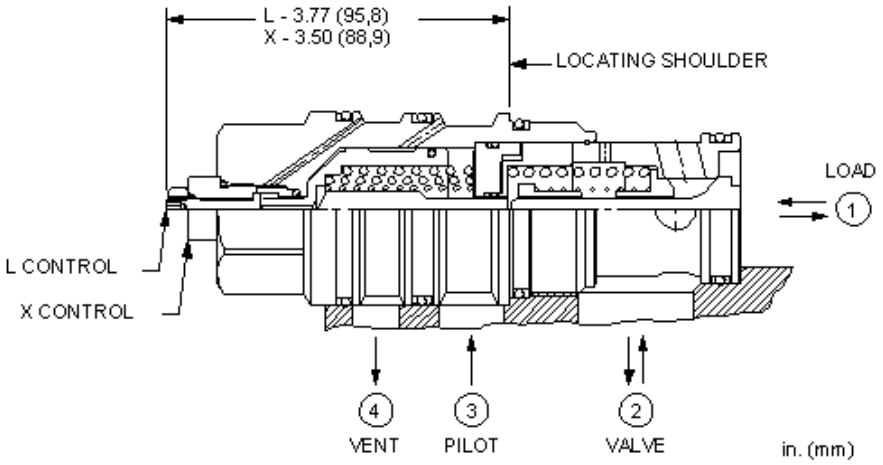
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: CVGVXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

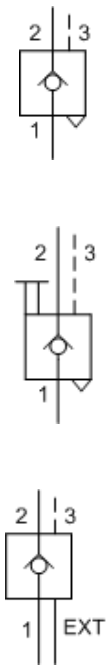
TECHNICAL DATA

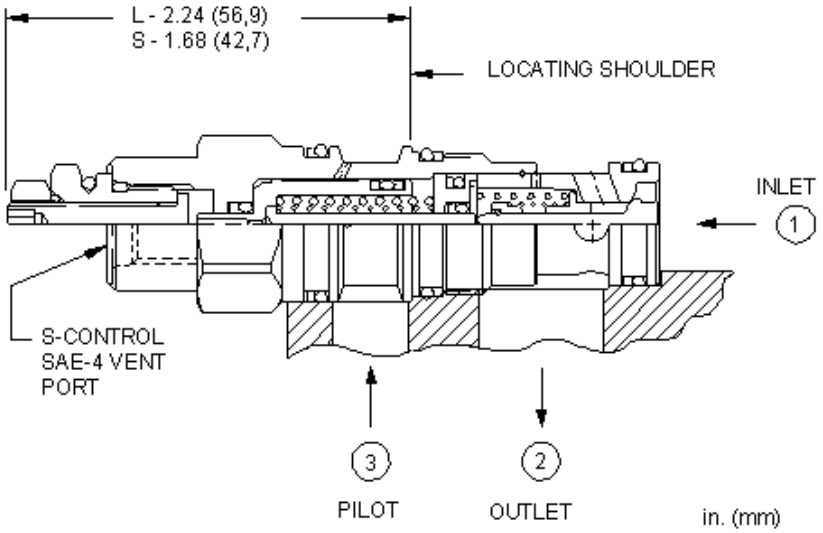
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Pilot Volume Displacement	4,9 cc
Pilot Passage into Valve	2,3 mm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	EPDM: 990024014
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: CVIVXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
L Manual Load Release	**A** 4 psi (0,3 bar)	**E** EPDM	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

