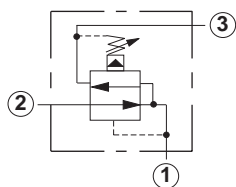


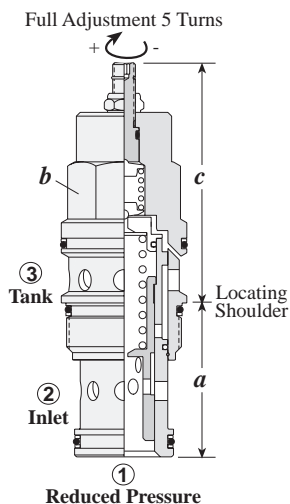
Reducing/Relieving Valves

PILOT OPERATED REDUCING/RELIEVING



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (lb. ft.)
			a	b	c			
					L	C	K	
10 GPM	PPDB – LAN	T - 11A	1.38	7/8"	2.50	2.56	2.75	30/35
20 GPM	PPFB – LAN	T - 2A	1.38	1 1/8"	2.81	2.88	3.06	45/50
40 GPM	PPHB – LAN	T - 17A	1.81	1 1/4"	3.28	3.31	3.53	150/160
80 GPM	PPJB – LAN	T - 19A	2.50	1 5/8"	3.94	4.09	4.19	350/375

OPTION ORDERING INFORMATION



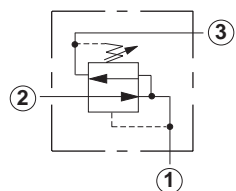
PP ★ B – ★ ★ ★

Nominal Capacity	Base Price	Control**	Adjustment Range	Seal
D 10 GPM		L Standard Screw	A 100 - 3000 psi	N Buna-N
F 20 GPM		C Tamper Resistant	W 150 - 4500 psi	V Viton
H 40 GPM		K Handknob	B 50 - 1500 psi	
J 80 GPM			N 60 - 800 psi	
			Q 60 - 400 psi	

Adjustment Range Options:
 All are standard set at 200 psi.
 Maximum pressure differentials for spring ranges:
 A and B are 3000 psi.
 N and Q are 2000 psi.
 W is 5000 psi inlet pressure.
Customer may specify pressure setting.

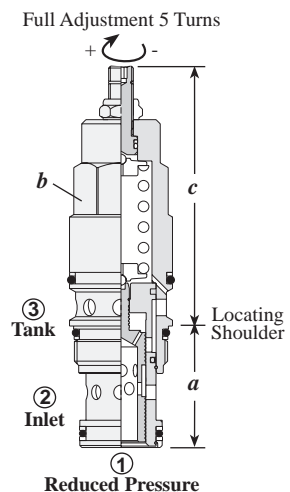
*** See page 244 for information on Control Options*

DIRECT ACTING REDUCING/RELIEVING



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (lb. ft.)
			a	b	c			
					L	C	K	
10 GPM	PRDB – LAN	T - 11A	1.38	7/8"	3.09	3.16	3.34	30/35
20 GPM	PRFB – LAN	T - 2A	1.38	1 1/8"	3.47	3.53	3.75	45/50
40 GPM	PRHB – LAN	T - 17A	1.81	1 1/4"	3.94	4.00	4.19	150/160
80 GPM	PRJB – LAN	T - 19A	2.50	1 5/8"	4.87	5.03	5.13	350/375

OPTION ORDERING INFORMATION



PR ★ B – ★ ★ ★

Nominal Capacity	Base Price	Control**	Adjustment Range	Seal
D 10 GPM		L Standard Screw	A 500 - 3000 psi	N Buna-N
F 20 GPM		C Tamper Resistant	W 750 - 4500 psi	V Viton
H 40 GPM		K Handknob	B 50 - 1500 psi	
J 80 GPM			D 20 - 800 psi	
			E 20 - 400 psi	
			S 20 - 200 psi	

Adjustment Range Options:
PRDB Only:
 A, W are standard set at 1000 psi.
 B, D, E, S are standard set at 200 psi.
PRFB, PRHB, PRJB:
 A, W are standard set at 1000 psi.
 B is standard set at 500 psi.
 D is standard set at 400 psi.
 E is standard set at 200 psi.
 S is standard set at 100 psi.

*** See page 244 for information on Control Options*

Maximum Inlet Pressure: 5000 psi
Customer may specify pressure setting.

