

Pressure Control Cartridges

Powered by Sun **QuickPrint**, your on-demand, customized catalogue solution.

This information is subject to change without notice. Visit www.sunhydraulics.com for complete and up to date information.



RPEI	Electro-proportional relief valve - high pressure setting with no	1
RVCK	FLeX Series 2-stage, solenoid-operated adjustable relief valve, normally vented	2
RVCL	FLeX Series 2-stage, solenoid-operated adjustable relief valve, energize to vent	3
RVCM	FLeX Series 2-stage, solenoid-operated adjustable relief valve, energize to block	4
RVCN	FLeX Series 2-stage, solenoid-operated adjustable relief valve, normally blocked	5
RPCC	Pilot-operated, balanced piston reliefvalve	6
RPEC	Pilot-operated, balanced piston reliefvalve	7
RPGC	Pilot-operated, balanced piston reliefvalve	8
RPIC	Pilot-operated, balanced piston reliefvalve	9
RPKC	Pilot-operated, balanced piston reliefvalve	11
RDBA	Direct-acting reliefvalve	12
RDDA	Direct-acting reliefvalve	13
RDFA	Direct-acting reliefvalve	14
RDHA	Direct-acting reliefvalve	15
RDJA	Direct-acting reliefvalve	16
RBDA	Bi-directional, direct-acting relief valve	17
RBFA	Bi-directional direct-acting relief valve	18
RGFA	Low-pressure-range, direct-acting relief valve	19
RDDA3	Non-adjustable direct-acting reliefvalve	20
RDFA3	Non-adjustable direct-acting reliefvalve	21
RDDT	Direct-acting relief valve, CE marked	22



RPEE	Fast-acting, pilot-operated, balanced piston relief valve	23
RPGE	Fast-acting, pilot-operated, balanced piston relief valve	24
RPIE	Fast-acting, pilot-operated, balanced piston relief valve	25
RPKE	Fast-acting, pilot-operated, balanced piston relief valve	26
RPES	Pilot-operated, balanced poppet reliefvalve	27
RPGS	Pilot-operated, balanced poppet reliefvalve	28
RPIS	Pilot-operated, balanced poppet reliefvalve	29
RPKS	Pilot-operated, balanced poppet reliefvalve	30
RPET	Anti-Shock, pilot-operated, balanced poppet relief valve	31
RPGT	Anti-Shock, pilot-operated, balanced poppet relief valve	32
RPIT	Anti-Shock, pilot-operated, balanced poppet relief valve	33
RPKT	Anti-Shock, pilot-operated, balanced poppet relief valve	34
RBAA	Direct-acting relief valve - pilot capacity	35
RBAC	Direct-acting relief valve - pilot	36
RBAE	Direct-acting relief valve - pilot	37
RQCB	Kick-down, pilot-operated, balanced piston relief valve	38
RQEB	Kick-down, pilot-operated, balanced piston relief valve	39
RQGB	Kick-down, pilot-operated, balanced piston relief valve	40
RQIB	Kick-down, pilot-operated, balanced piston relief valve	41
RQKB	Kick-down, pilot-operated, balanced piston relief valve	42
RPGD	Air-controlled, pilot-operated, balanced piston relief valve	43



RPID	Air-controlled, pilot-operated, balanced piston relief valve	44
RPKD	Air-controlled, pilot-operated, balanced piston relief valve	45
RBAB	Air-controlled, direct-acting relief valve - pilot capacity	46
RBAR	Air-controlled, direct-acting relief valve - pilot capacity	47
RVBA	Ventable, pilot-operated, balanced piston relief valve	48
RVCA	Ventable, pilot-operated, balanced piston relief valve	49
RVEA	Ventable, pilot-operated, balanced piston relief valve	50
RVGA	Ventable, pilot-operated, balanced piston relief valve	51
RVIA	Ventable, pilot-operated, balanced piston relief valve	52
RVCS	Ventable, pilot-operated, balanced poppet reliefvalve	53
RVES	Ventable, pilot-operated, balanced poppet reliefvalve	54
RVGS	Ventable, pilot-operated, balanced poppet reliefvalve	55
RVIS	Ventable, pilot-operated, balanced poppet reliefvalve	56
RVET	Anti-Shock, ventable, pilot-operated, balanced poppet reliefvalve	57
RVGT	Anti-Shock, ventable, pilot-operated, balanced poppet reliefvalve	58
RVIT	Anti-Shock, ventable, pilot-operated, balanced poppet reliefvalve	59
RBAD	Dual, direct-acting relief valve - pilot capacity	60
HRDA	Direct-acting relief valve - before	61
HRDB	Direct-acting relief valve - after check	62
HVCA	Ventable, pilot-operated, balanced piston relief valve - before	63
HVCA8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity - before check	64



RVCD	Ventable, pilot-operated, balanced piston relief valve with drain to port69
RVED	Ventable, pilot-operated, balanced piston relief valve with drain to port69
RVGD	Ventable, pilot-operated, balanced piston relief valve with drain to port67
RVID	Ventable, pilot-operated, balanced piston relief valve with drain to port64
RPEC8	Pilot-operated, balanced piston relief main stage with integral T-8A control69 cavity
RPGC8	Pilot-operated, balanced piston relief main stage with integral T-8A control
RPIC8	Pilot-operated, balanced piston relief main stage with integral T-8A control
RPKC8	Pilot-operated, balanced piston relief main stage with integral T-8A control
RPES8	Pilot-operated, balanced poppet relief main stage with integral T-8A control
RPGS8	Pilot-operated, balanced poppet relief main stage with integral T-8A control
RPIS8	Pilot-operated, balanced poppet relief main stage with integral T-8A control
RPKS8	Pilot-operated, balanced poppet relief main stage with integral T-8A control
RVCD8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control
RVED8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control
RVGD8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control
RVID8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control86 cavity and drain to port 4
RBAP	Electro-proportional relief valve - pilot
RBAN	Electro-proportional relief valve - pilot capacity, high pressure setting with no84 command
PBBB	Pilot-operated, pressure reducing89 valve
PBDB	Pilot-operated, pressure reducing
PBFB	Pilot-operated, pressure reducing8 valve



PBHB	Pilot-operated, pressure reducingvalve	88
PBJB	Pilot-operated, pressure reducingvalve	89
PBFC	Air-controlled, pilot-operated, pressure reducingvalve	90
PBHC	Air-controlled, pilot-operated, pressure reducingvalve	91
PBJC	Air-controlled, pilot-operated, pressure reducingvalve	92
PRDR	Direct-acting, pressure reducing valve	93
PRFR	Direct-acting, pressure reducing valve	94
PRHR	Direct-acting, pressure reducing valve	95
PRJR	Direct-acting, pressure reducing valve	96
PBDB8	Pilot-operated, pressure reducing main stage with integral T-8A control cavity	97
PBFB8	Pilot-operated, pressure reducing main stage with integral T-8A control cavity	98
PBHB8	Pilot-operated, pressure reducing main stage with integral T-8A control cavity	99
PBJB8	Pilot-operated, pressure reducing main stage with integral T-8A control cavity	100
PRDF	Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition (740 Series)	101
PRDG	Electro-proportional, direct-acting, pressure reducing/relieving valve (740	102
PPBB	Pilot-operated, pressure reducing/relieving valve	103
PPDB	Pilot-operated, pressure reducing/relieving valve	104
PPDF	Pilot-operated, pressure reducing/relieving valve with drilled piston orifice	105
PPFB	Pilot-operated, pressure reducing/relieving valve	106
PPFF	Pilot-operated, pressure reducing/relieving valve with drilled piston orifice	107
PPHB	Pilot-operated, pressure reducing/relieving valve	108



PPHF	Pilot-operated, pressure reducing/relieving valve with drilled piston orifice	109
PPJB	Pilot-operated, pressure reducing/relievingvalve	110
PPJF	Pilot-operated, pressure reducing/relieving valve with drilled piston orifice	111
PPFC	Air-controlled, pilot-operated, pressure reducing/relieving valve	112
PPHC	Air-controlled, pilot-operated, pressure reducing/relieving valve	113
PPJC	Air-controlled, pilot-operated, pressure reducing/relieving valve	114
PRDB	Direct-acting, pressure reducing/relievingvalve	115
PRFB	Direct-acting, pressure reducing/relievingvalve	116
PRHB	Direct-acting, pressure reducing/relievingvalve	117
PRJB	Direct-acting, pressure reducing/relievingvalve	118
PRBC	Direct-acting, pressure reducing/relieving valve with open transition	119
PRDC	Direct-acting, pressure reducing/relieving valve with open transition	120
PVDA	Pilot-operated, pressure reducing/relieving valve with drain to port	121
PVFA	Pilot-operated, pressure reducing/relieving valve with drain to port	122
PVHA	Pilot-operated, pressure reducing/relieving valve with drain to port	123
PVJA	Pilot-operated, pressure reducing/relieving valve with drain to port	124
PVDB	Ventable, pilot-operated, pressure reducing/relieving valve	125
PVFB	Ventable, pilot-operated, pressure reducing/relieving valve	126
PVHB	Ventable, pilot-operated, pressure reducing/relievingvalve	127
PVJB	Ventable, pilot-operated, pressure reducing/relieving valve	128
PSDB	Direct-acting, pressure reducing/relieving valve with drain to port	129



PSFB	Direct-acting, pressure reducing/relieving valve with drain to port4	130
PSHB	Direct-acting, pressure reducing/relieving valve with drain to port4	131
PSDT	Direct-acting, pressure reducing/relieving main stage piloted from port4	132
PSFT	Direct-acting, pressure reducing/relieving main stage piloted from port 4	133
PSHT	Direct-acting, pressure reducing/relieving main stage piloted from port 4	134
PSJT	Direct-acting, pressure reducing/relieving main stage piloted from port 4	135
PRDP	Electro-proportional, direct-acting, pressure reducing/relievingvalve	137
PRDN	Electro-proportional, direct-acting, pressure reducing/relieving valve, high pressure setting with no command	138
PRDL	Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition	140
PRDM	Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition - high pressure setting with no command	141
PPDB8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity	142
PPDF8	Pilot-operated, pressure reducing/relieving main stage with drilled piston orifice and integral T-8A control cavity	143
PPFB8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity	144
PPFF8	Pilot-operated, pressure reducing/relieving main stage with drilled piston orifice and integral T-8A control cavity	145
PPHB8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity	146
PPHF8	Pilot-operated, pressure reducing/relieving main stage with drilled piston orifice and integral T-8A control cavity	147
PPJB8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity	148
PPJF8	Pilot-operated, pressure reducing/relieving main stage with drilled piston orifice and integral T-8A control cavity	149
PPDL8	Pilot-operated, pressure reducing/relieving main stage with open transition and integral T-8A control cavity	150
PVDA8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity and drain to port 4	151
PVFA8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity and drain to port 4	152



PVHA8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity and drain to port 4	153
PVHL8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity and drain to port 4	154
PVJA8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity and drain to port 4	155
PSDP	Electro-proportional, direct-acting, pressure reducing/relieving valve with drain to $\boldsymbol{\mu}$	oort156
PSDL	Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition and drain to port 4	157
RSBC	Pilot-operated, balanced piston sequencevalve	158
RSDC	Pilot-operated, balanced piston sequencevalve	159
RSFC	Pilot-operated, balanced piston sequence valve	160
RSHC	Pilot-operated, balanced piston sequence valve	161
RSJC	Pilot-operated, balanced piston sequence valve	162
RSDS	Pilot-operated, balanced poppet sequencevalve	163
RSFS	Pilot-operated, balanced poppet sequencevalve	164
RSHS	Pilot-operated, balanced poppet sequencevalve	165
RSJS	Pilot-operated, balanced poppet sequencevalve	166
SCCA	Direct-acting sequence valve with reverse flow	167
SCEA	Direct-acting sequence valve with reverse flow	168
SCGA	Direct-acting sequence valve with reverse flow	169
SCIA	Direct-acting sequence valve with reverse flow	170
SCEB	Atmospherically referenced, direct-acting sequence valve with reverse flow check	171
SXCB	Atmospherically referenced, direct-acting sequence valve without reverse flow check	172
SXCA	Direct-acting sequence valve without reverse flow check	173



SXEA	Direct-acting sequence valve without reverse flow	174
SQBB	Kick-down, pilot-operated, balanced piston sequence valve	175
SQDB	Kick-down, pilot-operated, balanced piston sequence valve	176
SQFB	Kick-down, pilot-operated, balanced piston sequence valve	177
SQHB	Kick-down, pilot-operated, balanced piston sequencevalve	178
SQJB	Kick-down, pilot-operated, balanced piston sequencevalve	179
RSFE	Air-controlled, pilot-operated, balanced piston sequencevalve	180
RSHE	Air-controlled, pilot-operated, balanced piston sequencevalve	181
RSJE	Air-controlled, pilot-operated, balanced piston sequencevalve	182
RSDC8	Pilot-operated, balanced piston sequence main stage with integral T-8A control cavity	183
RSFC8	Pilot-operated, balanced piston sequence main stage with integral T-8A control cavity	184
RSHC8	Pilot-operated, balanced piston sequence main stage with integral T-8A control cavity	185
RSJC8	Pilot-operated, balanced piston sequence main stage with integral T-8A control cavity	186
RSDS8	Pilot-operated, balanced poppet sequence main stage with integral T-8A control cavity	187
RSFS8	Pilot-operated, balanced poppet sequence main stage with integral T-8A control cavity	188
RSHS8	Pilot-operated, balanced poppet sequence main stage with integral T-8A control cavity	189
RSJS8	Pilot-operated, balanced poppet sequence main stage with integral T-8A control cavity	190
PBDF	Pilot-operated, pressure reducing valve with drilled piston orifice	191
PBDF8	Pilot-operated, pressure reducing main stage with drilled piston orifice and integral T-8A control cavity	192
PBFF	Pilot-operated, pressure reducing valve with drilled piston orifice	193
PBFF8	Pilot-operated, pressure reducing main stage with drilled piston orifice and integral T-8A control cavity	194



PBHF	Pilot-operated, pressure reducing valve with drilled piston
PBHF8	Pilot-operated, pressure reducing main stage with drilled piston orifice and integral T196 8A control cavity
PBJF	Pilot-operated, pressure reducing valve with drilled piston
PBJF8	Pilot-operated, pressure reducing main stage with drilled piston orifice and integral T198 8A control cavity
PRBB	Direct-acting, pressure reducing/relieving
PRBR	Direct-acting, pressure reducing
PRTS	Electro-proportional, direct-acting pressure reducing/relieving valve with filter screen,201 3000 psi (210 bar) - common cavity
PVDC8	Pilot-operated, pressure reducing/relieving main stage with integral T-8A control202 cavity, drilled piston orifice, and drain to port 4
PVDD	Ventable, pilot-operated, pressure reducing/relieving valve with drilled piston203 orifice
PVFD	Ventable, pilot-operated, pressure reducing/relieving valve with drilled piston204 orifice
PVHD	Ventable, pilot-operated, pressure reducing/relieving valve with drilled piston205 orifice
PVJD	Ventable, pilot-operated, pressure reducing/relieving valve with drilled piston206 orifice
RDUA	Direct-acting relief valve, 6000 psi (420 bar) - common
SDFT	Anti-Shock, pilot-operated, balanced poppet sequence valve with drain to port208
SDHT	Anti-Shock, pilot-operated, balanced poppet sequence valve with drain to port209
SDJT	Anti-Shock, pilot-operated, balanced poppet sequence valve with drain to port210