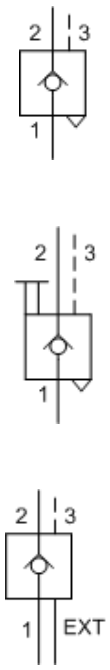
TECHNICAL DATA

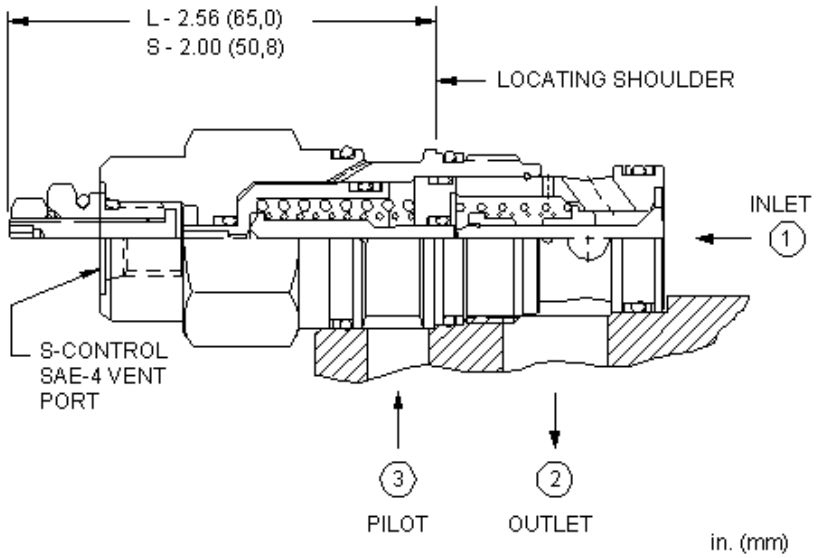
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990311007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990311006

CONFIGURATION OPTIONS

Model Code Example: CKCVXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot, Atmospheric Vent	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
S External 4-SAE Vent Port	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		**/LH** Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

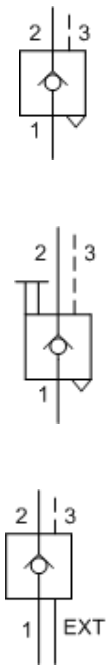
TECHNICAL DATA

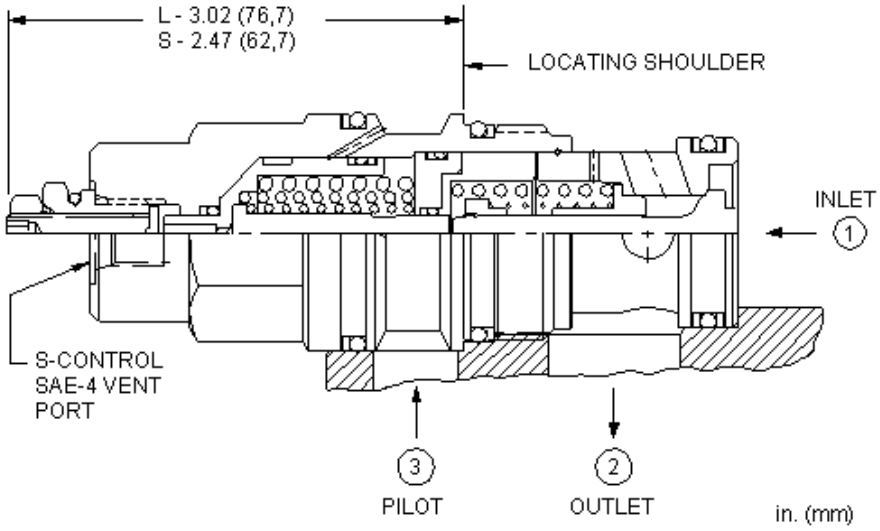
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CKEVXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)
X Standard Pilot, Atmospheric Vent	**C** 30 psi (2 bar)	**N** Buna-N
S External 4-SAE Vent Port	**A** 4 psi (0,3 bar)	**V** Viton
	B 15 psi (1 bar)	
	D 50 psi (3,5 bar)	
	E 75 psi (5 bar)	
	F 100 psi (7 bar)	





