



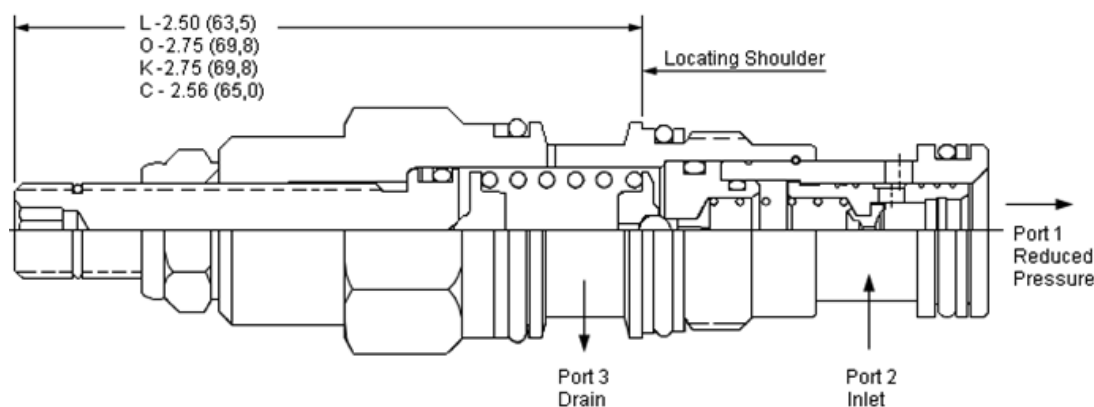
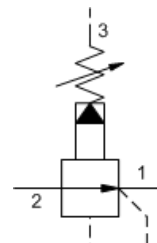
Pilot operated, pressure reducing valve

Capacity:
10 gpm (40 L/min.)

Model:
PBDB

Product Description

Pilot-operated, pressure reducing valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1, allowing circuits with multiple pressure requirements to be operated using a single pump.



Technical Features

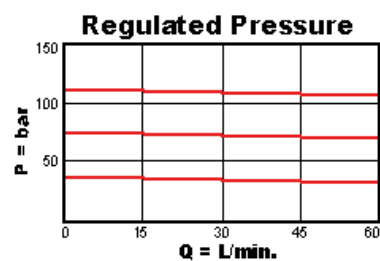
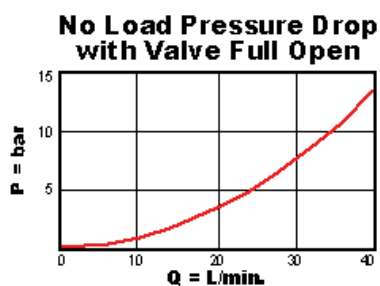
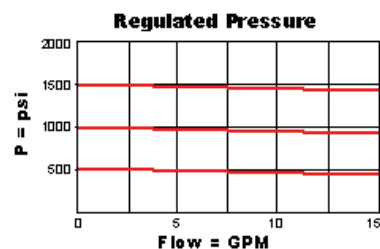
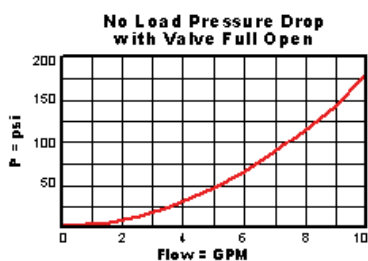
- Full reverse flow from reduced pressure (port 1) to inlet (port 2) may cause the main spool to close. If reverse free flow is required in the circuit, consider adding a separate check valve to the circuit.
- If pilot flow consumption is critical, consider using direct acting reducing/relieving valves.
- Main stage orifice is protected by a 150 micron stainless steel screen.
- 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.
- 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.
- Corrosion resistant cartridge valves are intended for use in corrosive environments and are identified by the model code suffix /AP (see Option Selection below). External parts are made from stainless steel with titanium or brass components, where applicable. Internal parts are made from carbon steel leaded alloy, the same as standard valves. For further details, please see the Materials of Construction page.
- 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.

Special 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

Technical Data

	U.S. Units	Metric Units
Cavity	T-11A	
Capacity	10 gpm	40 L/min.
Control Pilot Flow	7 - 10 in ³ /min.	0,11 - 0,16 L/min.
Factory Pressure Settings Established at	blocked control port (dead headed)	
Maximum Operating Pressure	5000 psi	350 bar
Series (from Cavity)	Series 1	
Adjustment - Number of Clockwise Turns to Increase Setting	5	
Valve Hex Size	7/8 in.	22,2 mm
Valve Installation Torque	30 - 35 lbf ft	40 - 50 Nm
Adjustment Screw Internal Hex Size	5/32 in.	4 mm
Adjustment Locknut/Cap Hex Size	9/16 in.	15 mm
Adjustment Nut Torque	80 - 90 lbf in.	9 - 10 Nm
Seal Kits - Cartridge	Buna: 990-011-007	
Seal Kits - Cartridge	Viton: 990-011-006	
Model Weight	0.35 lb.	0.16 kg.



PBDB-LAN

Control	Adjustment Range	Seal Material	Material/Coating Modifier
Preferred Options	Preferred Options	Preferred Options	Preferred Options
L Standard Screw Adjustment Standard Options	A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting	N Buna-N Standard Options	No modifier (standard material with no special coating) Special Options
C* Tamper Resistant - Factory Set	W 150 - 4500 psi (10,5 - 315 bar), 200 psi (14 bar) Standard Setting	V Viton	/ AP Stainless Steel, Passivated
F Hex Head Screw with Locknut	Standard Options		Control:C
K Handknob	B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting		Control:L
	N 60 - 800 psi (4 - 55 bar), 200 psi (14 bar) Standard Setting		Our stainless product line is growing! If you are interested in a stainless option for this model which is not shown please contact Sun.
	Q 60 - 400 psi (4 - 28 bar), 200 psi (14 bar) Standard Setting		

Additional Options

Control

Adjustment Range

Seal Material

J	Capped Screw Adjustment	C	150 - 6000 psi (10,5 - 420 bar), 200 psi (14 bar) Standard Setting
M	Capped Screw Adjustment with Lockwire Holes	D	25 - 800 psi (1,7 - 55 bar), 200 psi (14 bar) Standard Setting
O	Handknob with Panel Mount	E	25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting
Q *	Capped and Lockwired	G	60 - 3000 psi (4 - 210 bar), 200 psi (14 bar) Standard Setting
W *	Max. Setting Limiter	K	75 - 1500 psi (5 - 105 bar), 200 psi (14 bar) Standard Setting
		P	40 - 400 psi (2,8 - 28 bar), 200 psi (14 bar) Standard Setting

When the modifier is /AP, the control must be C or L

* Special Setting required, specify at time of order
Customer specified setting stamped on hex.

Related Models
[PBDB8](#)