Cavity Information

Series	Ports	Cavities
Series Z Cartridges 3/8-24 UNF Cartridge Thread 5 mm Valve Hex Size 11 - 14 Nm Valve Installation Torque	3-Port	T-382A
Series P Cartridges M16 Cartridge Thread 22,2 mm Valve Hex Size 27 - 33 Nm Valve Installation Torque	2-Port 2-Port (Deep) 3-Port	T-8A T-8DP T-9A
Series 0 Cartridges M16 Cartridge Thread 19,1 mm Valve Hex Size 25,4 mm Valve Hex Size 27 - 33 Nm Valve Installation Torque	2-Port 2-Port (Deep) 3-Port 3-Port 4-Port	T-162A T-162DP T-150A T-163A T-30A
Series 0C Cartridges 8/4-16 UNF Cartridge Thread 22,2 mm Valve Hex Size 19-22 lbf ft Valve Installation Torque	4-Port (Common)	SC-08-04
Series 1 Cartridges M20 Cartridge Thread 22,2 mm Valve Hex Size 41 - 47 Nm Valve Installation Torque	2-Port 2-Port 3-Port 4-Port 4-Port 6-Port	T-10A T-13A T-11A T-21A T-31A T-61A
Series 1C Cartridges 7/8-14 UNF Cartridge Thread 25,4 mm Valve Hex Size 23-26 lbf ft Valve Installation Torque	2-Port (Common) 4-Port (Common)	SC-10-02 SC-10-04
Series 2 Cartridges 1"-14 UNS Cartridge Thread 28,6 mm Valve Hex Size 61 - 68 Nm Valve Installation Torque	2-Port 2-Port 3-Port 4-Port 4-Port 4-Port (Dual path) 6-Port 6-Port	T-3A T-5A T-2A T-22A T-32A T-52AD T-52A T-62A
Series 3 Cartridges M36 Cartridge Thread B1,8 mm Valve Hex Size 203 - 217 Nm Valve Installation Torque	2-Port 3-Port 4-Port 4-Port 4-Port (Dual path) 6-Port 6-Port	T-16A T-17A T-23A T-33A T-53AD T-53A T-53A
Series 4 Cartridges M48 Cartridge Thread	2-Port (Undercut)	T-18AU

41,3 mm Valve Hex Size 474 - 508 Nm Valve Installation Torque

3-P0IT	I-19A
3-Port (Undercut)	T-19AU
4-Port	T-24A
4-Port (Undercut)	T-24AU
4-Port	T-34A
4-Port (Dual path)	T-54AD
6-Port	T-54A
6-Port	T-64A

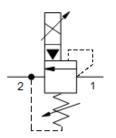


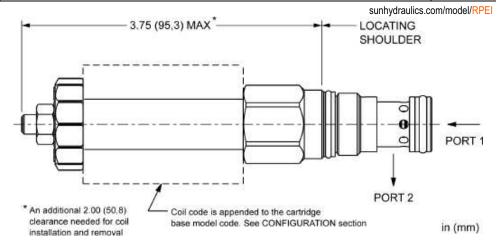


Electro-proportional relief valve - high pressure setting with no command

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-13A







This 2-port, pilot-operated relief cartridge is an electro-proportionally controlled, normally-closed pressure regulating valve. The valve is spring biased closed to its highest setting (customer specified). Increasing current to the coil will proportionally decrease the pressure setting. When the pressure at port 1 (inlet) is sufficient to overcome the spring force minus the solenoid force, as determined by the analog input signal, the poppet lifts and allows flow from port 1 to port 2 (outlet).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,775,812
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Viton: 990010006

NOTES

CONTROL

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: RPEILAN

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) COIL *

L Standard Screw Adjustment C Concealed Manual Override 1500 - 3000 psi (105 - 210 bar), 3000 psi (210 bar) Standard Setting

N Buna-N V Viton

* Additional coil options are available

W 3000 - 5000 psi (210 - 350 bar), 5000 psi (350 bar) Standard Setting

© 2023 Sun Hydraulics 1 of 210

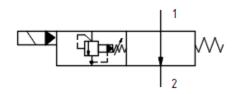


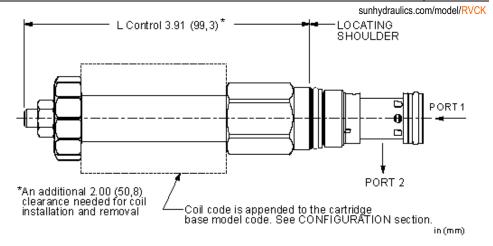


FLex Series 2-stage, solenoid-operated adjustable relief valve, normally vented

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







This FLeX Series solenoid-operated, 2-stage, balanced relief cartridge is a pressure regulating valve.

The valve is normally vented. When vented (de-energized), the pressure drop from the inlet (port 1) to tank (port 2) is typically 100 psi (see performance curves).

Energizing the solenoid activates the relief function. In relief mode, the valve opens to tank (port 2), throttling flow to regulate the pressure when the pressure at the inlet (port 1) reaches the valve setting. The setting is adjustable with an adjust screw.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@2000 psi
Response Time - Typical	50 ms
Adjustment - No. of CW Turns from Min. to Max. setting	3.5
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,533,584
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: RVCKLJN

CONTROL (L) ADJUSTMENT RANGE (J) SEAL MATERIAL (N) COIL*

L Standard Screw Adjustment

J 300 - 5000 psi (20 - 350 bar), 1000 psi (70 bar) Standard Setting

N Buna-N
E EPDM
V Viton

* Additional coil options are available

No coil

© 2023 Sun Hydraulics 2 of 210

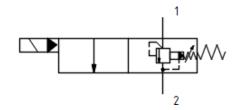


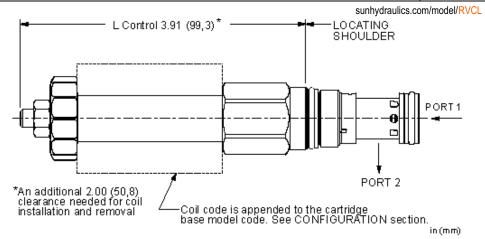


FLex Series 2-stage, solenoid-operated adjustable relief valve, energize to vent

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







This FLeX Series solenoid-operated, 2-stage, balanced relief cartridge is a pressure regulating valve.

The valve is normally in relief mode. In relief mode, the valve is open to tank (port 2), throttling flow to regulate the pressure when the pressure at the inlet (port 1) reaches the valve setting. The setting is adjustable with an adjust screw.

Energizing the solenoid opens the main chamber to tank and the valve becomes vented. The pressure drop from the inlet (port 1) to tank (port 2) is typically 100 psi (see performance curves).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@2000 psi
Response Time - Typical	50 ms
Adjustment - No. of CW Turns from Min. to Max. setting	3.5
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,557,483
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: RVCLLJN

CONTROL (L) ADJUSTMENT RANGE (J) SEAL MATERIAL (N) COIL*

L Standard Screw Adjustment

J 300 - 5000 psi (20 - 350 bar), 1000 psi (70 bar) Standard Setting

N Buna-N
E EPDM
V Viton

* Additional coil options are available

No coil

© 2023 Sun Hydraulics 3 of 210

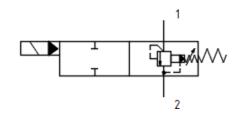


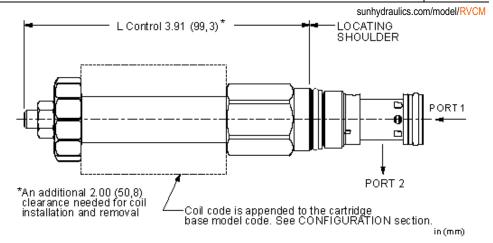


FLeX Series 2-stage, solenoid-operated adjustable relief valve, energize to block

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







This FLeX Series solenoid-operated, 2-stage, balanced relief cartridge is a pressure regulating valve.

The valve is normally in relief mode. In relief mode, the valve is open to tank (port 2), throttling flow to regulate the pressure when the pressure at the inlet (port 1) reaches the valve setting. The setting is adjustable with an adjust screw.

Energizing the solenoid blocks pilot flow. The valve blocks the flow path from inlet (port 1) to tank (port 2) similar to a spool-type directional valve.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@3000 psi
Response Time - Typical	50 ms
Adjustment - No. of CW Turns from Min. to Max. setting	3.5
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,570,932
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: RVCMLJN

CONTROL (L) ADJUSTMENT RANGE (J) SEAL MATERIAL (N) COIL*

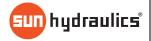
L Standard Screw Adjustment J 300 - 5000 psi (20 - 350 bar), 1000 psi (70 bar) Standard Setting

N Buna-N
E EPDM
V Viton

* Additional coil options are available

No coil

© 2023 Sun Hydraulics 4 of 210

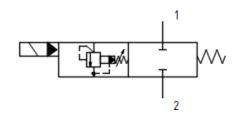


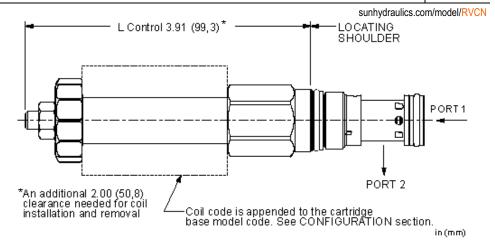


FLeX Series 2-stage, solenoid-operated adjustable relief valve, normally blocked

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







This FLeX Series solenoid-operated, 2-stage, balanced relief cartridge is a pressure regulating valve.

The valve is normally blocked. De-energized, the valve blocks the flow path from inlet (port 1) to tank (port 2) similar to a spool-type directional valve.

Energizing the solenoid activates the relief function. In relief mode, the valve opens to tank (port 2), throttling flow to regulate the pressure when the pressure at the inlet (port 1) reaches the valve setting. The setting is adjustable with an adjust screw.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@3000 psi
Response Time - Typical	50 ms
Adjustment - No. of CW Turns from Min. to Max. setting	3.5
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,774,853
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: RVCNLJN

CONTROL (L) ADJUSTMENT RANGE (N) COIL * (J) SEAL MATERIAL L Standard Screw Adjustment No coil

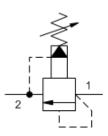
300 - 5000 psi (20 - 350 bar), 1000 psi (70 bar) Standard Setting

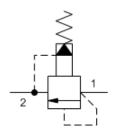
N Buna-N **E** EPDM V Viton

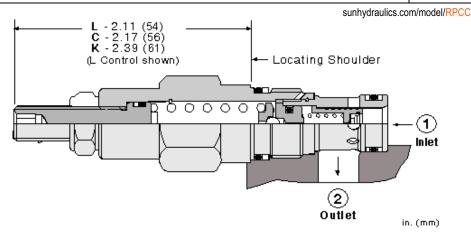
* Additional coil options are available

© 2023 Sun Hydraulics 5 of 210









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	1/2 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	EPDM: 990162014
Seal kit - Cartridge	Polyurethane: 990162002
Seal kit - Cartridge	Viton: 990162006

CONFIGURATION OPTIONS

Model Code Example: RPCCLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 75 - 3000 psi (5 - 210 bar), 1000 psi (70 bar) Standard Setting

W 75 - 4500 psi (5 - 315 bar), 1000 psi (70 bar) Standard Setting

B 75 - 1500 psi (5 - 105 bar), 1000 psi (70 bar) Standard Setting

C 75 - 6000 psi (5 - 420 bar), 1000 psi (70 bar) Standard Setting

N 75 - 800 psi (5 - 55 bar), 400 psi (28 bar) Standard Setting

Q 75 - 400 psi (5 - 28 bar), 200 psi (14 bar) Standard Setting

N Buna-N **E** EPDM

V Viton

(N) MATERIAL/COATING Standard Material/Coating /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 6 of 210

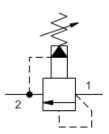


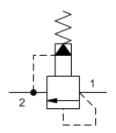


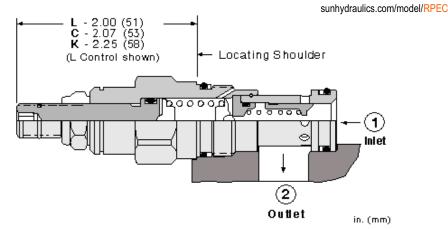
Pilot-operated, balanced piston relief valve

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	EPDM: 990010014
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

NOTES

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RPECLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- O Handknob with Panel Mount
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N E EPDM

V Viton

) MATERIAL/COATING

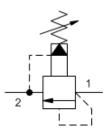
Standard Material/Coating /AP Stainless Steel, Passivated

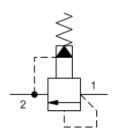
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

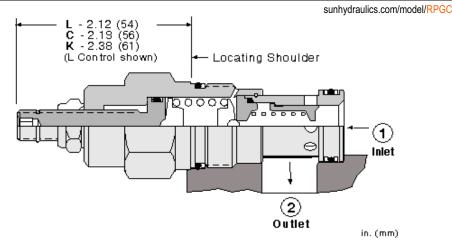
© 2023 Sun Hydraulics 7 of 210

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel. **NOTES**

CONFIGURATION OPTIONS

Model Code Example: RPGCLAN

04	0	A -1! 4 4
Standard	Screw	Adiustment

- C Tamper Resistant Factory Set
- J Capped Screw Adjustment
- K Handknob

CONTROL

- O Handknob with Panel Mount
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

A 100 - 3000 psi (7 - 210 bar), 1000 psi

(70 bar) Standard Setting **W** 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi
- (70 bar) Standard Setting C 150 - 6000 psi (10,5 - 420 bar), 1000
- psi (70 bar) Standard Setting **D** 25 - 800 psi (1,7 - 55 bar), 400 psi (28
- bar) Standard Setting E 25 - 400 psi (1,7 - 28 bar), 200 psi (14
- bar) Standard Setting N 60 - 800 psi (4 - 55 bar), 400 psi (28
- bar) Standard Setting

Q 60 - 400 psi (4 - 28 bar), 200 psi (14 bar) Standard Setting

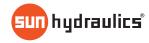
N Buna-N **E** EPDM

V Viton

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

Standard Material/Coating

© 2023 Sun Hydraulics 8 of 210

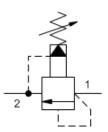


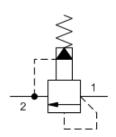
MODEL RPIC

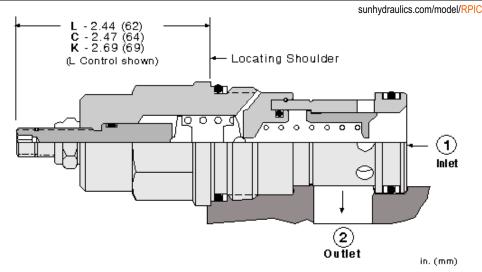
Pilot-operated, balanced piston relief valve

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	EPDM: 990016014
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

CONFIGURATION OPTIONS

Model Code Example: RPICLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

CONTROL

(L) ADJUSTMENT RANGE

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- D 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 9 of 210

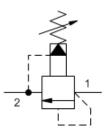


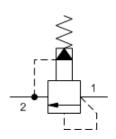


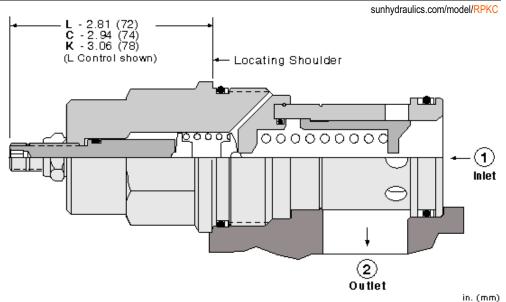
Pilot-operated, balanced piston relief valve

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	EPDM: 990018014
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

CONFIGURATION OPTIONS

Model Code Example: RPKCLAN

(A) SEAL MATERIAL

N Buna-N

E EPDM

V Viton

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

- Q Capped and Lockwired
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

© 2023 Sun Hydraulics

(L) ADJUSTMENT RANGE

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000
- D 25 (70 bar) Standard Setting psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14
- N 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- Q 60 400 psi (4 28 bar), 200 psi (14

bar) Standard Setting

bar) Standard Setting

MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

10 of 210

© 2023 Sun Hydraulics 11 of 210

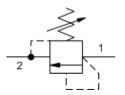


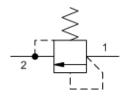
MODEL **RDBA**

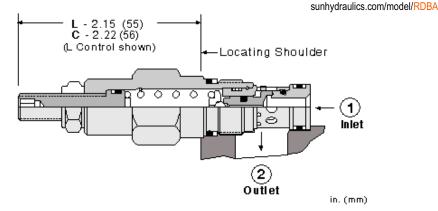
Direct-acting relief valve

CAPACITY: 12 gpm / CAVITY: T-162A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>85% of crack setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	1/2 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	EPDM: 990162014
Seal kit - Cartridge	Polyurethane: 990162002
Seal kit - Cartridge	Viton: 990162006

CONFIGURATION OPTIONS

Model Code Example: RDBALAN

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- 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 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting

N Buna-N **E** EPDM

V Viton

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

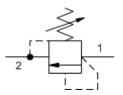
© 2023 Sun Hydraulics 12 of 210

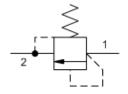


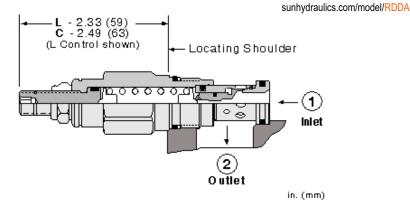


SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	EPDM: 990310014
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RDDALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- Y Tri-Grip Handknob
- **A** 500 3000 psi (35 210 bar), 1000 psi (70 bar) Standard Setting
- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- **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** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting