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

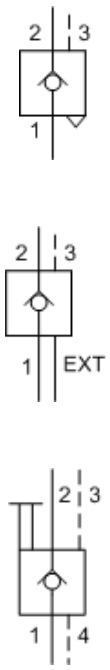
TECHNICAL DATA

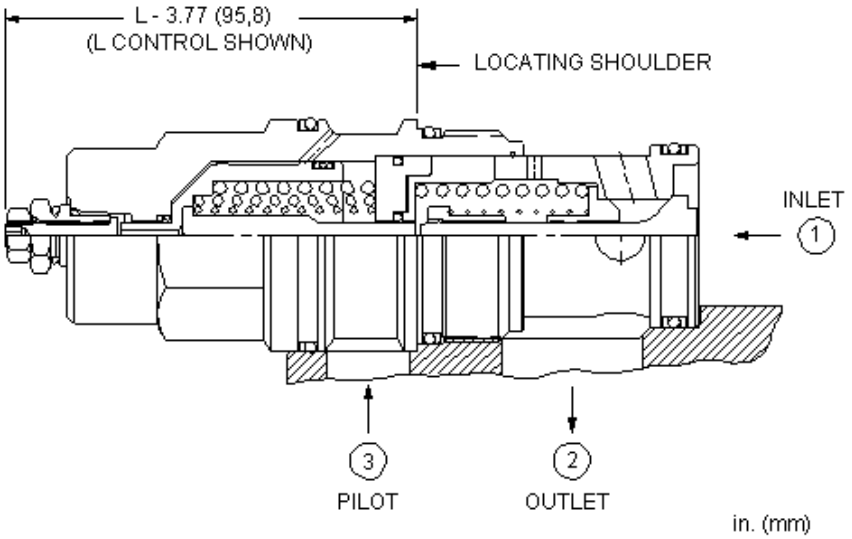
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: CKGVXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot, Atmospheric Vent	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
S External 4-SAE Vent Port	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

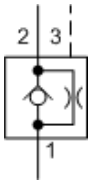
TECHNICAL DATA

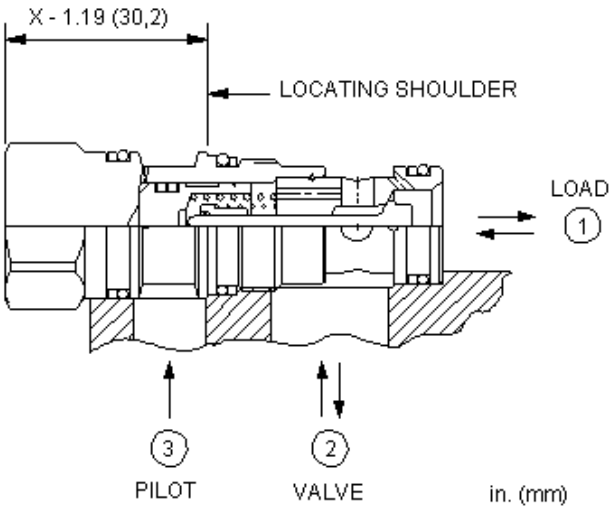
Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: CKIVXCN

CONTROL (X)	CRACKING PRESSURE (C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot, Atmospheric Vent	**C** 30 psi (2 bar)	**N** Buna-N	Standard Material/Coating
S External 4-SAE Vent Port	**A** 4 psi (0,3 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
	B 15 psi (1 bar)		
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		
	F 100 psi (7 bar)		





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

TECHNICAL DATA

Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Orifice Range	0,4 - 3,9 mm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CNCEXCN

CONTROL (X)

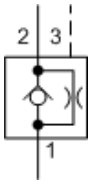
- **X** Not Adjustable

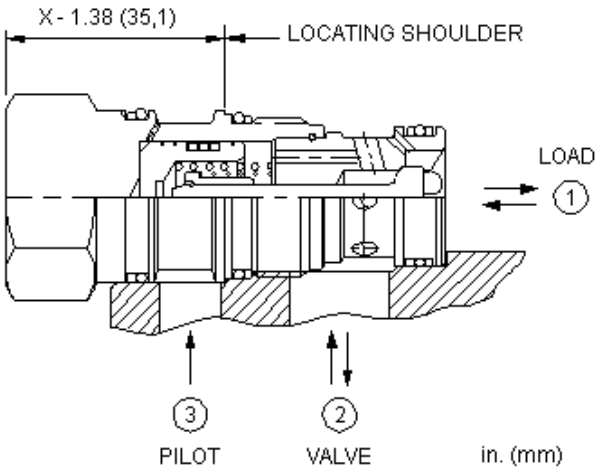
SETTING RANGE (C)

- **C** 30 psi (2 bar) Cracking Pressure, .016 - .153 in. (0,4 - 3,9 mm)
- **A** 4 psi (0,3 bar) Cracking Pressure, .016 - .153 in. (0,4 - 3,9 mm)
- **B** 15 psi (1 bar) Cracking Pressure, .016 - .153 in. (0,4 - 3,9 mm)
- **D** 50 psi (3,5 bar) Cracking Pressure, .016 - .153 in. (0,4 - 3,9 mm)
- **E** 75 psi (5 bar) Cracking Pressure, .016 - .153 in. (0,4 - 3,9 mm)
- **F** 100 psi (7 bar) Cracking Pressure, .016 - .153 in. (0,4 - 3,9 mm)

