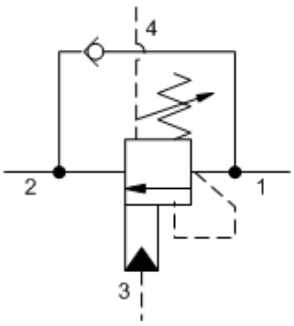
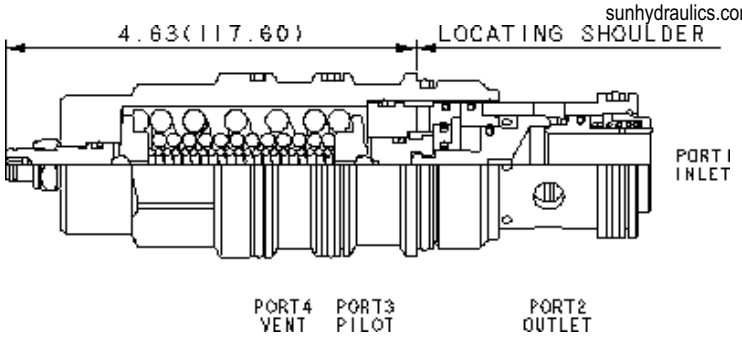
MODEL
CWIA

3:1 pilot ratio, vented counterbalance valve
SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-24A

sunhydraulics.com/model/CWIA



4-Port Vented



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.

CONFIGURATION

L	Control	Standard Screw Adjustment
H	Functional Setting Range	1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
V	Seal Material	Viton
(none)	Material/Coating	Standard Material/Coating

TECHNICAL DATA

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

Cavity	T-24A
Series	4
Capacity	120 gpm
Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	20 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Operating Characteristic	Standard
Reseat	>85% of setting
Valve Hex Size	1 5/8 in.
Valve Installation Torque	350 - 375 lbf ft
Adjustment Screw Internal Hex Size	5/32 in.
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006
Model Weight	3.53 lb.

CONFIGURATION OPTIONS

Model Code Example: CWIALHV

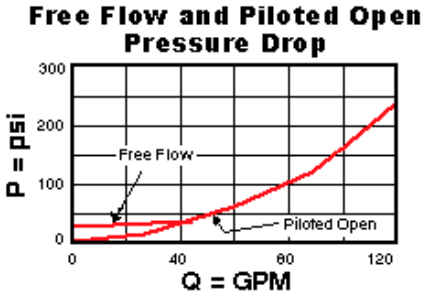
CONTROL (L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (V)	MATERIAL/COATING
L Standard Screw Adjustment	**H** 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting	**V** Viton	Standard Material/Coating
C Tamper Resistant - Factory Set	**I** 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar)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

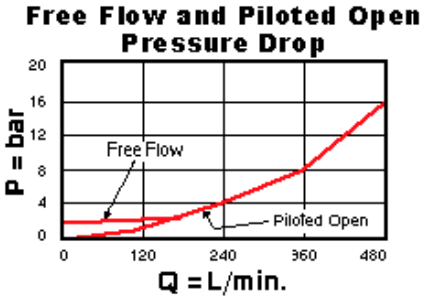
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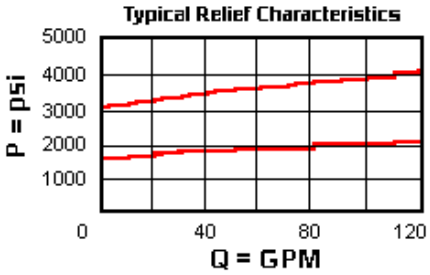
TECHNICAL FEATURES

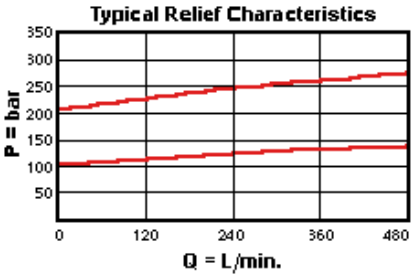
- Counterbalance valves should be set at least 1.3 times the maximum load induced pressure.
- Turn adjustment clockwise to decrease setting and release load.
- Full clockwise setting is 200 psi (14 bar).
- All 4-port counterbalance, load control, and pilot-to-open check cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size).
- Reseat exceeds 85% of set pressure when the valve is standard set. Settings lower than the standard set pressure may result in lower reseat percentages.
- Pressure at port 4 is added to the effective relief setting at a rate of 1 plus the pilot ratio times the pressure.
- Sun counterbalance cartridges can be installed directly into a cavity machined in an actuator housing for added protection and improved stiffness in the circuit.
- This valve has positive seals between all ports.
- With vented valves, a lower pilot ratio may be required to achieve machine stability compared to non-vented valves.
- 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









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