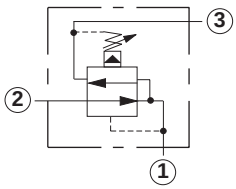
Reducing/Relieving Valves

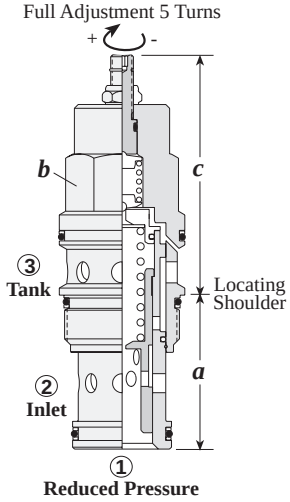
PILOT OPERATED REDUCING/RELIEVING



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions a	b	c L	c C	c K	Installation Torque (Nm)
40 L/min.	**PPDB – LAN**	T - 11A	34,9	22,2	64	66	70	40/50
80 L/min.	**PPFB – LAN**	T - 2A	34,9	28,6	72	74	78	60/70
160 L/min.	**PPHB – LAN**	T - 17A	46	31,8	89	86	90	200/215
320 L/min.	**PPJB – LAN**	T - 19A	63,5	41,3	100	104	107	465/500

OPTION ORDERING INFORMATION

Full Adjustment 5 Turns



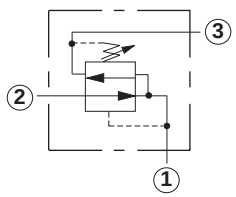
PP ✶ B – ✶ ✶ ✶

Nominal Capacity	Control**	Adjustment Range	Seal
D 40 L/min.	**L** Standard Screw	**A** 7 - 210 bar	**N** Buna-N
F 80 L/min.	**C** Tamper Resistant	**W** 10 - 315 bar	**V** Viton
H 160 L/min.	**K** Handknob	**B** 3,5 - 105 bar	
J 320 L/min.		**N** 4 - 55 bar	
		Q 4 - 25 bar	

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

Adjustment Range Options:
All are standard set at 14 bar.
Maximum pressure differentials for spring ranges:
A and B are 210 bar.
N and Q are 140 bar.
W is 350 bar inlet pressure.
Customer may specify pressure setting.

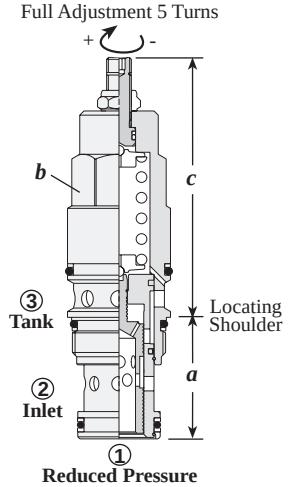
DIRECT ACTING REDUCING/RELIEVING



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions a	b	c L	c C	c K	Installation Torque (Nm)
40 L/min.	**PRDB – LAN**	T - 11A	34,9	22,2	79	81	85	40/50
80 L/min.	**PRFB – LAN**	T - 2A	34,9	28,6	89	91	96	60/70
160 L/min.	**PRHB – LAN**	T - 17A	46	31,8	100	102	107	200/215
320 L/min.	**PRJB – LAN**	T - 19A	63,5	41,11	123,8	127,8	130,2	465/500

OPTION ORDERING INFORMATION

Full Adjustment 5 Turns



PR ✶ B – ✶ ✶ ✶

Nominal Capacity	Control**	Adjustment Range Available for PRDB only	Seal
D 40 L/min.	**L** Standard Screw	**A** 35 - 210 bar	**N** Buna-N
F 80 L/min.	**C** Tamper Resistant	**W** 50 - 315 bar	**V** Viton
H 160 L/min.	**K** Handknob	**B** 3,5 - 105 bar	
J 320 L/min.		**D** 1,5 - 55 bar	
		E 1,5 - 25 bar	
		S 1,5 - 14 bar	

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

Adjustment Range Options:
PRDB Only:
A, W are standard set at 70 bar.
B, D, E, S are standard set at 14 bar.
PRFB, PRHB, PRJB:
A, W are standard set at 70 bar.
B is standard set at 38 bar.
D is standard set at 25 bar.
E is standard set at 14 bar.
S is standard set at 7 bar.

