



Direct-acting relief cartridges are normally closed, pressure-limiting valves used to protect hydraulic components from pressure transients. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to limit the pressure rise. These valves are smooth and quiet, essentially zero leak, dirt tolerant, immune to silting and are very fast.

TECHNICAL DATA

Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	5000 psi
Response Time - Typical	2 ms
Maximum Valve Leakage at Reseat	10 drops/min.
Reseat	>85% of setting
Adjustment - Number of Clockwise Turns to Increase Setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990-162-007
Seal kit - Cartridge	Polyurethane: 990-162-002
Seal kit - Cartridge	Viton: 990-162-006

NOTES U.S. Patent #4,742,846; European Patent Pending

CONFIGURATION OPTIONS

Model Code Example: RDBALAN

CONTROL	(L) ADJUSTMENT RANGE	(A) SEAL MATERIAL	(N) MATERIAL/COATING
L Standard Screw Adjustment	A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting	N Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting	E EPDM	/AP Stainless Steel, Passivated
K Handknob	B 300 - 1500 psi (20 - 105 bar), 1000 psi (70 bar) Standard Setting	V Viton	/LH Mild Steel, Zinc-Nickel
	C 1000 - 6000 psi (70 - 420 bar), 1000 psi (70 bar) Standard Setting		
	D 200 - 800 psi (14 - 55 bar), 400 psi (28 bar) Standard Setting		
	E 150 - 400 psi (10 - 28 bar), 200 psi (14 bar) Standard Setting		
	S 50 - 200 psi (3.5 - 14 bar), 100 psi (7 bar) Standard Setting		

TECHNICAL FEATURES

- All 2-port relief cartridges (except pilot reliefs) are physically and functionally interchangeable (same flow path, same cavity for a given frame size).

- Will accept maximum pressure at port 2; suitable for use in cross port relief circuits.
- The seals on the adjust screw are exposed to system pressure which means this valve can only be adjusted when the pressure is removed. The setting procedure is; check the setting, remove the pressure, adjust the valve, check the new setting.
- Valve is relatively insensitive to varying oil temperatures and oil borne contamination.
- Select a spring range where the desired relief setting is approximately mid-range to high between the minimum and maximum pressure to ensure maximum valve repeatability.
- Suitable for use in load holding applications.
- Back pressure on the tank port (port 2) is directly additive to the valve setting at a 1:1 ratio.
- Cartridges with EPDM seals are for use in systems with phosphate ester fluids. Exposure to petroleum based fluids, greases and lubricants will damage the seals.
- 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