N Buna-N
E EPDM

V Viton

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

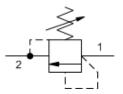
© 2023 Sun Hydraulics 13 of 210

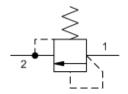


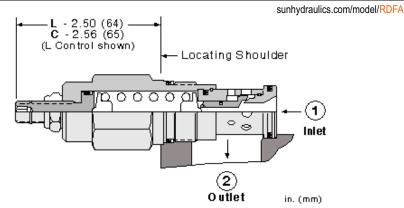


SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	EPDM: 990303014
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

CONFIGURATION OPTIONS

Model Code Example: RDFALAN

CONTROL (

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **Q** Capped and Lockwired

(L) ADJUSTMENT RANGE

psi N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- **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** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- \$ 50 200 psi (3,5 14 bar), 100 psi (7

bar) Standard Setting

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

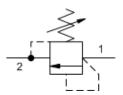
© 2023 Sun Hydraulics 14 of 210

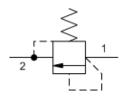


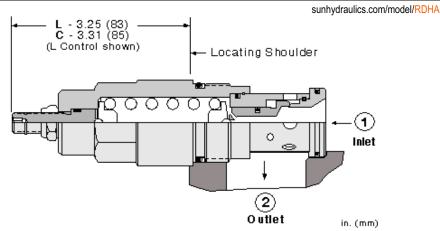


SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990316007
Seal kit - Cartridge	Viton: 990316006

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

CONFIGURATION OPTIONS

Model Code Example: RDHALAN

N Buna-N

E EPDM

V Viton

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting
 W 800 - 4500 psi (55 - 315 bar), 1000 psi

W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting

- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- **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** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

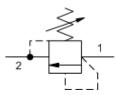
© 2023 Sun Hydraulics 15 of 210

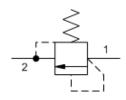


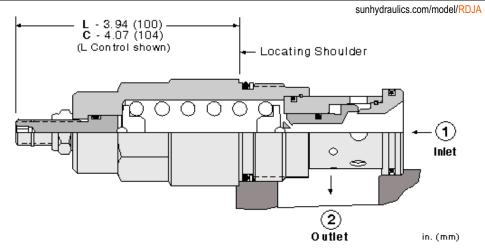


SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990318007
Seal kit - Cartridge	EPDM: 990318014
Seal kit - Cartridge	Viton: 990318006

CONFIGURATION OPTIONS

Model Code Example: RDJALAN

V Viton

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- Q Capped and Lockwired
- A 500 3000 psi (35 210 bar), 1000 psi (70 bar) Standard Setting
 W 800 4500 psi (55 315 bar), 1000 psi
- (70 bar) Standard Setting **B** 300 1500 psi (20 105 bar), 1000 psi
- (70 bar) Standard Setting
- **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** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting

N Buna-N Standard Material/Coating
E EPDM /AP Stainless Steel, Passivated

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 16 of 210

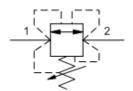


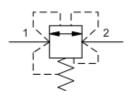


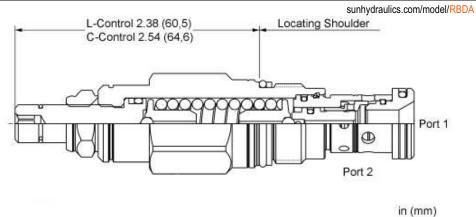
Bi-directional, direct-acting relief valve

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









The bi-directional, direct-acting relief cartridge is a normally closed, pressure-limiting valve used to protect hydraulic components from pressure transients. When the pressure differential between ports 1 and 2 exceeds the valve setting, the valve starts to open, throttling flow to limit the pressure rise, regardless of the direction.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>85% of setting
Hysteresis	≤ 3 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
U.S. Patent #	11,384,857
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RBDALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N

L Standard Screw Adjustment

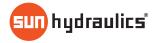
C Tamper Resistant - Factory Set

A 1200 - 3000 psi (85-210 bar), 1500 psi (105 bar) Standard Setting

W 3000 - 5000 psi (210 - 350 bar), 4000 psi (280 bar) Standard Setting

N Buna-N V Viton

© 2023 Sun Hydraulics 17 of 210



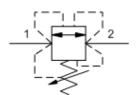


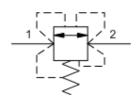
Bi-directional direct-acting relief valve

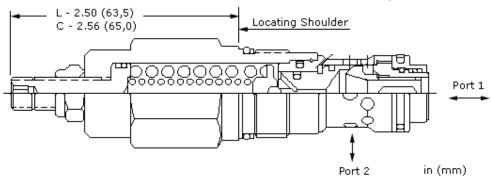
SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-3A











The bi-directional, direct-acting relief cartridge is a normally closed, pressure-limiting valve used to protect hydraulic components from pressure transients. When the pressure differential between ports 1 and 2 exceeds the valve setting, the valve starts to open, throttling flow to limit the pressure rise, regardless of the direction.

Both directions have very similar setting and performance.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	30 drops/min.
Response Time - Typical	2 ms
Reseat	>85% of setting
Hysteresis	≤ 3 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

(N)

CONFIGURATION OPTIONS

Model Code Example: RBFALWN

CONTROL (L) ADJUSTMENT RANGE (W) SEAL MATERIAL

W 900 4500 pp. (55, 215 bp.) 1000 pp.

N Rupo N

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting

C 1500 - 6000 psi (105 - 420 bar), 1500 psi (105 bar) Standard Setting

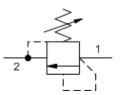
N Buna-N
V Viton

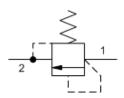
© 2023 Sun Hydraulics 18 of 210

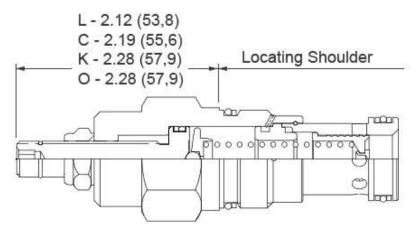
Low-pressure-range, direct-acting relief valve SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A



sunhydraulics.com/model/RGFA







in (mm)

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.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RGFALCN

CONTROL (L) ADJUSTMENT RANGE (C) SEAL MATERIAL

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

O Handknob with Panel Mount

C 18 - 50 psi (1,2 - 3,5 bar), 50 psi (3,5 bar) Standard Setting

E 20 - 75 psi (1,4 - 5 bar), 75 psi (5 bar) Standard Setting

F 35 - 80 psi (2,4 -5,5 bar), 80 psi (5,5

G 597) Standard Setting Sarth, 150 psi (10,5 bar) Standard Setting

N Buna-N

E EPDM V Viton (N) MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 19 of 210

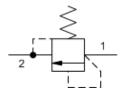


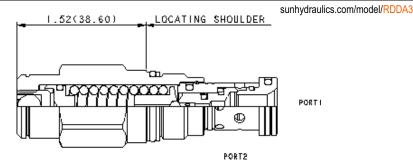


Non-adjustable direct-acting relief valve

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







Non-adjustable 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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RDDA3AN

ADJUSTMENT RANGE

(A) SEAL MATERIAL

N Buna-N

(N) MATERIAL/COATING

A 500 - 3000 psi (35 - 210 bar) **C** 1000 - 6000 psi (70 - 420 bar)

V Viton

Standard Material/Coating
/LH Mild Steel, Zinc-Nickel

D 200 - 800 psi (14 - 55 bar)

© 2023 Sun Hydraulics 20 of 210

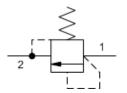


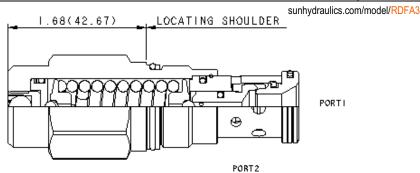


Non-adjustable direct-acting relief valve

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A







Non-adjustable 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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	EPDM: 990303014
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

CONFIGURATION OPTIONS

Model Code Example: RDFA3AN

ADJUSTMENT RANGE (A) SEAL MATERIAL (

A 500 - 3000 psi (35 - 210 bar)

N Buna-N V Viton

C 1000 - 6000 psi (70 - 420 bar)

D 200 - 800 psi (14 - 55 bar)

© 2023 Sun Hydraulics 21 of 210

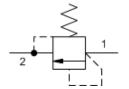
MODEL **RDDT**

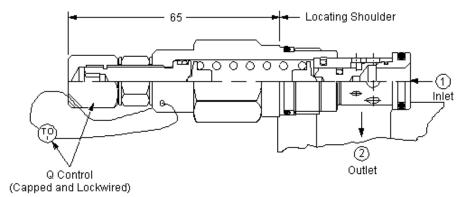
Direct-acting relief valve, CE marked

SERIES 1 / CAPACITY: 19.8 gpm / CAVITY: T-10A



sunhydraulics.com/model/RDD1





Dimensions in mm

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.

The CE marked valve is a safety valve that meets the requirements of the European Directive for Pressurized Devices (PED) 2014/68/EU. The valve setting represents the excess operating pressure at which the valve opens. Valve capacity can be determined from the performance curve. It shows an approved flow which depends on the excess operating pressure. As a requirement of the PED, the system pressure at the maximum approved flow is a maximum of 10% above the excess operating pressure.

TECHNICAL DATA

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

Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RDDTQAN

CONTROL (Q) ADJUSTMENT RANGE (A) SEAL MATERIAL Q Capped and Lockwired A 100 - 210 bar (100 - 210 bar) N Buna-N

B 90 - 99 bar (90 - 99 bar)

V Viton

C 315 - 422 bar (315 - 422 bar)

W 211 - 314 bar (211 - 314 bar)

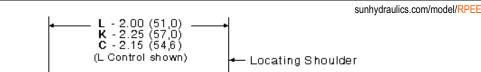
© 2023 Sun Hydraulics 22 of 210

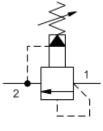


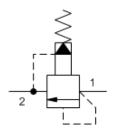


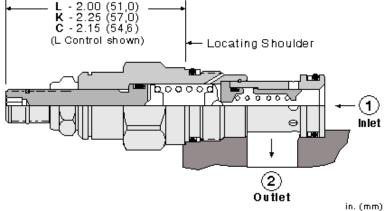
Fast-acting, pilot-operated, balanced piston relief valve SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A











Fast-acting, pilot-operated, balanced piston relief cartridges are normally closed, pressure-limiting valves used to protect hydraulics components from pressure transients. Fast opening and closing is gained at the expense of smoothness. 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 have low pressure rise vs. flow and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel. **NOTES**

CONFIGURATION OPTIONS

Model Code Example: RPEELAN

(L) ADJUSTMENT RANGE CONTROL (A) SEAL MATERIAL (N) MATERIAL/COATING

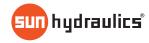
L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- O Handknob with Panel Mount
- Y Tri-Grip Handknob
- 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

V Viton

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 23 of 210

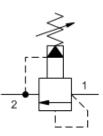


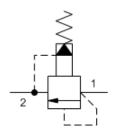


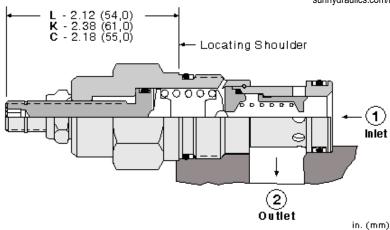
Fast-acting, pilot-operated, balanced piston relief valve SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A



sunhydraulics.com/model/RPGE







Fast-acting, pilot-operated, balanced piston relief cartridges are normally closed, pressure-limiting valves used to protect hydraulics components from pressure transients. Fast opening and closing is gained at the expense of smoothness. 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 have low pressure rise vs. flow and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in ³ /min.@1000 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RPGELAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob
- O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- **A** 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14

(A) SEAL MATERIAL

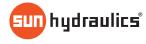
N Buna-N
E EPDM

V Viton

N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

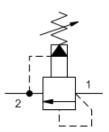
© 2023 Sun Hydraulics 24 of 210

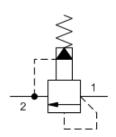


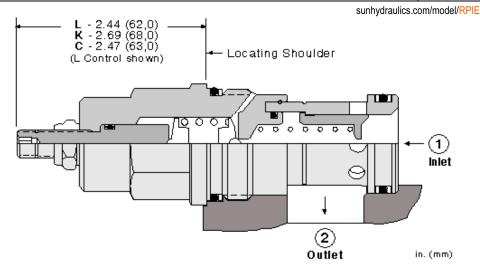


Fast-acting, pilot-operated, balanced piston relief valve SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









Fast-acting, pilot-operated, balanced piston relief cartridges are normally closed, pressure-limiting valves used to protect hydraulics components from pressure transients. Fast opening and closing is gained at the expense of smoothness. 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 have low pressure rise vs. flow and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

CONFIGURATION OPTIONS

Model Code Example: RPIELAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

(L) ADJUSTMENT RANGE

- (A) SEAL MATERIAL
- (N) MATERIAL/COATING

A 100 - 3000 psi (7 - 210 bar), 1000 psi

- (70 bar) Standard Setting

 B 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- (70 bar) Standard Setting **C** 150 6000 psi (10,5 420 bar), 1000
- psi (70 bar) Standard Setting **D** 25 800 psi (1,7 55 bar), 400 psi (28
- bar) Standard Setting

 E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

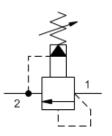
© 2023 Sun Hydraulics 25 of 210

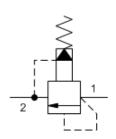


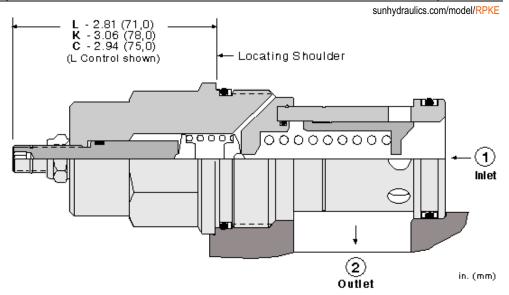


Fast-acting, pilot-operated, balanced piston relief valve SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A









Fast-acting, pilot-operated, balanced piston relief cartridges are normally closed, pressure-limiting valves used to protect hydraulics components from pressure transients. Fast opening and closing is gained at the expense of smoothness. 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 have low pressure rise vs. flow and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

CONFIGURATION OPTIONS

Model Code Example: RPKELAN

I Standard Screw Adjust	mont

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

N Buna-N V Viton

MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel. Passivated /LH Mild Steel, Zinc-Nickel

- **A** 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14
- w 490 Standardi \$40,99 315 bar), 1000 psi (70 bar) Standard Setting

© 2023 Sun Hydraulics 26 of 210

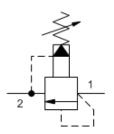


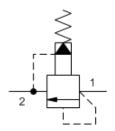


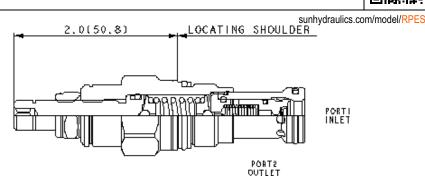
Pilot-operated, balanced poppet relief valve

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









Pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	10 drops/min.
Response Time - Typical	7 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RPESLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting B 50 - 1500 psi (3,5 - 105 bar), 1000 psi

- **B** 50 1500 psi (3,5 105 bar), 1000 ps (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 100 4500 psi (7 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N

E EPDM
V Viton

Standard Material/Coating
/AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

MATERIAL/COATING

© 2023 Sun Hydraulics 27 of 210



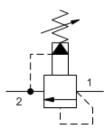
MODEL RPGS

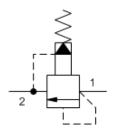
Pilot-operated, balanced poppet relief valve

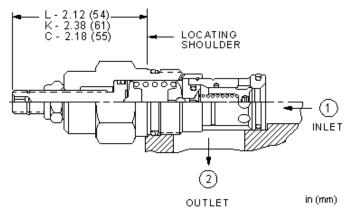
SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A



sunhydraulics.com/model/RPGS







Pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Factory Pressure Settings Established at	4 gpm	
Maximum Valve Leakage at Reseat	10 drops/min.	
Response Time - Typical	7 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990303007	
Seal kit - Cartridge	EPDM: 990303014	
Seal kit - Cartridge	Polyurethane: 990303002	
Seal kit - Cartridge	Viton: 990303006	

CONFIGURATION OPTIONS

Model Code Example: RPGSLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

- A 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 100 4500 psi (7 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 28 of 210



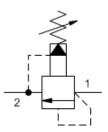
MODEL RPIS

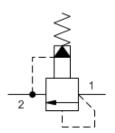
Pilot-operated, balanced poppet relief valve

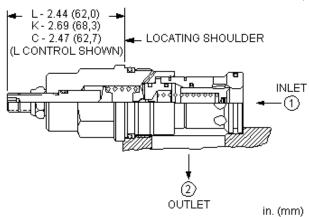
SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A



sunhydraulics.com/model/RPIS







Pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	7 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990316007
Seal kit - Cartridge	EPDM: 990316014
Seal kit - Cartridge	Viton: 990316006

CONFIGURATION OPTIONS

Model Code Example: RPISLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N E EPDM

V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 29 of 210



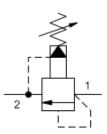


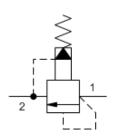
Pilot-operated, balanced poppet relief valve

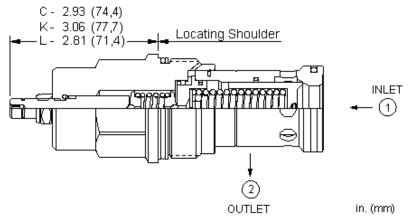
SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A



sunhydraulics.com/model/RPKS







Pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Factory Pressure Settings Established at	4 gpm	
Maximum Valve Leakage at Reseat	10 drops/min.	
Response Time - Typical	7 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990318007	
Seal kit - Cartridge	EPDM: 990318014	
Seal kit - Cartridge	Polyurethane: 990018002	
Seal kit - Cartridge	Viton: 990318006	

CONFIGURATION OPTIONS

Model Code Example: RPKSLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

....

