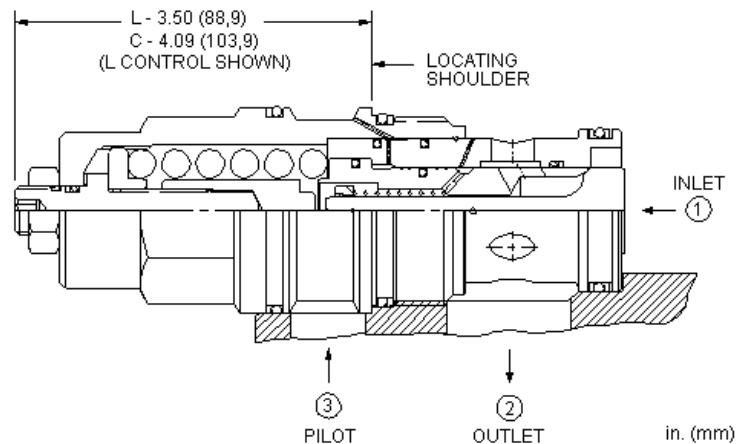
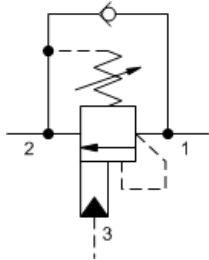


**MODEL**  
CBHA

**3:1 pilot ratio, restrictive counterbalance valve**  
**CAPACITY:** 80 L/min. | **CAVITY:** T-19A



### CONFIGURATION

<b>L</b>	Control	Standard Screw Adjustment
<b>H</b>	Functional Setting Range	1000 - 4000 psi w/25 psi Check (70 - 280 bar w/1,7 bar Check), 3000 psi (210 bar) Standard Setting
<b>N</b>	Seal Material	Buna-N

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

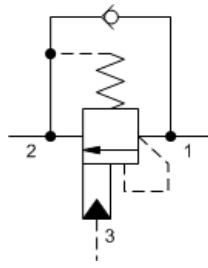
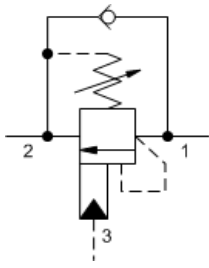
### TECHNICAL DATA

Cavity	T-19A
Series	4
Capacity	80 L/min.
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
Operating Characteristic	Restrictive
Reseat	>85% of setting
Valve Hex Size	41,3 mm
Valve Installation Torque	475 - 508 Nm
Adjustment Screw Internal Hex Size	5,5 mm
Adjustment Locknut/Cap Hex Size	19,1 mm
Adjustment Nut Torque	35 - 40 Nm
Seal kit - Cartridge	Buna: 990-019-007
Seal kit - Cartridge	Polyurethane: 990-019-002
Seal kit - Cartridge	Viton: 990-019-006
Model Weight	1.36 kg.

### SYMBOLS

3-Port Non-vented

3-Port Non-vented, Fixed Setting

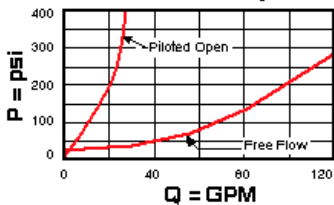


## TECHNICAL FEATURES

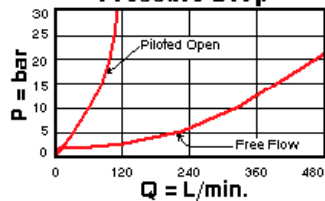
- Counterbalance valves should be set at least 1.3 times the maximum load induced pressure.
- Restrictive valves have no relief capacity other than as a thermal relief.
- Turn adjustment clockwise to decrease setting and release load.
- Full clockwise setting is less than 200 psi (14 bar).
- Backpressure at port 2 adds to the effective relief setting at a ratio of 1 plus the pilot ratio times the backpressure.
- Reseat exceeds 85% of set pressure when the valve is standard set. Settings lower than the standard set pressure may result in lower reseal percentages.
- Sun counterbalance cartridges can be installed directly into a cavity machined in an actuator housing for added protection and improved stiffness in the circuit.
- Two check valve cracking pressures are available. Use the 25 psi (1,7 bar) check unless actuator cavitation is a concern.
- This valve has positive seals between all ports.
- All 3-port counterbalance, load control, and pilot-to-open check cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size).
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

## PERFORMANCE CURVES

**Free Flow and Piloted Open Pressure Drop**



**Free Flow and Piloted Open Pressure Drop**



## CONFIGURATION OPTIONS

### CONTROL

<b>Standard Options</b>	<b>C</b>	Tamper Resistant - Factory Set
	<b>L</b>	Standard Screw Adjustment

### FUNCTIONAL SETTING RANGE

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

### SEAL MATERIAL

<b>Standard Options</b>	<b>N</b>	Buna-N
	<b>V</b>	Viton

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