



Pilot-operated, pressure reducing/relieving valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3).

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

Cavity	T-163A
Series	0
Capacity	5 gpm
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in ³ /min.
Factory Pressure Settings Established at	blocked control port (dead headed)
Adjustment - No. of CW Turns from Min. to Max. setting	5
Valve Hex Size	3/4 in.
Valve Installation Torque	20 - 25 lbf ft
Adjustment Screw Internal Hex Size	5/32 in.
Locknut Hex Size	1/2 in.
Locknut Torque	80 - 90 lbf in.
Model Weight	0.29 lb.
Seal kit - Cartridge	Buna: 990-163-007
Seal kit - Cartridge	EPDM: 990-163-014
Seal kit - Cartridge	Polyurethane: 990-163-002
Seal kit - Cartridge	Viton: 990-163-006

NOTES: • Maximum pressure differentials for spring ranges: A and B are 3000 psi (210 bar) N and Q are 2000 psi (140 bar) W is 5000 psi (350 bar) inlet pressure

OPTION SELECTION EXAMPLE: PPBBLAN

CONTROL	(L)	ADJUSTMENT RANGE	(A)	SEAL MATERIAL	(N)	MATERIAL/COATING
L	Standard Screw Adjustment	A	75 - 3000 psi (5 - 210 bar), 200 psi (14 bar) Standard Setting	N	Buna-N	Standard Material/Coating
C	Tamper Resistant - Factory Set	B	75 - 1500 psi (5 - 105 bar), 200 psi (14 bar) Standard Setting	E	EPDM	/AP Stainless Steel, Passivated
K	Handknob	N	75 - 800 psi (5 - 55 bar), 200 psi (14 bar) Standard Setting	V	Viton	/LH Mild Steel, Zinc-Nickel
		Q	75 - 400 psi (5 - 28 bar), 200 psi (14 bar) Standard Setting			
		W	100 - 4500 psi (7 - 315 bar), 200 psi (14 bar) Standard Setting			

TECHNICAL FEATURES

- All three-port pressure reducing and reducing/relieving cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size). When considering mounting configurations, it is sometimes recommended that a full capacity return line (port 3) be used with reducing/relieving cartridges.
- Full reverse flow from reduced pressure (port 1) to inlet (port 2) may cause the main spool to close. If reverse free flow is required in the circuit, consider adding a separate check valve to the circuit.
- If pilot flow consumption is critical, consider using direct acting reducing/relieving valves.
- Recommended maximum inlet pressure is determined by the adjustment range. Ranges D, E, N, and Q are tested with a 2000 psi (140 bar) maximum differential between inlet and reduced pressure. Ranges A, B, and H are tested with a 3000 psi (210 bar) maximum differential between inlet and reduced pressure. Ranges C and W are tested with 5000 psi (350 bar) of inlet pressure.
- Pilot operated valves exhibit exceptionally flat pressure/flow characteristics, are very stable and have low hysteresis.
- Pressure at port 3 is directly additive to the valve setting at a 1:1 ratio and should not exceed 5000 psi (350 bar).
- Pilot operated reducing, reducing/relieving valves by nature are not fast acting valves. For superior dynamic response, consider direct acting valves.
- Cartridges configured 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