- **A** 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

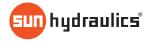
E EPDM

V Viton

(N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 30 of 210

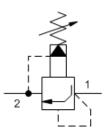


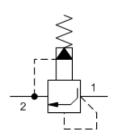


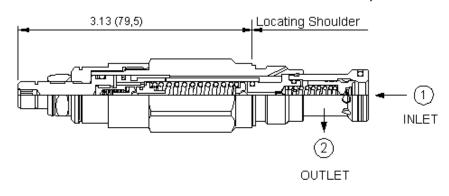
Anti-Shock, pilot-operated, balanced poppet relief valve SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A



sunhydraulics.com/model/RPET







in (mm)

Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	100 - 300 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RPETLWN

CONTROL (L) ADJUSTMENT RANGE

(W) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

W 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

C 4500 - 6000 psi (315 - 420 bar), 4500 psi (315 bar) Standard Setting

N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

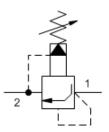
© 2023 Sun Hydraulics 31 of 210

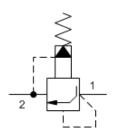


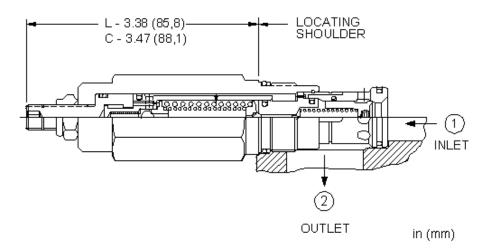
Anti-Shock, pilot-operated, balanced poppet relief valve SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A



sunhydraulics.com/model/RPGT







Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	200 - 400 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

NOTES

CONTROL

Patents: US#6,039,070; Germany EP 1 001 197; Japan #3,119,230

CONFIGURATION OPTIONS

Model Code Example: RPGTLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL N Buna-N

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

V Viton **C** 4500 - 6000 psi (315 - 420 bar), 4500

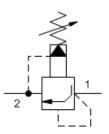
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

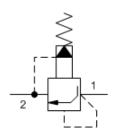
psi (315 bar) Standard Setting **W** 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

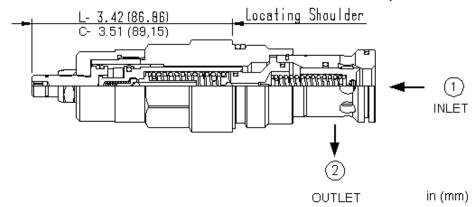
© 2023 Sun Hydraulics 32 of 210



sunhydraulics.com/model/RPIT







Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	300 - 500 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990316007
Seal kit - Cartridge	Viton: 990316006

NOTES

CONTROL

- Patents: US#6,039,070; Germany EP 1 001 197; Japan #3,119,230
- Patents: US#6,039,070; Germany EP 1 001 197; Japan #3,119,230

CONFIGURATION OPTIONS

Model Code Example: RPITLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

MATERIAL/COATING

C Tamper Resistant - Factory Set

A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

N Buna-N V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

C 4500 - 6000 psi (315 - 420 bar), 4500 psi (315 bar) Standard Setting **W** 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

© 2023 Sun Hydraulics 33 of 210

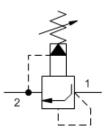


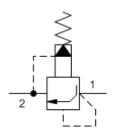


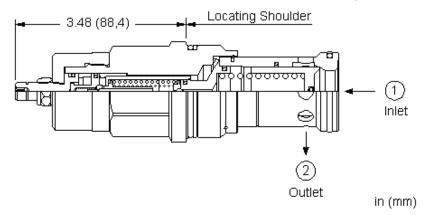
Anti-Shock, pilot-operated, balanced poppet relief valve SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A



sunhydraulics.com/model/RPKT







Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	400 - 600 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990318007
Seal kit - Cartridge	Viton: 990318006

CONFIGURATION OPTIONS

Model Code Example: RPKTLAN

(L) ADJUSTMENT RANGE CONTROL (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment C Tamper Resistant - Factory Set A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

N Buna-N V Viton

/AP Stainless Steel, Passivated

- **C** 4500 6000 psi (315 420 bar), 4500 psi (315 bar) Standard Setting

W 3000 - 4500 psi (210 - 315 bar), 3000

psi (210 bar) Standard Setting

© 2023 Sun Hydraulics 34 of 210

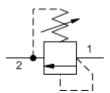


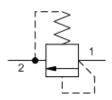


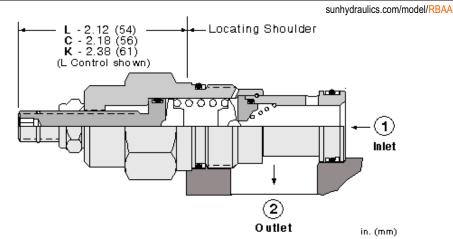
Direct-acting relief valve - pilot capacity

SERIES 2 / CAPACITY: .5 gpm / CAVITY: T-3A









Direct-acting, pilot relief cartridges are used to remotely control the pressure setting of other pilot-operated valves. Because capacity is limited to pilot flow, these valves should be used with other higher flow valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES For Series 2 cartridges configured with an O control (panel mount handknob), a 1.00 in. (25,4 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RBAALAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- J Capped Screw Adjustment
- K Handknob

CONTROL

- O Handknob with Panel Mount
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

A 25 - 3000 psi (1,7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 25 1500 psi (1,7 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 25 6000 psi (1,7 420 bar), 1000 psi
- (70 bar) Standard Setting **D** 25 800 psi (1,7 55 bar), 400 psi (28
- bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 25 4500 psi (1,7 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Stan

 N
 Buna-N
 Standard Material/Coating

 E
 EPDM
 /AP Stainless Steel, Passivated

 V
 Viton
 /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 35 of 210

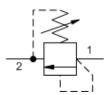


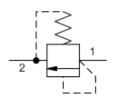


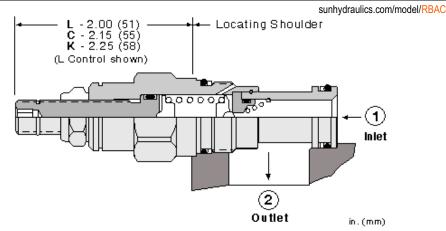
Direct-acting relief valve - pilot capacity

SERIES 1 / CAPACITY: .25 gpm / CAVITY: T-10A









Direct-acting, pilot relief cartridges are used to remotely control the pressure setting of other pilot-operated valves. Because capacity is limited to pilot flow, these valves should be used with other higher flow valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	EPDM: 990010014
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

NOTES For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RBACLAN

O4 I I	0	A -1' 1 1
		Adjustment

- C Tamper Resistant Factory Set
- J Capped Screw Adjustment
- K Handknob

CONTROL

O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- **A** 25 3000 psi (1,7 210 bar), 1000 psi (70 bar) Standard Setting
- **W** 25 4500 psi (1,7 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 25 1500 psi (1,7 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 25 6000 psi (1,7 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N E EPDM

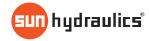
V Viton

MATERIAL/COATING Standard Material/Coating

(N)

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 36 of 210



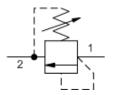


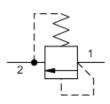
Direct-acting relief valve - pilot capacity

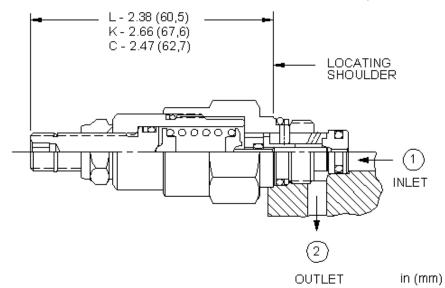
SERIES P / CAPACITY: 2.5 gpm / CAVITY: T-8A



sunhydraulics.com/model/RBAE







Two-port, pilot-stage, direct-acting relief cartridges are fully adjustable, normally closed pressure regulating valves. When the pressure at port 1 (inlet) is sufficient to overcome the spring force (valve setting), a flow path is opened from port 1 to port 2 (tank).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	15 drops/min.
Response Time - Typical	2 ms
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990608007
Seal kit - Cartridge	EPDM: 990608014
Seal kit - Cartridge	Polyurethane: 990008002
Seal kit - Cartridge	Viton: 990608006

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RBAELAN

L	Stand	iard S	crew	Aajusi	ment

- C Tamper Resistant Factory Set
- K Handknob
- O Handknob with Panel Mount
- Y Tri-Grip Handknob

A 25 - 3000 psi (1,7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 25 1500 psi (1,7 105 bar), 1000 psi (70 bar) Standard Setting
- C 25 6000 psi (1,7 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28
- bar) Standard Setting 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 25 4500 psi (1,7 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

E EPDM V Viton

(N) MATERIAL/COATING Standard Material/Coating

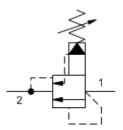
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

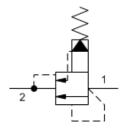
© 2023 Sun Hydraulics 37 of 210 Kick-down, pilot-operated, balanced piston relief valve

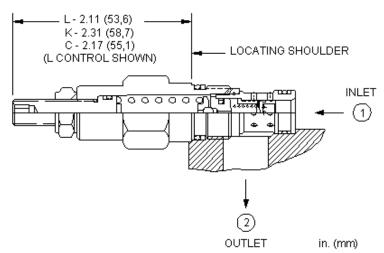
CAPACITY: 12 gpm / CAVITY: T-162A



sunhydraulics.com/model/RQCB







Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settting, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	Kick down point
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting 5	
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Polyurethane: 990162002
Seal kit - Cartridge	Viton: 990162006

NOTES

CONTROL

Do not use in load holding applications.

CONFIGURATION OPTIONS

Model Code Example: RQCBLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

- C Tamper Resistant Factory Set
- K Handknob

A 75 - 3000 psi (5 - 210 bar), 1000 psi (70

bar) Standard Setting **B** 75 - 1500 psi (5 - 105 bar), 1000 psi (70

- bar) Standard Setting
- C 75 6000 psi (5 420 bar), 1000 psi (70 bar) Standard Setting
- N 75 800 psi (5 55 bar), 400 psi (28 bar) Standard Setting
- Q 75 400 psi (5 28 bar), 200 psi (14 bar) Standard Setting
- **W** 75 4500 psi (5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

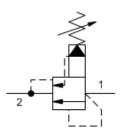
© 2023 Sun Hydraulics 38 of 210

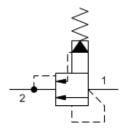


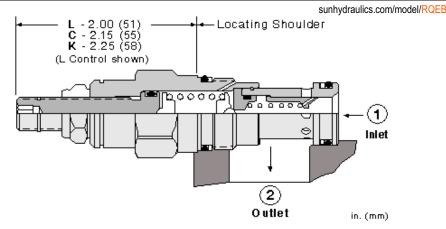


Kick-down, pilot-operated, balanced piston relief valve SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settling, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure 5000 psi	
Factory Pressure Settings Established at	Kick down point
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

NOTES

- Do not use in load holding applications.
- For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RQEBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- **A** 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N
V Viton

(N) MATERIAL/COATING

Standard Material/Coating

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 39 of 210

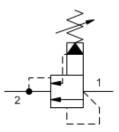


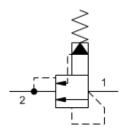


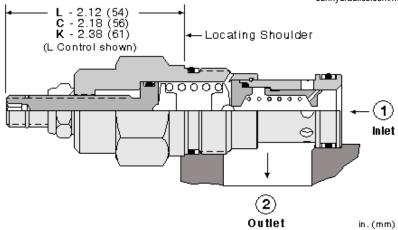
Kick-down, pilot-operated, balanced piston relief valve SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A



sunhydraulics.com/model/RQGB







Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settling, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure 5000 psi	
Factory Pressure Settings Established at Kick down point	
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in ³ /min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting 5	
Locknut Hex Size 9/16 in.	
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES

- Do not use in load holding applications.
- For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RQGBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- O Handknob with Panel Mount
- W Hex Wrench Adjustment

(L) ADJUSTMENT RANGE

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

V Viton

(N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

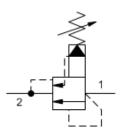
© 2023 Sun Hydraulics 40 of 210

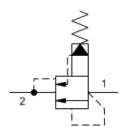


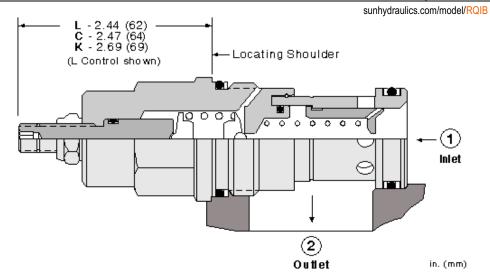


Kick-down, pilot-operated, balanced piston relief valve SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settting, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure 5000 psi	
Factory Pressure Settings Established at Kick down point	
Maximum Valve Leakage at 110 SUS (24 cSt) 4 in³/min.@1000 psi	
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting 5	
Locknut Hex Size 9/16 in.	
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

NOTES

CONTROL

K Handknob

Do not use in load holding applications.

CONFIGURATION OPTIONS

Model Code Example: RQIBLAN

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting

C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Standard Material/Coating Viton /AP Stainless Steel, Passivated

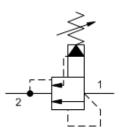
© 2023 Sun Hydraulics 41 of 210

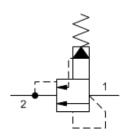


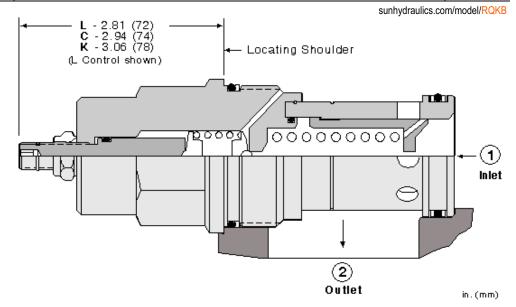


Kick-down, pilot-operated, balanced piston relief valve SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A









Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settting, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	Kick down point
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting 5	
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

NOTES

CONTROL

Do not use in load holding applications.