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton





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

TECHNICAL DATA

Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Orifice Range	0,4 - 3,4 mm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CNEEXCN

CONTROL (X)

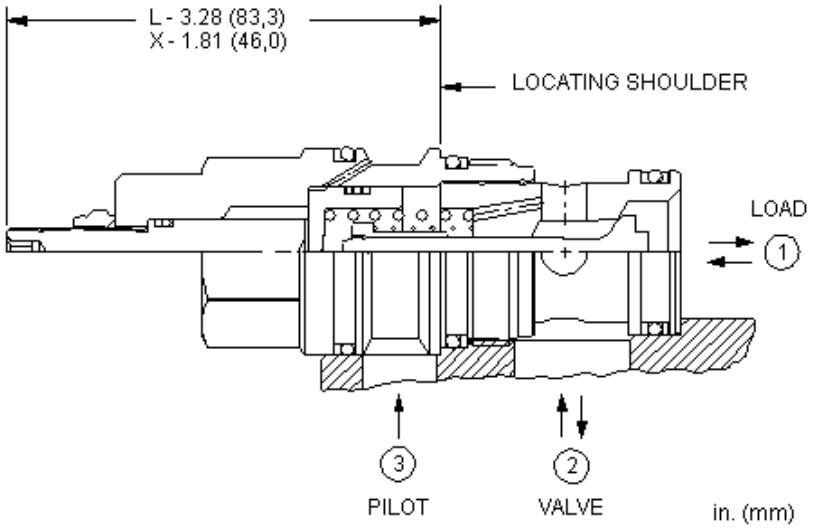
- **X** Not Adjustable

SETTING RANGE (C)

- **C** 30 psi (2 bar) Cracking Pressure, .016 - .135 in. (0,4 - 3,4 mm)
- **A** 4 psi (0,3 bar) Cracking Pressure, .016 - .135 in. (0,4 - 3,4 mm)
- **B** 15 psi (1 bar) Cracking Pressure, .016 - .135 in. (0,4 - 3,4 mm)
- **D** 50 psi (3,5 bar) Cracking Pressure, .016 - .135 in. (0,4 - 3,4 mm)
- **E** 75 psi (5 bar) Cracking Pressure, .016 - .135 in. (0,4 - 3,4 mm)
- **F** 100 psi (7 bar) Cracking Pressure, .016 - .135 in. (0,4 - 3,4 mm)

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



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

TECHNICAL DATA

Pilot Ratio	3:1
Maximum Operating Pressure	350 bar
Orifice Range	0,4 - 5,5 mm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: CNGEXCN

CONTROL (X)

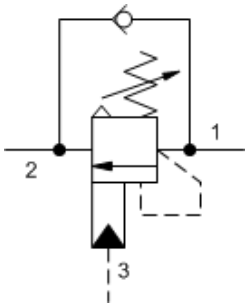
- **X** Not Adjustable

SETTING RANGE (C)

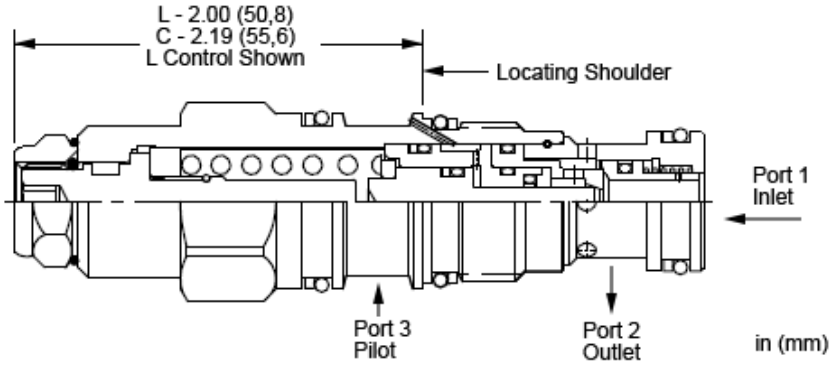
- **C** 30 psi (2 bar) Cracking Pressure, .016 - .218 in. (0,4 - 5,5 mm)
- **A** 4 psi (0,3 bar) Cracking Pressure, .016 - .218 in. (0,4 - 5,5 mm)
- **B** 15 psi (1 bar) Cracking Pressure, .016 - .218 in. (0,4 - 5,5 mm)
- **D** 50 psi (3,5 bar) Cracking Pressure, .016 - .218 in. (0,4 - 5,5 mm)
- **E** 75 psi (5 bar) Cracking Pressure, .016 - .218 in. (0,4 - 5,5 mm)
- **F** 100 psi (7 bar) Cracking Pressure, .016 - .218 in. (0,4 - 5,5 mm)