Available for PRFB, PRHB, PRJB
A 50-210 bar
W 70 - 315 bar
B 20-105 bar
D 14-55 bar
E 7-25 bar
S 3,5-14 bar

Maximum Inlet Pressure: 350 bar
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.

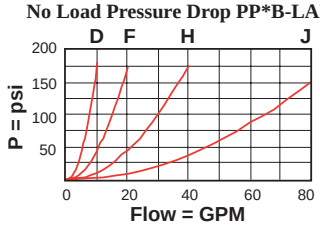
Design Concepts and Features

- Low hysteresis for accurate pressure regulation.
- Minimal dead-band provides low transition pressure between reducing and relieving modes.
- Low pilot control flow, 0,15 to 0,35 L/min. dependent on frame size.
- Pressure at port 3 is directly additive to valve setting and should not exceed 210 bar.

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.

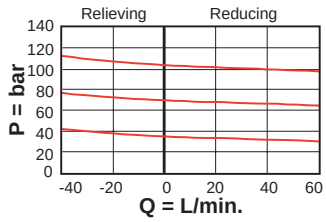
No Load Pressure Drop PP*B-LAN



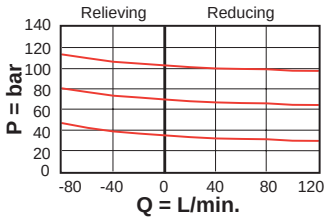
Performance Curves

Regulated Pressure

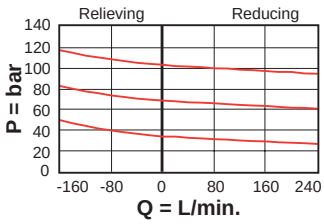
PPDB-L*N



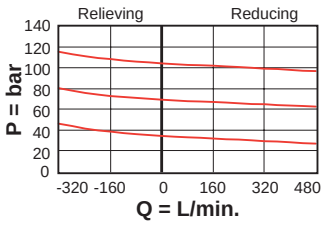
PPFB-L*N



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

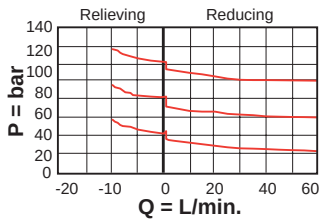
- Damped differential construction for stable operation.
- Low internal leakage in both no flow and control flow modes; 30 to 80 cc/min @ 210 bar.
- Multiple spring ranges for optimum control

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

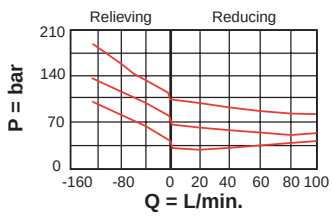
Performance Curves

Regulated Pressure

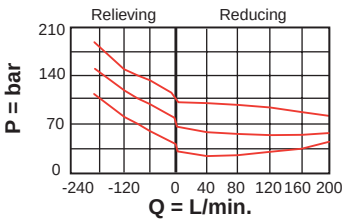
PRDB-L*N



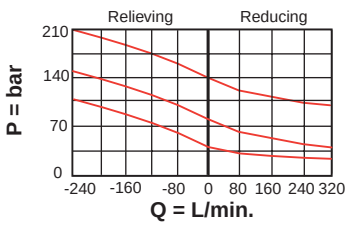
PRFB-L*N



PRHB-L*N



PRJB-L*N



General Application Requirements

- Operating Temperature Range: Buna-N seals -45° C to 90° C, Viton seals -15° C to 120° C.
- Viscosity Range: 10-600 centistokes.
- 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.