CONFIGURATION OPTIONS

Model Code Example: RQKBLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE A 100 - 3000 psi (7 - 210 bar), 1000 psi

(A) SEAL MATERIAL

MATERIAL/COATING

C Tamper Resistant - Factory Set

K Handknob

(70 bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 1000 psi

(70 bar) Standard Setting

C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting

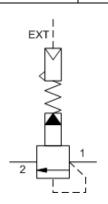
E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

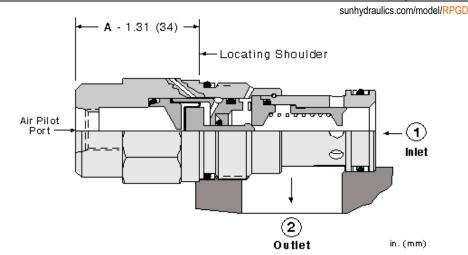
W 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Standard Material/Coating **V** Viton /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 42 of 210 SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A







Air-controlled, pilot-operated, balanced piston relief cartridges use compressed air over a diaphragm instead of an adjustable spring to control pressure setting. The air signal is supplied through a port in the hex-end of the cartridge. They are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure 2000 psi	
Pilot Ratio	20:1
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

CONFIGURATION OPTIONS

Model Code Example: RPGDABN

 CONTROL
 (A)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

 A External 1/4 NPTF Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

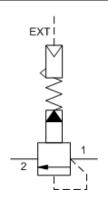
 V Viton

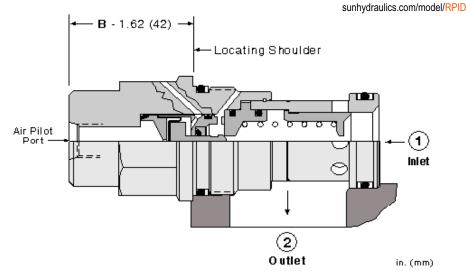
© 2023 Sun Hydraulics 43 of 210

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









Air-controlled, pilot-operated, balanced piston relief cartridges use compressed air over a diaphragm instead of an adjustable spring to control pressure setting. The air signal is supplied through a port in the hex-end of the cartridge. They are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	2000 psi
Pilot Ratio	20:1
Hysteresis (with dither)	<4%
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

CONFIGURATION OPTIONS

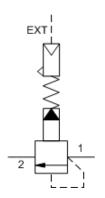
Model Code Example: RPIDBBN

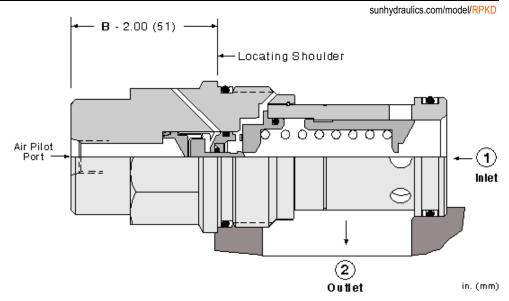
CONTROL	(B)	OPERATING RANGE	(B)	SEAL MATERIAL	(N)
B External 4-SAE Port		B 50 - 1500 psi (3,5 - 105 bar)		N Buna-N	
_				V Viton	

© 2023 Sun Hydraulics 44 of 210 Air-controlled, pilot-operated, balanced piston relief valve

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A







Air-controlled, pilot-operated, balanced piston relief cartridges use compressed air over a diaphragm instead of an adjustable spring to control pressure setting. The air signal is supplied through a port in the hex-end of the cartridge. They are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	2000 psi
Pilot Ratio	20:1
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

CONFIGURATION OPTIONS

Model Code Example: RPKDBBN

 CONTROL
 (B)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

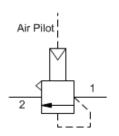
 B External 4-SAE Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

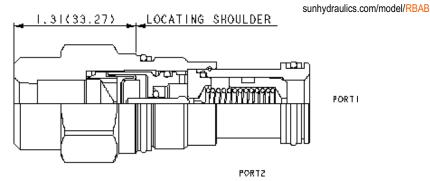
 V Viton

© 2023 Sun Hydraulics 45 of 210

SERIES 2 / CAPACITY: .5 gpm / CAVITY: T-3A







Air-controlled, pilot relief cartridges are used to remotely control the pressure setting of other pilot operated valves. Because capacity is limited to pilot flow, these valves should be used with valves with compatable pilot flows. They use compressed air over a diaphragm instead of an adjustable spring to control pressure setting, the air signal is supplied through a port in the hex-end of the cartridge.

TECHNICAL DATA

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

Maximum Operating Pressure	2000 psi
Pilot Ratio	20:1
Maximum Valve Leakage at 110 SUS (24 cSt)	5 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	Viton: 990203006

CONFIGURATION OPTIONS

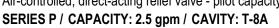
Model Code Example: RBABABN

V Viton

 CONTROL
 (A)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

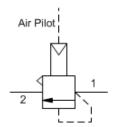
 A External 1/4 NPTF Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

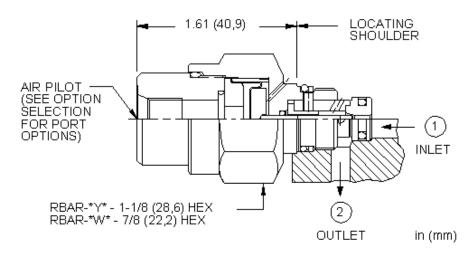
© 2023 Sun Hydraulics 46 of 210





sunhydraulics.com/model/RBAR





Two-port, pilot-stage, air-controlled, direct-acting relief cartridges are normally closed pressure regulating valves. When the pressure at port 1 (inlet) is sufficient to overcome the force due to the air signal, a flow path is opened from port 1 to port 2 (tank). These cartridges are designed for pilot flow applications and utilize Sun's T-8A cavity so they can be used in conjunction with Sun's pilot-operated, main-stage valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt)	15 drops/min.	
Maximum Pilot Pressure	150 psi	
Pilot Control Port	See Control Options	
Seal kit - Cartridge	Buna: 990608007	
Seal kit - Cartridge	EPDM: 990608014	
Seal kit - Cartridge	Polyurethane: 990008002	
Seal kit - Cartridge	Viton: 990608006	

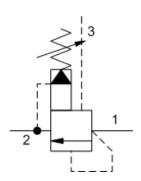
CONFIGURATION OPTIONS

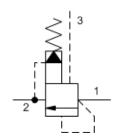
Model Code Example: RBARBWN

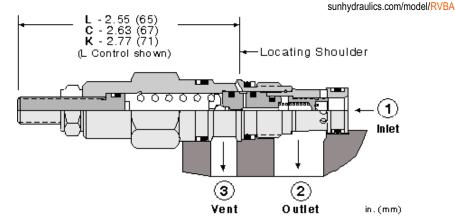
CONTROL	(B)	AIR PILOT RATIO	(W)	SEAL MATERIAL	(N)
B External 4-SAE Port		W 50:1		N Buna-N	
A External 1/8 NPTF Port		Y 75:1		E EPDM	
D External 1/8 BSPP Port				V Viton	

© 2023 Sun Hydraulics 47 of 210 CAPACITY: 7.5 gpm / CAVITY: T-163A









Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	EPDM: 990163014
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: RVBALAN

CONTROL (L) ADJUSTMENT RANGE (N) MATERIAL/COATING (A) SEAL MATERIAL

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 75 - 3000 psi (5 - 210 bar), 1000 psi (70 bar) Standard Setting

W 75 - 4500 psi (5 - 315 bar), 1000 psi (70 bar) Standard Setting

B 75 - 1500 psi (5 - 105 bar), 1000 psi (70 bar) Standard Setting

C 75 - 6000 psi (5 - 420 bar), 1000 psi (70 bar) Standard Setting

N 75 - 800 psi (5 - 55 bar), 400 psi (28 bar) Standard Setting

Q 75 - 400 psi (5 - 28 bar), 200 psi (14

bar) Standard Setting

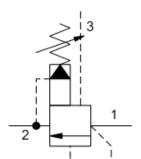
N Buna-N **E** EPDM

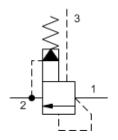
V Viton

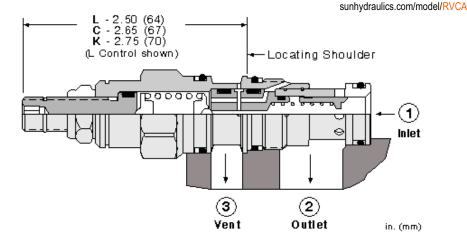
Standard Material/Coating /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 48 of 210









Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RVCALAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000
- D 25i (7000) Standard Setting psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N

E EPDM V Viton

(N) MATERIAL/COATING

Standard Material/Coat

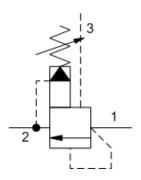
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

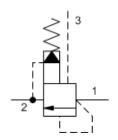
© 2023 Sun Hydraulics 49 of 210

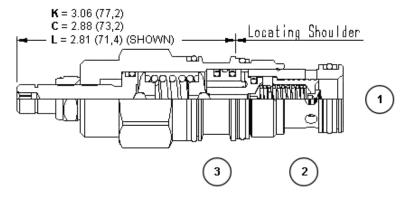
Ventable, pilot-operated, balanced piston relief valve SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A



sunhydraulics.com/model/RVEA







Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 15 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in ³ /min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel. **NOTES**

CONFIGURATION OPTIONS

Model Code Example: RVEALAN

Ctone	lard Cara	w Adiustm	ant
Silsing		W AMILISTIM	21011

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- O Handknob with Panel Mount
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N

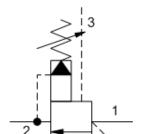
E EPDM V Viton

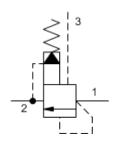
MATERIAL/COATING

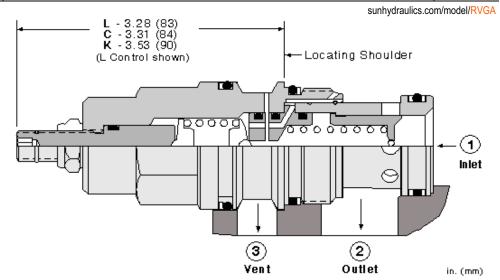
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 50 of 210









Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: RVGALAN

CONTROL	(L) ADJU	JSTMENT RANGE	(A)	SEAL MATERIAL	(N)	MATERIAL/COATING
·						

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting

C 150 - 6000 psi (10,5 - 420 bar), 1000

psi (70 bar) Standard Setting
D 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

N Buna-N E EPDM

V Viton

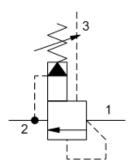
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

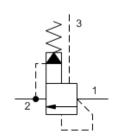
© 2023 Sun Hydraulics 51 of 210

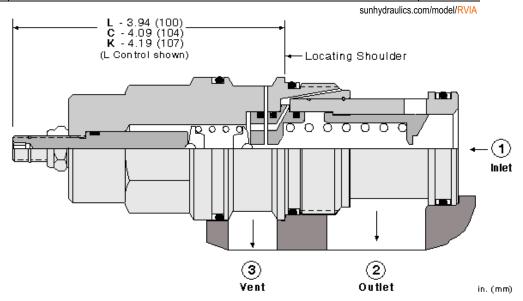
Ventable, pilot-operated, balanced piston relief valve

SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A









Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in ³ /min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: RVIALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting W 150 - 4500 psi (10,5 - 315 bar), 1000

psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi
- c (150 bat) Standard Setting bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting

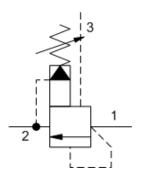
N Buna-N

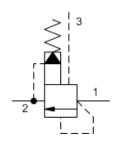
E EPDM V Viton Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

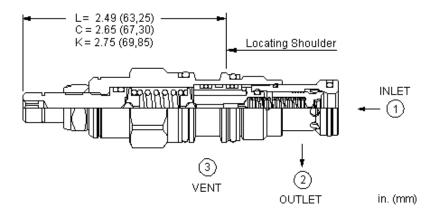
© 2023 Sun Hydraulics 52 of 210



sunhydraulics.com/model/RVCS







Ventable, pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990611007
Seal kit - Cartridge	Viton: 990611006

CONFIGURATION OPTIONS

Model Code Example: RVCSLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- A 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N E EPDM

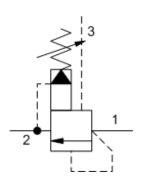
V Viton

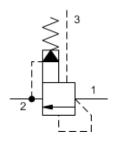
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

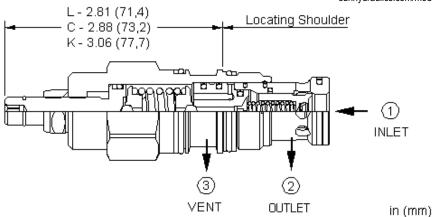
© 2023 Sun Hydraulics 53 of 210



sunhydraulics.com/model/RVES







Ventable, pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Factory Pressure Settings Established at	4 gpm	
Control Pilot Flow	15 - 20 in³/min.	
Maximum Valve Leakage at Reseat	10 drops/min.	
Response Time - Typical	2 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990402007	
Seal kit - Cartridge	Polyurethane: 990002002	
Seal kit - Cartridge	Viton: 990402006	

CONFIGURATION OPTIONS

Model Code Example: RVESLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

(L) ADJUSTMENT RANGE

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting N 60 - 800 psi (4 - 55 bar), 400 psi (28
- bar) Standard Setting
- Q 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- W 150 4500 psi (10,5 315 bar), 1000

psi (70 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N **E** EPDM

V Viton

(N) MATERIAL/COATING

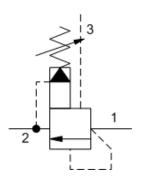
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

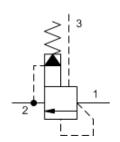
© 2023 Sun Hydraulics 54 of 210

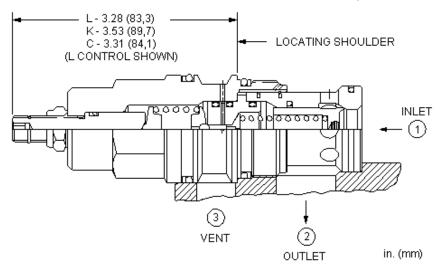
SERIES 3 / CAPACITY: 50 gpm / CAVITY: T-17A



sunhydraulics.com/model/RVGS







Ventable, pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Factory Pressure Settings Established at	4 gpm	
Control Pilot Flow	15 - 20 in³/min.	
Maximum Valve Leakage at Reseat	10 drops/min.	
Response Time - Typical	2 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990217007	
Seal kit - Cartridge	Polyurethane: 990217002	
Seal kit - Cartridge	Viton: 990217006	

CONFIGURATION OPTIONS

Model Code Example: RVGSLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 50 1500 psi (3,5 105 bar), 1000 psi
- (70 bar) Standard Setting
 C 150 6000 psi (10,5 420 bar), 1000
- psi (70 bar) Standard Setting

 N 60 800 psi (4 55 bar), 400 psi (28
- bar) Standard Setting **Q** 60 400 psi (4 28 bar), 200 psi (14
- bar) Standard Setting **N** 150 4500 psi (10.5 315 bar), 1000
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

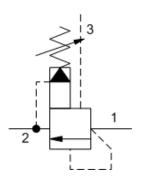
(N) MATERIAL/COATING

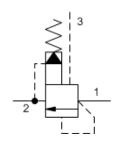
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

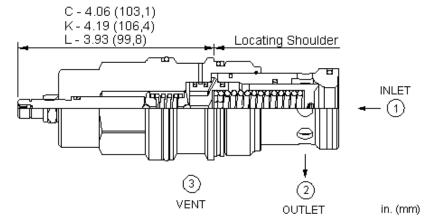
© 2023 Sun Hydraulics 55 of 210



sunhydraulics.com/model/RVIS







Ventable, pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990219007
Seal kit - Cartridge	Viton: 990219006

CONFIGURATION OPTIONS

Model Code Example: RVISLAN

CONTROL	(L)

- L Standard Screw Adjustment C Tamper Resistant - Factory Set
- K Handknob

(L) ADJUSTMENT RANGE

- **A** 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- N 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- Q 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- W 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

V Viton

(N) MATERIAL/COATING Standard Material/Coating

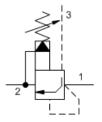
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

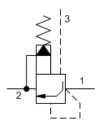
© 2023 Sun Hydraulics 56 of 210 Anti-Shock, ventable, pilot-operated, balanced poppet relief valve

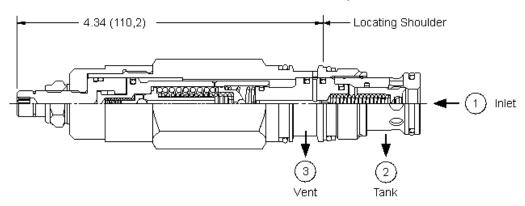
SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A



sunhydraulics.com/model/RVE







Ventable, pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. These 3 port valves include a vent port (port 3) that connects between the main piston and the pilot stage to provide for remote control by other pilot or 2-way valves. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Factory Pressure Settings Established at	4 gpm	
Control Pilot Flow	10 - 25 in³/min.	
Pressure Ramp Up Time	200 - 400 ms	
Response Time - Typical	2 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	4.5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
U.S. Patent #	6,039,070	
Seal kit - Cartridge	Buna: 990402007	
Seal kit - Cartridge	Polyurethane: 990002002	
Seal kit - Cartridge	Viton: 990402006	

NOTES

Patents are pending for this product.