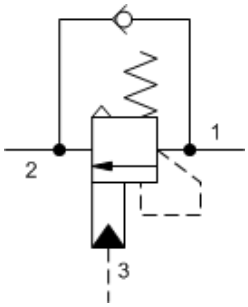
SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



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.

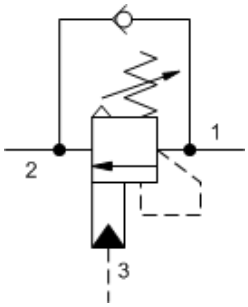
TECHNICAL DATA

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

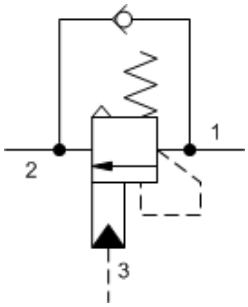
CONFIGURATION OPTIONS

Model Code Example: CABNLHN

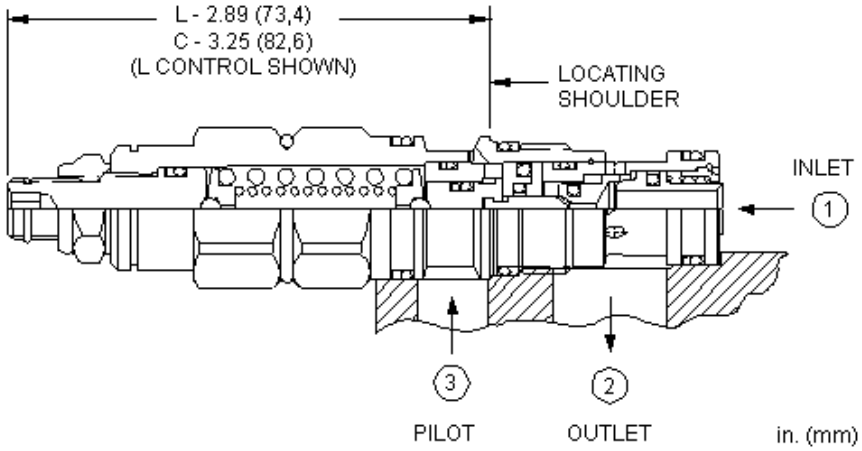
CONTROL (L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)
L Standard Screw Adjustment	**H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting	**N** Buna-N
C Tamper Resistant - Factory Set		**V** Viton



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.

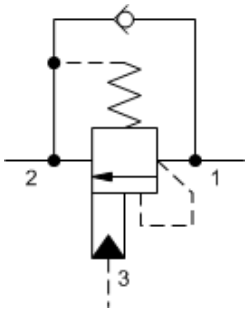
TECHNICAL DATA

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 - Number of Counterclockwise Turns to Increase 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