TECHNICAL TIPS / PERFORMANCE CURVES

Reducing/Relieving Valves, Pilot Operated

Applications

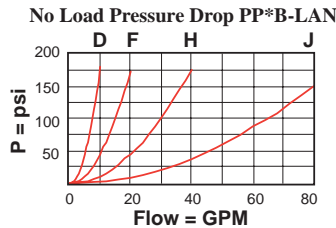
Pilot operated reducing/relieving cartridges may be used interchangeably with reducing valve, however, they have one additional function; they will maintain a constant pressure at port 1 during reverse flow conditions to port three.

Design Concepts and Features

- Low hysteresis for accurate pressure regulation.
- Minimal dead-band provides low transition pressure between reducing and relieving modes.
- Low pilot control flow, 7 to 20 in.³/min. dependent on frame size.
- Pressure at port 3 is directly additive to valve setting and should not exceed 3000 psi.

Note: Maximum pressure differentials, inlet to outlet, see adjustment ranges on page 42.

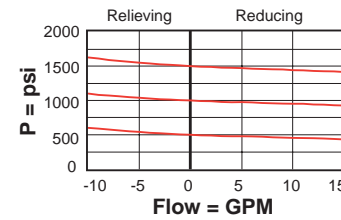
Note: Reducing/relieving valves require a body with a high capacity third port.



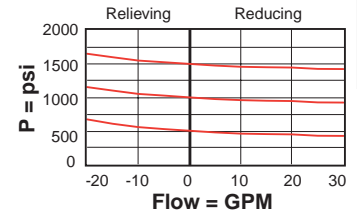
Performance Curves

Regulated Pressure

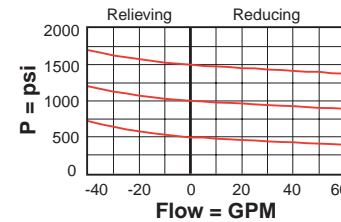
PPDB-L*N



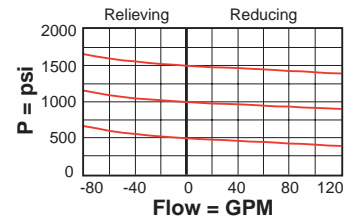
PPFB-L*N



PPHB-L*N



PPJB-L*N



Reducing/Relieving Valves, Direct Acting

Applications

Direct acting reducing/relieving cartridges may be used interchangeably with pilot operated units. These valves offer low internal leakage and increased reliability in contaminated systems, this makes them ideal choices in accumulator and brake circuits. They exhibit lower overshoot characteristics than pilot operated valves and should therefore be considered in clamping circuits.

Design Concepts and Features

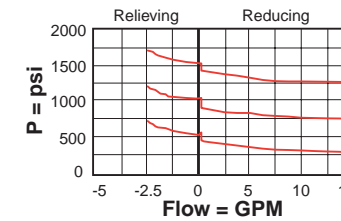
- Damped differential construction for stable operation.
- Low internal leakage in both no flow and control flow modes; less than 2 in.³/min.
- Multiple spring ranges for optimum control

Note: Maximum pressure differentials, inlet to outlet, see adjustment ranges on page 42.

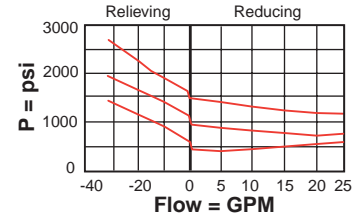
Performance Curves

Regulated Pressure

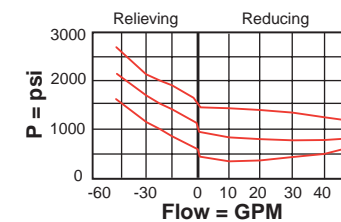
PRDB-L*N



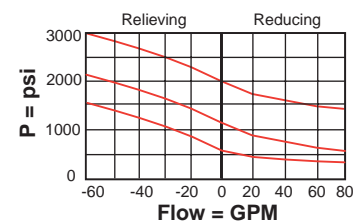
PRFB-L*N



PRHB-L*N



PRJB-L*N



General Application Requirements

- Operating Temperature Range: Buna-N seals -50° F to 200° F, Viton seals 0° F to 250° F.
- Viscosity Range: 60-3000 SUS.
- Fluid Contamination Level: ISO 4406 18/15 or better; Recommend $\beta_{10} \geq 75$ to achieve ISO 18/15 or better in most systems.
- Factory Pressure Setting for cartridge is established at zero flow rate.