CONFIGURATION OPTIONS

Model Code Example: RVETLAN

CONTROL (L) ADJUSTMENT RANGE L Standard Screw Adjustment A 500 - 3000 psi (35 - 210 bar), 1000 psi N Buna-N (70 bar) Standard Setting

C Tamper Resistant - Factory Set

B 500 - 1500 psi (35 - 105 bar), 1000 psi (70 bar) Standard Setting

C 1000 - 6000 psi (70 - 420 bar), 1000 psi (70 bar) Standard Setting

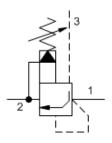
W 1000 - 4500 psi (70 - 315 bar), 1000 psi (70 bar) Standard Setting

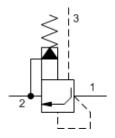
(A) SEAL MATERIAL V Viton

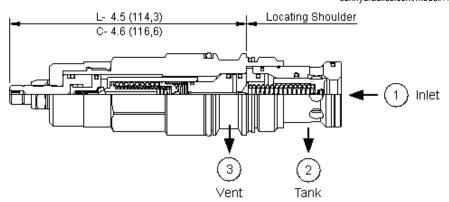
© 2023 Sun Hydraulics 57 of 210 SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-17A



sunhydraulics.com/model/RVGT







Ventable, pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. These 3 port valves include a vent port (port 3) that connects between the main piston and the pilot stage to provide for remote control by other pilot or 2-way valves. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Factory Pressure Settings Established at	4 gpm	
Control Pilot Flow	15 - 20 in³/min.	
Pressure Ramp Up Time	300 - 500 ms	
Response Time - Typical	2 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	4.5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
U.S. Patent #	6,039,070	
Seal kit - Cartridge	Buna: 990217007	
Seal kit - Cartridge	Polyurethane: 990217002	
Seal kit - Cartridge	Viton: 990217006	

NOTES

Patents are pending for this product.

CONFIGURATION OPTIONS

Model Code Example: RVGTLAN

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment C Tamper Resistant - Factory Set A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

B 500 - 1500 psi (35 - 105 bar), 1000 psi

(70 bar) Standard Setting C 1000 - 6000 psi (70 - 420 bar), 1000 psi

(70 bar) Standard Setting **W** 1000 - 4500 psi (70 - 315 bar), 1000 psi N Buna-N V Viton

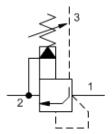
/AP Stainless Steel, Passivated

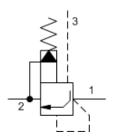
(70 bar) Standard Setting

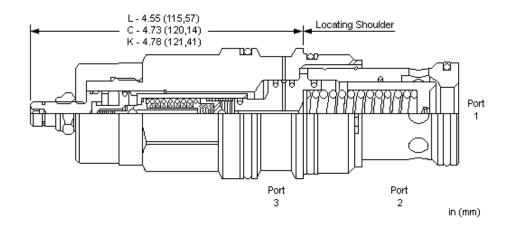
© 2023 Sun Hydraulics 58 of 210 SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A



sunhydraulics.com/model/RVIT







Ventable, pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. These 3 port valves include a vent port (port 3) that connects between the main piston and the pilot stage to provide for remote control by other pilot or 2-way valves. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Pressure Ramp Up Time	400 - 850 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990219007
Seal kit - Cartridge	Viton: 990219006

CONFIGURATION OPTIONS

Model Code Example: RVITLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

C 1000 - 6000 psi (70 - 420 bar), 1000 psi (70 bar) Standard Setting

W 1000 - 4500 psi (70 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-NV Viton

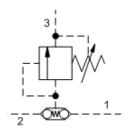
Standard Material/Coating

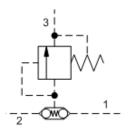
/AP Stainless Steel, Passivated

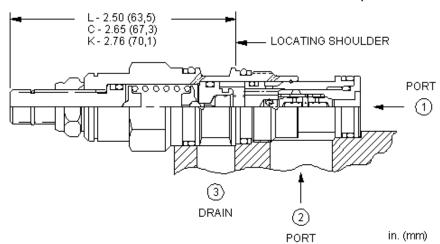
© 2023 Sun Hydraulics 59 of 210



sunhydraulics.com/model/RBAD







This direct-acting, pilot relief cartridge incorporates back-to-back check valves. This allows it to remotely control 2 other pilot-operated valves or act as a thermal relief for both ends of an actuator. Because capacity is limited to pilot flow, this valve should be used with other valves with comparable pilot flows.

TECHNICAL DATA

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

Maximum Valve Leakage at 110 SUS (24 cSt)	5 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge Polyurethane: 990011002	
Seal kit - Cartridge	Viton: 990011006

NOTES

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RBADLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- (A) SEAL MATERIAL A 25 - 3000 psi (1,7 - 210 bar), 1000 psi
- (70 bar) Standard Setting **B** 25 - 1500 psi (1,7 - 105 bar), 1000 psi
- C 25 6000 psi (1,7 420 bar), 1000 psi (70 bar) Standard Setting

(70 bar) Standard Setting

- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- W 25 4500 psi (1,7 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N

V Viton

MATERIAL/COATING Standard Material/Coating

(N)

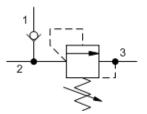
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

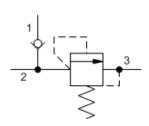
© 2023 Sun Hydraulics 60 of 210 Direct-acting relief valve - before check

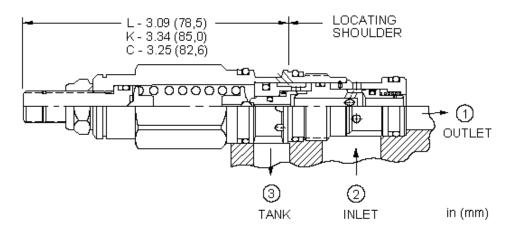
SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/HRDA







The relief-before-check cartridge is a CavitySaver™ (multi-function) valve incorporating a direct-acting relief tee'd in before a check function. When the pressure at the inlet (port 2) reaches the relief valve setting, the valve starts to open to tank (port 3), throttling flow to limit the pressure rise. The check valve flow is from the inlet (port 2) to the system port (port1). These valves are smooth and quiet, essentially zero leak, dirt tolerant, immune to silting and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat 5 drops/min.	
Check Cracking Pressure	25 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: HRDALAN

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set K Handknob

500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

D 200 - 700 psi (14 - 50 bar), 400 psi (28 bar) Standard Setting

W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting

V Viton

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 61 of 210



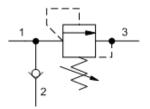
MODEL HRDB

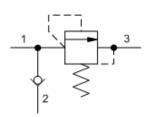
Direct-acting relief valve - after check

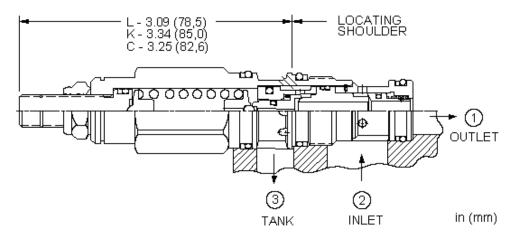
SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/HRDB







The relief-after-check cartridge is a CavitySaver™ (multi-function) valve incorporating a direct-acting relief tee'd in after a check function. The check valve flow is from the inlet (port 2) to the system port (port1). When the pressure in the system (port 1) reaches the relief valve setting, the valve starts to open to tank (port 3), 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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: HRDBLAN

(L) ADJUSTMENT RANGE CONTROL (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

500 - 3000 psi (35 - 210 bar), 100<u>0</u> psi (70 bar) Standard Setting

W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

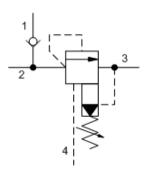
/AP Stainless Steel, Passivated

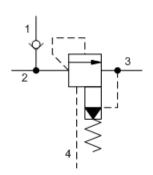
/LH Mild Steel, Zinc-Nickel

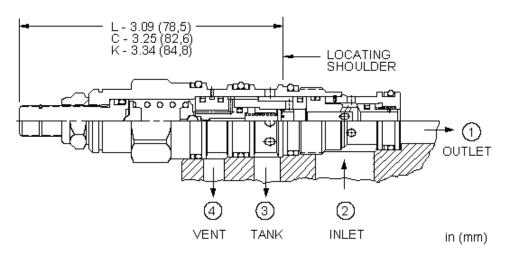
© 2023 Sun Hydraulics 62 of 210 SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A



sunhydraulics.com/model/HVCA







The ventable relief-before-check cartridge is a CavitySaverTM (multi-function) valve incorporating a ventable, pilot-operated, balanced piston relief tee'd in before a check function. When the pressure at the inlet (port 2) reaches the relief valve setting, the valve starts to open to tank (port 3), throttling flow to regulate the pressure. The check valve flow is from the inlet (port 2) to the system port (port1). The valve includes a vent port (port 4) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves.

These valves are accurate, have low pressure rise vs. flow, are smooth, quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt) 2 in³/min.@1000 psi	
Check Cracking Pressure	25 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: HVCALAN

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N)

A 75 - 3000 psi (5 - 210 bar), 1000 psi (70 bar) Standard Setting

B 75 - 1500 psi (5 - 105 bar), 1000 psi (70 bar) Standard Setting

D 75 - 800 psi (5 - 55 bar), 400 psi (28 bar) Standard Setting

W 75 - 4500 psi (5 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-NV Viton

© 2023 Sun Hydraulics 63 of 210



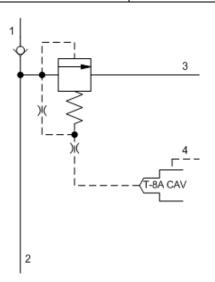
MODEL HVCA8

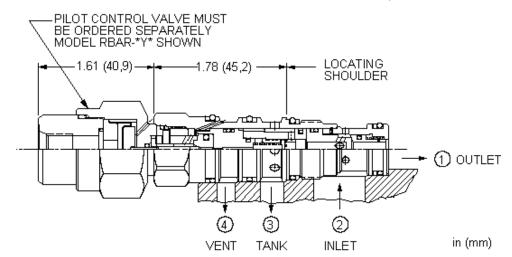
Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity - before check

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A



sunhydraulics.com/model/HVCA8





The relief-before-check cartridge is a CavitySaverTM (multi-function) valve incorporating a normally closed, balanced piston modulating element tee'd in before a check function. The valve incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 2) reaches the pilot control valve setting, the modulating element starts to open to tank (port 3), throttling flow to regulate the pressure. The T-8A pilot section is drained to port 4. The check valve flow is from the inlet (port 2) to the system port (port1).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Check Cracking Pressure	25 psi
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: HVCA8DN

 BIAS PRESSURE
 (D)
 SEAL MATERIAL

 D 75 psi (5 bar)
 N Buna-N

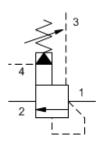
 E EPDM

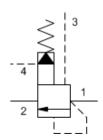
V Viton

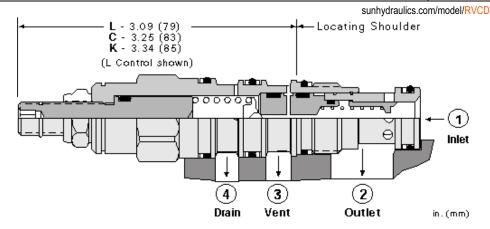
© 2023 Sun Hydraulics 64 of 210

SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-21A









Ventable, pilot-operated, balanced piston relief cartridges with external drain are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves and a drain (port 4) that makes them insensitive to back pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: RVCDLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

(70 bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting

100 - 3000 psi (7 - 210 bar), 1000 psi

- C 150 6000 psi (10,5 420 bar), 1000
- psi (70 bar) Standard Setting **D** 25 - 800 psi (1,7 - 55 bar), 400 psi (28
- bar) Standard Setting E 25 - 400 psi (1,7 - 28 bar), 200 psi (14
- bar) Standard Setting **W** 150 - 4500 psi (10,5 - 315 bar), 1000

psi (70 bar) Standard Setting

© 2023 Sun Hydraulics 65 of 210

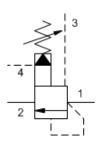


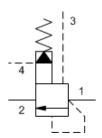


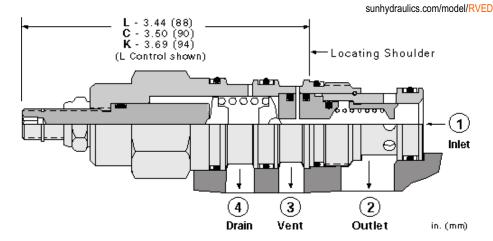
Ventable, pilot-operated, balanced piston relief valve with drain to port 4

SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-22A









Ventable, pilot-operated, balanced piston relief cartridges with external drain are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves and a drain (port 4) that makes them insensitive to back pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow 10 - 15 in³/min.	
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: RVEDLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- ${\bf K}$ Handknob

CONTROL

- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N

- E EPDM
- **V** Viton

© 2023 Sun Hydraulics 66 of 210

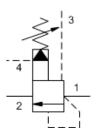


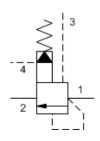


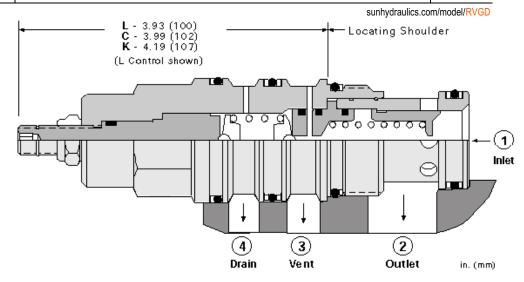
Ventable, pilot-operated, balanced piston relief valve with drain to port 4

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-23A









Ventable, pilot-operated, balanced piston relief cartridges with external drain are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves and a drain (port 4) that makes them insensitive to back pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: RVGDLAN

ī	Standard Screw Adjustment	
	Standard Screw Adjustinent	

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

(L) ADJUSTMENT RANGE (... A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28
- E bar) Standard Setting 25 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL

N Buna-N
V Viton

(N) MATERIAL/COATING

Standard Material/Coatin

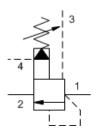
/AP Stainless Steel, Passivated

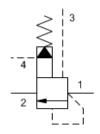
© 2023 Sun Hydraulics 67 of 210

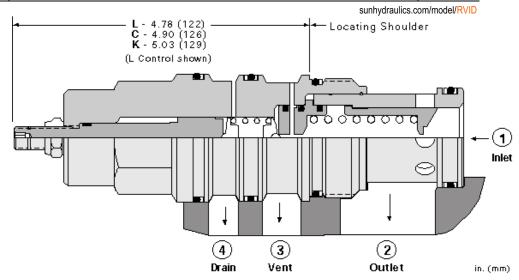
Ventable, pilot-operated, balanced piston relief valve with drain to port 4

SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-24A









Ventable, pilot-operated, balanced piston relief cartridges with external drain are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves and a drain (port 4) that makes them insensitive to back pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in ³ /min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	EPDM: 990024014
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: RVIDLAN

E EPDM

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

I Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- **A** 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000
- psi (70 bar) Standard Setting 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

Standard Material/Coatin

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 68 of 210

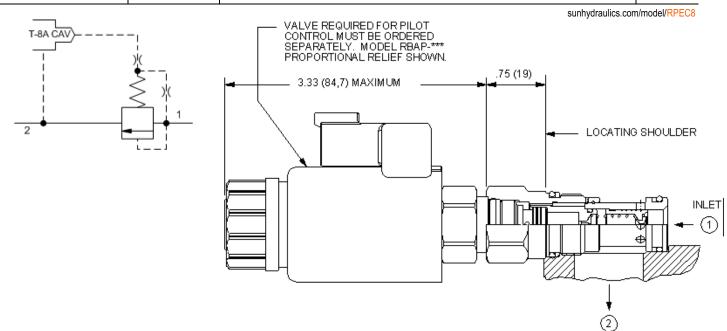




Pilot-operated, balanced piston relief main stage with integral T-8A control cavity

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

OUTLET

in. (mm)

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	EPDM: 990010014
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPEC8WN

(W) SEAL MATERIAL **ADJUSTMENT RANGE** W 100 - 5000 psi (7 - 350 bar)