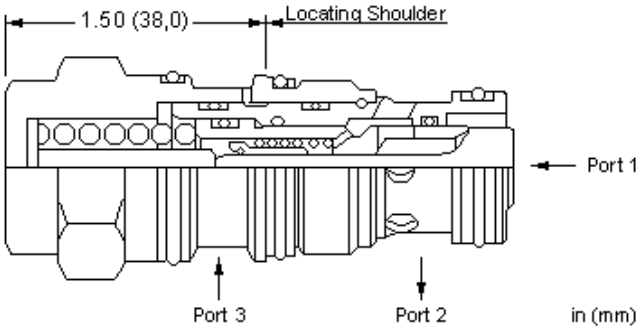
CONFIGURATION OPTIONS

Model Code Example: CACHLGN

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



3-Port Non-vented, Fixed Setting



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

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

TECHNICAL DATA

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

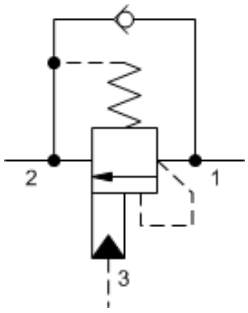
CONFIGURATION OPTIONS

Model Code Example: CBDBXNN

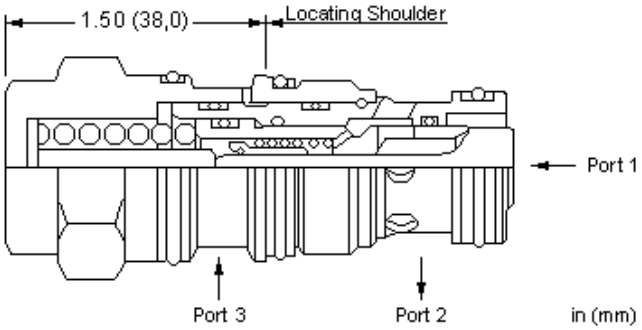
FIXED PRESSURE RANGE	(N)
N 2900 - 3500 psi (200 - 245 bar)	
P 2250 - 2680 psi (155 - 185 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	

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



3-Port Non-vented, Fixed Setting



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

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

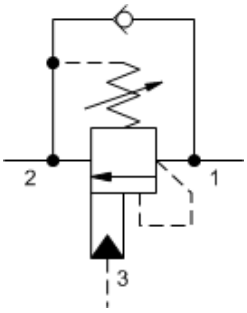
TECHNICAL DATA

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

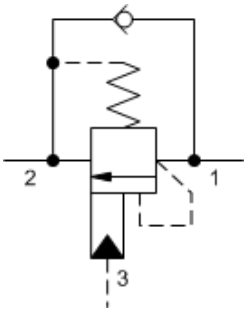
CONFIGURATION OPTIONS

Model Code Example: CBDHXXN

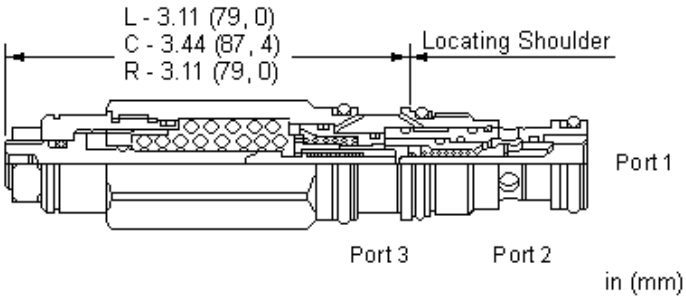
FIXED PRESSURE RANGE (X)	SEAL MATERIAL (N)	MATERIAL/COATING
X 3500 - 4200 psi (245 - 290 bar)	**N** Buna-N	Standard Material/Coating
M 4700 - 5600 psi (325 - 390 bar)	**V** Viton	**/LH** Mild Steel, Zinc-Nickel
V 3200 - 3800 psi (220 - 260 bar)		
Z 4125 - 4900 psi (285 - 340 bar)		



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

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 - Number of Counterclockwise Turns to Increase 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 Patents are pending for this product.

CONFIGURATION OPTIONS

Model Code Example: CEBALHN

CONTROL (L)

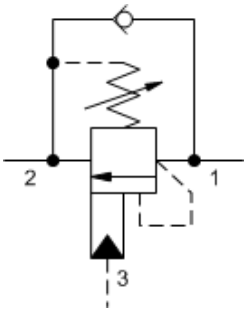
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

ADJUSTMENT RANGE (H)

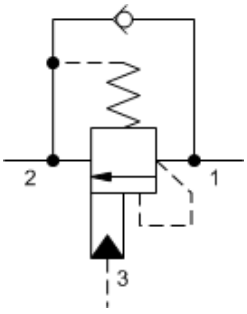
- **H** 1500 - 4000 psi w/ 25 psi check (105 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1500 - 4000 psi w/ 4 psi check (105 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

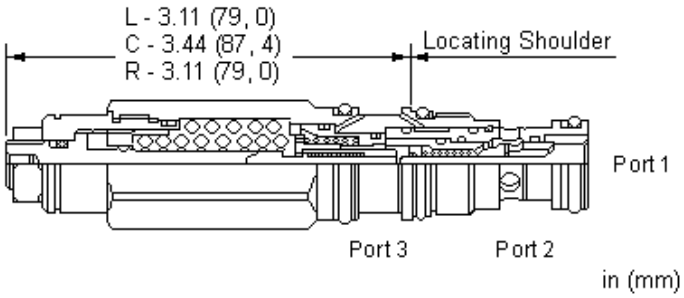
- **N** Buna-N
- **V** Viton



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

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 - Number of Counterclockwise Turns to Increase 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 Patents are pending for this product.