N Buna-N

V Viton

D 25 - 3000 psi (1,7 - 210 bar) **E** EPDM

© 2023 Sun Hydraulics 69 of 210

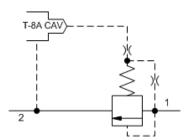


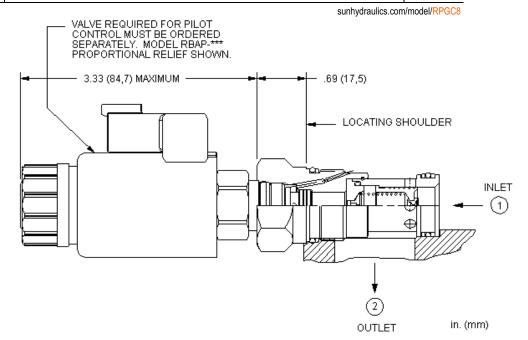


Pilot-operated, balanced piston relief main stage with integral T-8A control cavity

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A







This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPGC8WN

ADJUSTMENT RANGE

(W) SEAL MATERIAL

(N)

W 100 - 5000 psi (7 - 350 bar)

N Buna-N
E EPDM

D 25 - 3000 psi (1,7 - 210 bar)

V Viton

© 2023 Sun Hydraulics 70 of 210



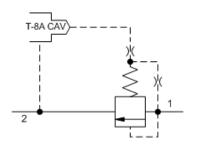


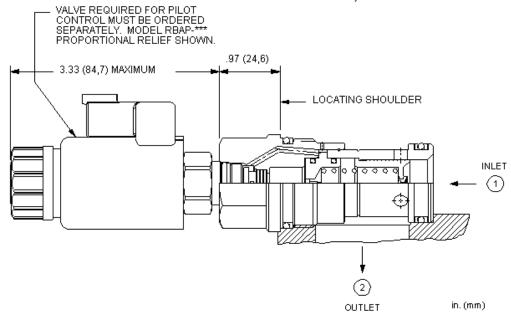
Pilot-operated, balanced piston relief main stage with integral T-8A control cavity

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A



sunhydraulics.com/model/RPIC8





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	EPDM: 990016014
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPIC8WN

ADJUSTMENT RANGE (W) SEAL MATERIAL (N
W 100 - 5000 psi (7 - 350 bar) N Buna-N
D 25 - 3000 psi (1,7 - 210 bar) E EPDM
V Viton

© 2023 Sun Hydraulics 71 of 210



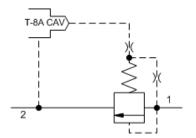


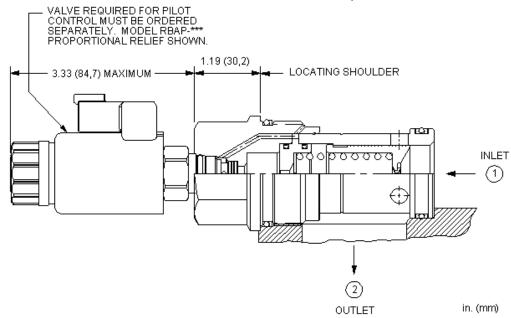
Pilot-operated, balanced piston relief main stage with integral T-8A control cavity

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A



sunhydraulics.com/model/RPKC8





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	EPDM: 990018014
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

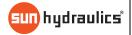
CONFIGURATION OPTIONS

Model Code Example: RPKC8WN

ADJUSTMENT RANGE (W) SEAL MATERIAL (N)
W 100 - 5000 psi (7 - 350 bar)
D 25 - 3000 psi (1,7 - 210 bar)
E EPDM

V Viton

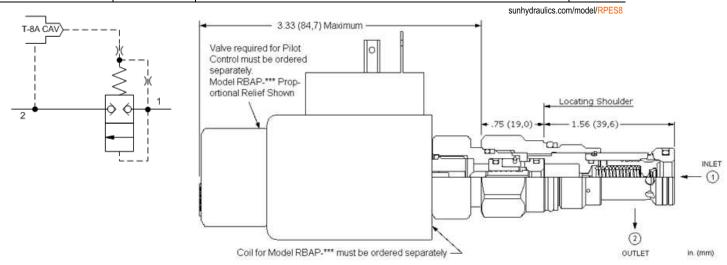
© 2023 Sun Hydraulics 72 of 210



MODEL RPES8 Pilot-operated, balanced poppet relief main stage with integral T-8A control

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and

TECHNICAL DATA

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

5000 psi
4 gpm
10 - 25 in³/min.
T-8A
20 - 25 lbf ft
7/8 in.
10 drops/min.
7 ms
Buna: 990310007
EPDM: 990310014
Viton: 990310006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPES8WN

ADJUSTMENT RANGE

(W) SEAL MATERIAL

(N) MATERIAL/COATING

W 1000 - 5000 psi (70 - 350 bar) **D** 50 - 1500 psi (3,5 - 105 bar)

N Buna-N **E** EPDM V Viton

Standard Material/Coating /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 73 of 210

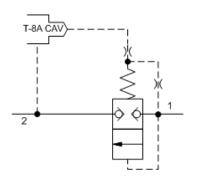


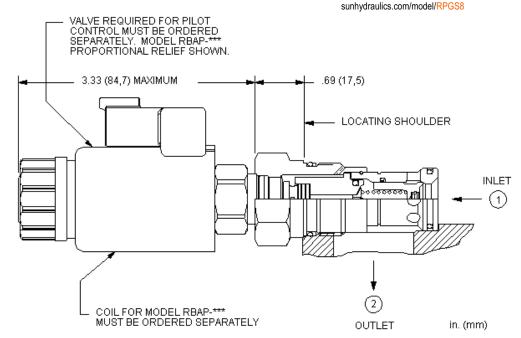


Pilot-operated, balanced poppet relief main stage with integral T-8A control cavity

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A







This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	EPDM: 990303014
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

·

Model Code Example: RPGS8N

ADJUSTMENT RANGE

B 50 - 1500 psi (3,5 - 105 bar)

E EPDM

W 100 - 5000 psi (7 - 350 bar)

N Buna-N

SEAL MATERIAL

V Viton

© 2023 Sun Hydraulics 74 of 210



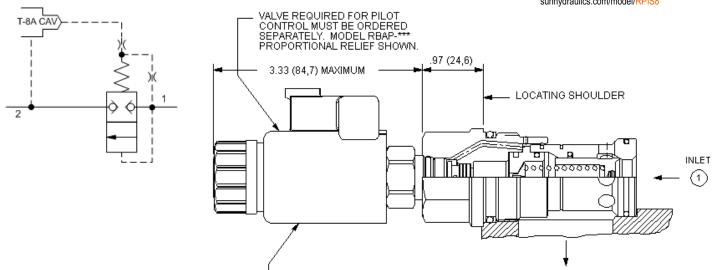
MODEL RPIS8

Pilot-operated, balanced poppet relief main stage with integral T-8A control cavity

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A



sunhydraulics.com/model/RPIS8



COIL FOR MODEL RBAP-***
MUST BE ORDERED SEPARATELY

This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

OUTLET

in. (mm)

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990316007
Seal kit - Cartridge	EPDM: 990316014
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990316006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPIS8N

ADJUSTMENT RANGE

SEAL MATERIAL

B 50 - 1500 psi (3,5 - 105 bar)

E EPDM

W 100 - 5000 psi (7 - 350 bar)

N Buna-N

V Viton

© 2023 Sun Hydraulics 75 of 210





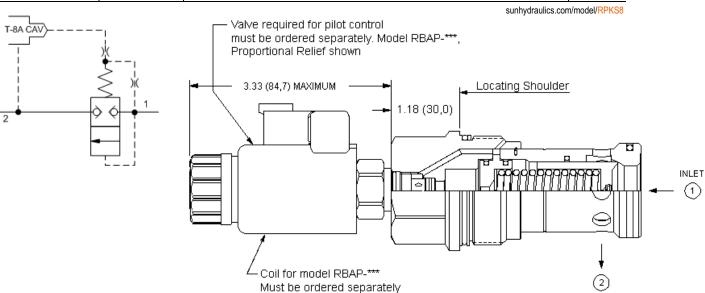
Pilot-operated, balanced poppet relief main stage with integral T-8A control cavity

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A



OUTLET

in. (mm)



This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990318007
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990318006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPKS8N

ADJUSTMENT RANGE	SEAL MATERIAL
B 50 - 1500 psi (3,5 - 105 bar)	N Buna-N
W 100 - 5000 psi (7 - 350 bar)	V Viton

© 2023 Sun Hydraulics 76 of 210

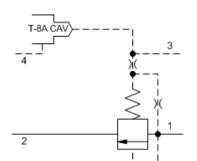


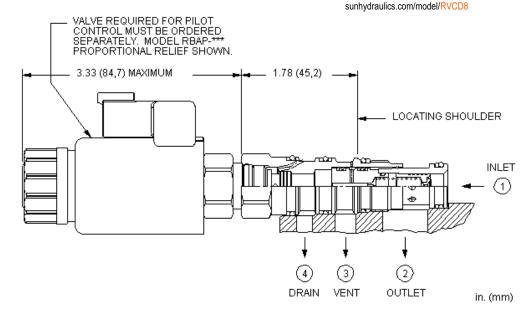
MODEL RVCD8

Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity and drain to port 4

SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-21A







This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is ventable, externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 4). The vent port (port 3) that tees in between the main piston and pilot control cartridge, allows the modulating element to also be controlled by remote pilot or 2-way valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RVCD8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL (N)
W 100 psi (7 bar)
N Buna-N

D 25 psi (1,7 bar)

₹ FRDM

© 2023 Sun Hydraulics 77 of 210

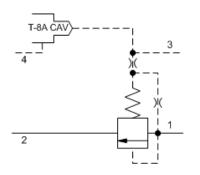


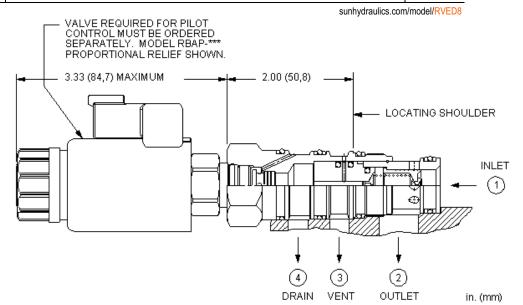
MODEL RVED8

Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity and drain to port 4

SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-22A







This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is ventable, externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 4). The vent port (port 3) that tees in between the main piston and pilot control cartridge, allows the modulating element to also be controlled by remote pilot or 2-way valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	EPDM: 990022014
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RVED8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar)

N Buna-N

D 25 psi (1,7 bar)

E EPDMV Viton

© 2023 Sun Hydraulics 78 of 210

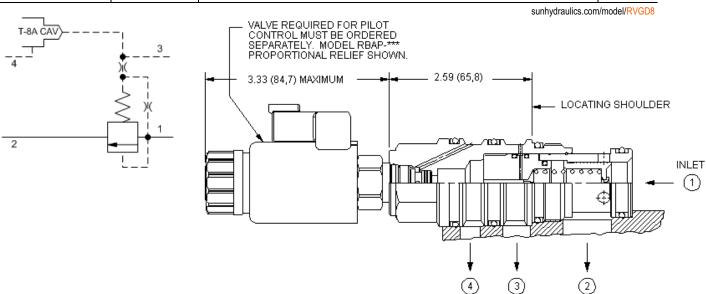




Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity and drain to port 4

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-23A





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is ventable, externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 4). The vent port (port 3) that tees in between the main piston and pilot control cartridge, allows the modulating element to also be controlled by remote pilot or 2-way valves.

DRAIN

TECHNICAL DATA

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

VENT

OUTLET

in. (mm)

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	EPDM: 990023014
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RVGD8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL (N
W 100 psi (7 bar) N Buna-N

D 25 psi (1,7 bar)

E EPDM V Viton

© 2023 Sun Hydraulics 79 of 210



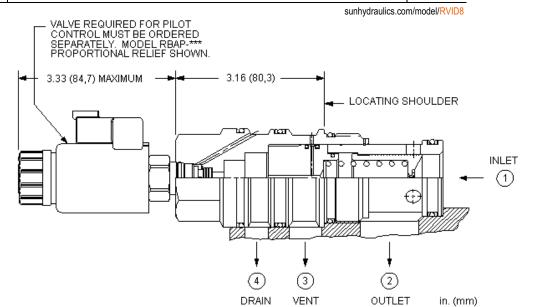


Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity and drain to port 4

SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-24A



T-8A CAV 3



This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is ventable, externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 4). The vent port (port 3) that tees in between the main piston and pilot control cartridge, allows the modulating element to also be controlled by remote pilot or 2-way valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RVID8WN

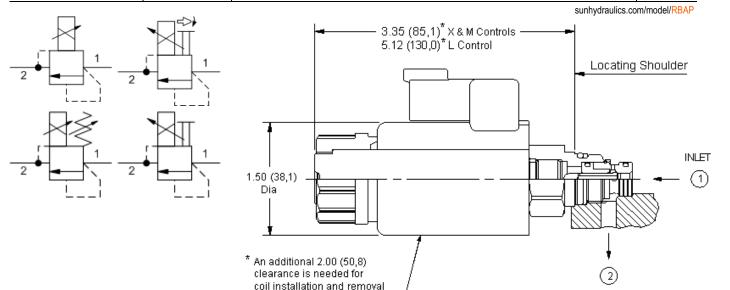
 MINIMUM CONTROL PRESSURE
 (W)
 SEAL MATERIAL
 (N)

 W 100 psi (7 bar)
 N Buna-N

 D 25 psi (1,7 bar)
 V Viton

© 2023 Sun Hydraulics 80 of 210





This 2-port, pilot-stage, direct-acting relief cartridge is an electro-proportionally controlled, pressure regulating valve. The proportional control allows for infinite, step-less adjustability within the selected pressure range. When the pressure at port 1 (inlet) is sufficient to overcome the solenoid forces, as determined by the analog input signal, the poppet lifts and allows flow from port 1 to port 2 (outlet). This pilot control cartridge utilizes the T-8A cavity so it can be used in conjunction with Sun's main stage, pressure control elements.

separately

Coil is not included in base model and must be specified

TECHNICAL DATA

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

OUTLET

in (mm)

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	1.5 in³/min.
Manual Override Force Requirement	10 lbs/1000 psi @ Port 1
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990208007
Seal kit - Cartridge	EPDM: 990008014
Seal kit - Cartridge	Viton: 990208006

NOTES Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.