CONFIGURATION OPTIONS

Model Code Example: CEBCLHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

ADJUSTMENT RANGE (H)

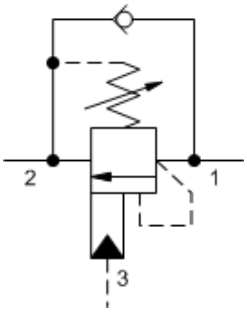
- **H** 1500 - 4000 psi w/ 25 psi check (105 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1500 - 4000 psi w/ 4 psi check (105 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

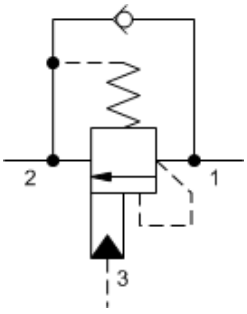
- **N** Buna-N
- **V** Viton

MATERIAL/COATING

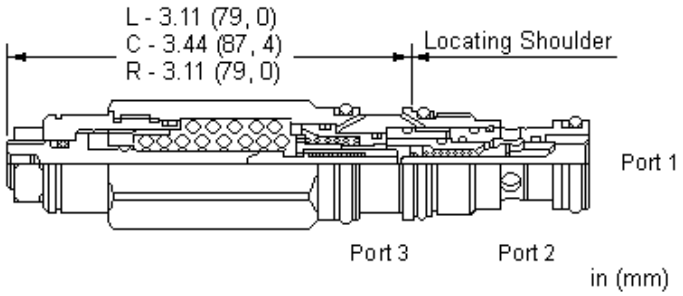
- Standard Material/Coating
- **/LH** Mild Steel, Zinc-Nickel



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

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 - Number of Counterclockwise Turns to Increase 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 Patents are pending for this product.

CONFIGURATION OPTIONS

Model Code Example: CECALHN

CONTROL (L)

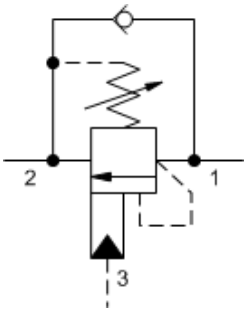
- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

ADJUSTMENT RANGE (H)

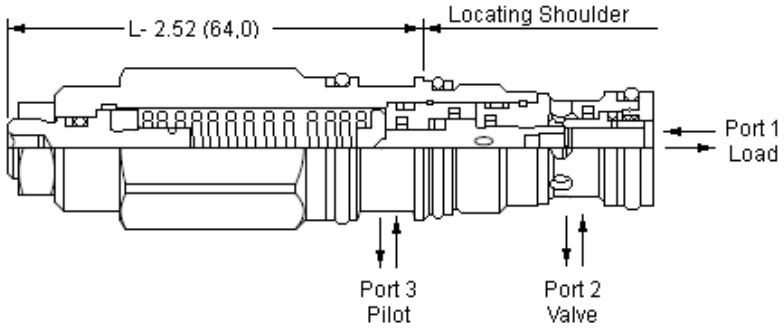
- **H** 1500 - 4000 psi w/ 25 psi check (105 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
- **A** 1500 - 4000 psi w/ 4 psi check (105 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton



3-Port Non-vented



in (mm)

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

Pilot Ratio	8:1
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.
Check Cracking Pressure	1,7 bar
Adjustment - Number of Counterclockwise Turns to Increase Setting	6.5
Reseat	>85% of setting
Locknut Hex Size	15 mm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: MBDNLHN

CONTROL (L)

- **L** Standard Screw Adjustment
- **C** Tamper Resistant - Factory Set

FUNCTIONAL SETTING RANGE (H)

- **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

SEAL MATERIAL (N)

- **N** Buna-N
- **V** Viton

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