CONFIGURATION OPTIONS

Model Code Example: RBAPXAN

			•			
CONTROL	(X) ADJUSTMENT RANGE	(A)	SEAL MATERIAL	(N)	COIL*	
X No Manual Override	A 300 - 3000 psi (20 - 210 bar)		N Buna-N			No coil
E Twist (Extended) Manual Override	B 150 - 1500 psi (10,5 - 105 bar)		E EPDM		212	DIN 43650-Form A, 12 VDC
L Manual Override - Adjustable	D 50 - 750 psi (3,5 - 50 bar)		V Viton		224	DIN 43650-Form A, 24 VDC
T Tuning Adjustment	W 500 - 5000 psi (35 - 350 bar)				224NX01	I DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01
					224NX02	driver 2 DIN 43650-Form A, 24 VDC, no

transient voltage suppression
(TVS) diodes, with XMD-02
driver

912 Deutsch DT04-2P, 12 VDC
912NX01 Deutsch DT04-2P, 12 VDC, no
transient voltage suppression
(TVS) diodes, with XMD-01
driver

912NX02 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

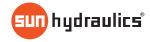
© 2023 Sun Hydraulics 81 of 210

924 Deutsch DT04-2P, 24 VDC
924NX01 Deutsch DT04-2P, 24 VDC, no
transient voltage suppression
(TVS) diodes, with XMD-01
driver

924NX02 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

* Additional coil options are available

© 2023 Sun Hydraulics 82 of 210



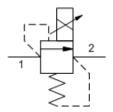


Electro-proportional relief valve - pilot capacity, high pressure setting with no command

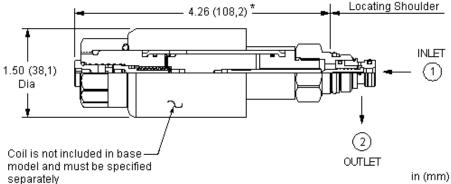
SERIES P / CAPACITY: .25 gpm / CAVITY: T-8A



sunhydraulics.com/model/RBAN



An additional 2.00 (50,8) clearance is needed for coil installation and removal



This 2-port, pilot-stage, direct-acting relief cartridge is an electro-proportionally controlled, normally-closed pressure regulating valve. The valve is spring biased closed to its highest setting (customer specified). Increasing current to the coil will proportionally decrease the pressure setting. When the pressure at port 1 (inlet) is sufficient to overcome the spring force minus the solenoid force, as determined by the analog input signal, the poppet lifts and allows flow from port 1 to port 2 (outlet). This pilot control cartridge utilizes the T-8A cavity so it can be used in conjunction with Sun's main stage, pressure control elements.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at Reseat	1.5 in³/min.	
Reseat	>85% of setting	
Seal kit - Cartridge	Buna: 990208007	
Seal kit - Cartridge	Viton: 990208006	

CONFIGURATION OPTIONS

Model Code Example: RBANXAN

(X) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) COIL * CONTROL

© 2023 Sun Hydraulics

A 3000 - 1500 psi (105 - 210 bar **B** 1500 - 800 psi (55 - 105 bar)

D 800 - 300 psi (20 - 55 bar)

W 5000 - 3000 psi (210 - 350 bar)

V Viton

212 DIN 43650-Form A, 12 VDC 224 DIN 43650-Form A, 24 VDC

224NX01 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

224NX02 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

Deutsch DT04-2P, 12 VDC 912NX01 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-01

driver 912NX02 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-02

driver 924 Deutsch DT04-2P, 24 VDC

924NX01 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

924NX02 Deutsch DT04-2P, 24 VDC, no

transient voltage suppression 83 of 210

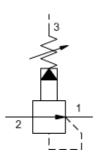
(TVS) diodes, with XMD-02 driver

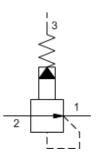
* Additional coil options are available

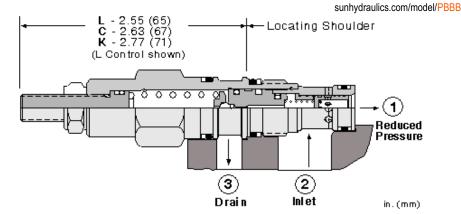
© 2023 Sun Hydraulics 84 of 210

Pilot-operated, pressure reducing valve CAPACITY: 5 gpm / CAVITY: T-163A









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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	1/2 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: PBBBLAN

CONTROL MATERIAL/COATING (L) ADJUSTMENT RANGE (A) SEAL MATERIAL

	Claridara Corow / N	ajaounone
^	Tompor Posistant	Easton, Cat

- K Handknob
- W Hex Wrench Adjustment

75 - 3000 psi (5 - 210 bar), 200 psi (14 bar) Standard Setting

- **W** 75 4500 psi (5 315 bar), 200 psi (14 bar) Standard Setting
- **B** 75 1500 psi (5 105 bar), 200 psi (14 bar) Standard Setting
- N 75 800 psi (5 55 bar), 200 psi (14 bar) Standard Setting
- Q 75 400 psi (5 28 bar), 200 psi (14 bar) Standard Setting

N Buna-N **E** EPDM

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

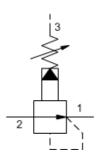
© 2023 Sun Hydraulics 85 of 210

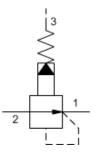


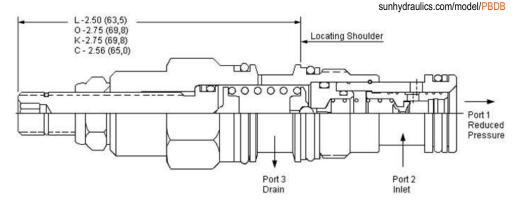


SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A









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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

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
- For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PBDBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

- 100 3000 psi (7 210 bar), 200 psi (14 bar) Standard Setting
- W 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- N 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- Q 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N Viton

(N) MATERIAL/COATING Standard Material/Coating

/AP Stainless Steel, Passivated

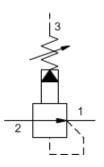
/LH Mild Steel, Zinc-Nickel

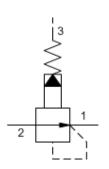
© 2023 Sun Hydraulics 86 of 210

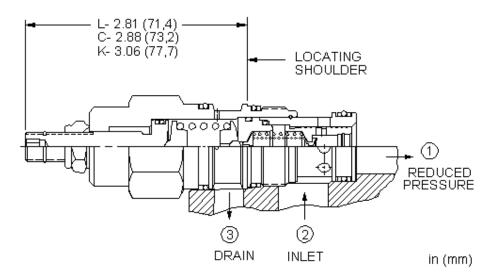
SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A



sunhydraulics.com/model/PBFB







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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

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
- For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PBFBLAN

Ctandard Carous Adjustment	Α.	100	2000 -

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- Q 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL (14 N Buna-N

Viton

(N) MATERIAL/COATING

Standard Material/Coating

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

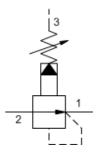
87 of 210

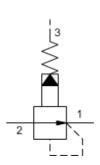
© 2023 Sun Hydraulics

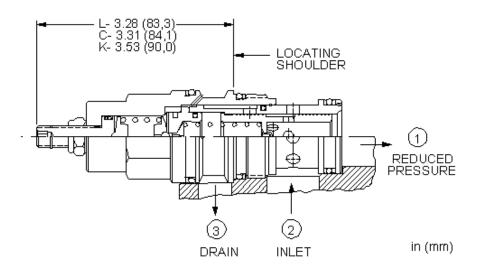
SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PBHB







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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

NOTES

CONTROL

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

CONFIGURATION OPTIONS

Model Code Example: PBHBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

© 2023 Sun Hydraulics

(L) ADJUSTMENT RANGE

100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL (14 N Buna-N

E EPDM V Viton

(N) MATERIAL/COATING

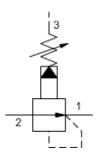
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

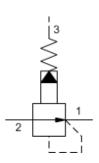
88 of 210

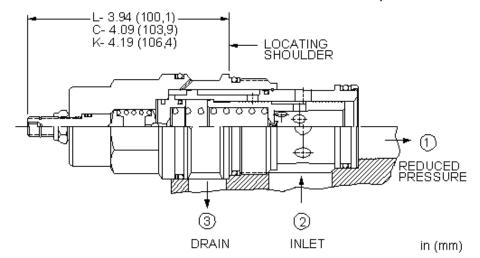
SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A



sunhydraulics.com/model/PBJB







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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

NOTES

CONTROL

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

CONFIGURATION OPTIONS

Model Code Example: PBJBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- **Q** Capped and Lockwired
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

: (7 0401) 000 : (44

100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **J** 25 1500 psi (1,7 105 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N E EPDM

(N) MATERIAL/COATING

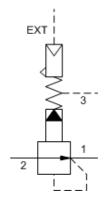
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

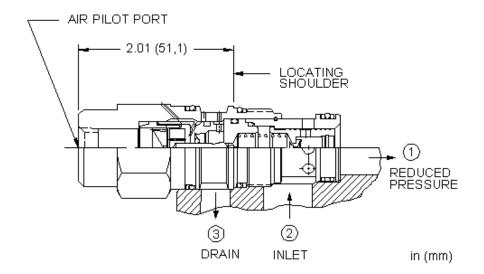
© 2023 Sun Hydraulics 89 of 210

SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A



sunhydraulics.com/model/PBFC





Air-controlled, pilot-operated pressure reducing cartridges use compressed air over a diaphragm instead of an adjustable spring as the setting to reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The air signal is supplied through a port in the hex-end of the cartridge and the hydraulic setting is directly proportional to the air setting at a ratio of 20:1 (hydraulic:air).

TECHNICAL DATA

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

Pilot Ratio	20:1
Maximum Operating Pressure	2000 psi
Control Pilot Flow	10 - 15 in³/min.
Maximum Air Pressure	150 psi
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: PBFCABN

 CONTROL
 (A)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

 A External 1/4 NPTF Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

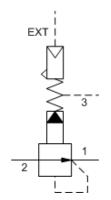
 V Viton

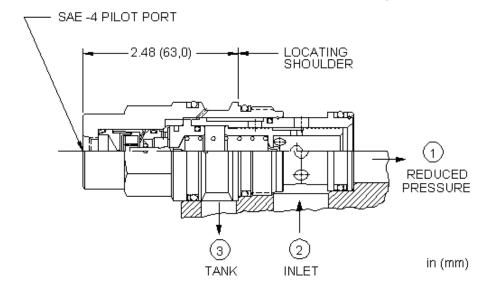
© 2023 Sun Hydraulics 90 of 210

Air-controlled, pilot-operated, pressure reducing valve SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PBHC





Air-controlled, pilot-operated pressure reducing cartridges use compressed air over a diaphragm instead of an adjustable spring as the setting to reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The air signal is supplied through a port in the hex-end of the cartridge and the hydraulic setting is directly proportional to the air setting at a ratio of 20:1 (hydraulic:air).

TECHNICAL DATA

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

Pilot Ratio	20:1
Maximum Operating Pressure	2000 psi
Control Pilot Flow	15 - 20 in³/min.
Maximum Air Pressure	150 psi
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: PBHCBBN

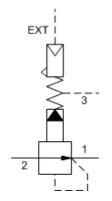
CONTROL	(B)	OPERATING RANGE	(B)	SEAL MATERIAL	(N)
B External 4-SAE Port		B 50 - 1500 psi (3,5 - 105 bar)		N Buna-N	
_				V Viton	

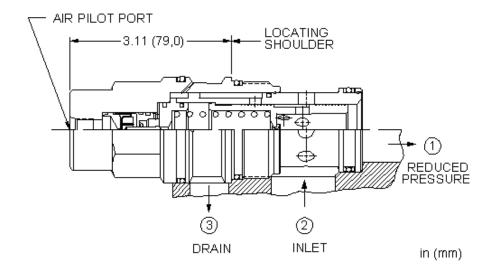
© 2023 Sun Hydraulics 91 of 210

SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A



sunhydraulics.com/model/PBJC





Air-controlled, pilot-operated pressure reducing cartridges use compressed air over a diaphragm instead of an adjustable spring as the setting to reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The air signal is supplied through a port in the hex-end of the cartridge and the hydraulic setting is directly proportional to the air setting at a ratio of 20:1 (hydraulic:air).

TECHNICAL DATA

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

Pilot Ratio	20:1		
Maximum Operating Pressure	2000 psi		
Control Pilot Flow	15 - 20 in³/min.		
Maximum Air Pressure	150 psi		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990019007		
Seal kit - Cartridge	Polyurethane: 990019002		
Seal kit - Cartridge	Viton: 990019006		

CONFIGURATION OPTIONS

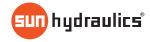
Model Code Example: PBJCBBN

 CONTROL
 (B)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

 B External 4-SAE Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

 V Viton
 V

© 2023 Sun Hydraulics 92 of 210

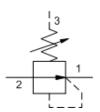


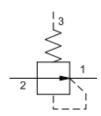


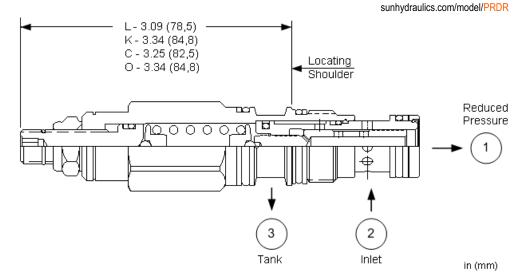
Direct-acting, pressure reducing valve

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A









Direct-acting, pressure reducing valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm			
Maximum Operating Pressure	5000 psi			
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.			
Adjustment - No. of CW Turns from Min. to Max. setting	5			
Locknut Hex Size	9/16 in.			
Locknut Torque	80 - 90 lbf in.			
Seal kit - Cartridge	Buna: 990011007			
Seal kit - Cartridge	EPDM: 990011014			
Seal kit - Cartridge	Polyurethane: 990011002			
Seal kit - Cartridge	Viton: 990011006			

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PRDRLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

A 500 - 3000 psi (35 - 210 bar), 700 psi (50 bar) Standard Setting

- B 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- D 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 25 200 psi (1,7 14 bar), 100 psi (7
- พ ริสา Standard Setting 15 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N E EPDM

V Viton

(N) MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 93 of 210

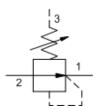


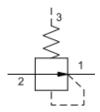


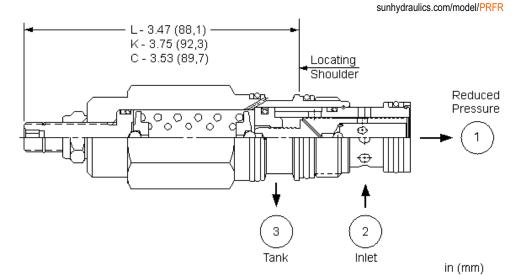
Direct-acting, pressure reducing valve

SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A









Direct-acting, pressure reducing valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm			
Maximum Operating Pressure	5000 psi			
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.			
Adjustment - No. of CW Turns from Min. to Max. setting	5			
Locknut Hex Size	9/16 in.			
Locknut Torque	80 - 90 lbf in.			
Seal kit - Cartridge	Buna: 990202007			
Seal kit - Cartridge	EPDM: 990202014			
Seal kit - Cartridge	Polyurethane: 990002002			
Seal kit - Cartridge	Viton: 990202006			

CONFIGURATION OPTIONS

Model Code Example: PRFRLAN

0, 1, 1,0	
Standard Screw	Aduletment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL osi N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

A 750 - 3000 psi (50 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 300 1500 psi (20 105 bar), 500 psi (35 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- **E** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting
- **W** 1000 4500 psi (70 315 bar), 1000 psi (70 bar) Standard Setting

Standard Material/Coating

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

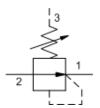
© 2023 Sun Hydraulics 94 of 210

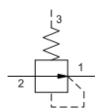
Direct-acting, pressure reducing valve

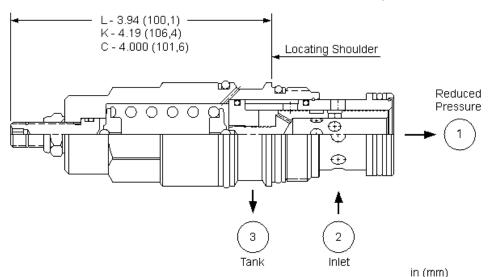
SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PRHR







Direct-acting, pressure reducing valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm		
Maximum Operating Pressure	5000 psi		
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.		
Adjustment - No. of CW Turns from Min. to Max. setting	5		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990017007		
Seal kit - Cartridge	Polyurethane: 990017002		
Seal kit - Cartridge	Viton: 990017006		

CONFIGURATION OPTIONS

Model Code Example: PRHRLAN

1				
-				

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

E EPDM

V Viton

(N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

A 750 - 3000 psi (50 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 300 1500 psi (20 105 bar), 500 psi (35 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- E 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting

N Buna-N Standard Material/Coating

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

W 1100 - 4500 psi (76 - 315 bar), 1100 psi (76 bar) Standard Setting

© 2023 Sun Hydraulics 95 of 210

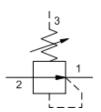


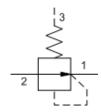


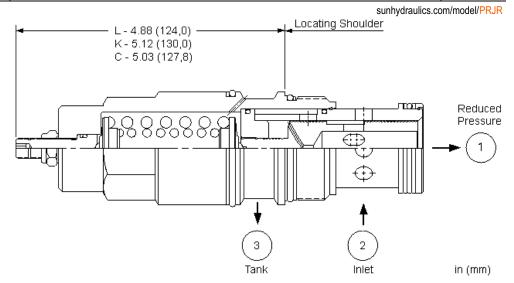
Direct-acting, pressure reducing valve

SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A









Direct-acting, pressure reducing valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: PRJRLAN

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 750 - 3000 psi (50 - 210 bar), 1000 psi (70 bar) Standard Setting

300 - 1500 psi (20 - 105 bar), 500 psi (35 bar) Standard Setting

D 200 - 800 psi (14 - 55 bar), 400 psi (28 bar) Standard Setting

E 100 - 400 psi (7 - 28 bar), 200 psi (14 bar) Standard Setting

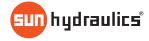
S 50 - 200 psi (3,5 - 14 bar), 100 psi (7 bar) Standard Setting

W 1100 - 4500 psi (76 - 315 bar), 1100 psi

(76 bar) Standard Setting

Standard Material/Coating /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 96 of 210

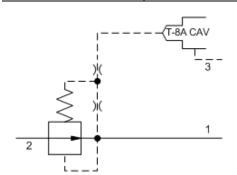


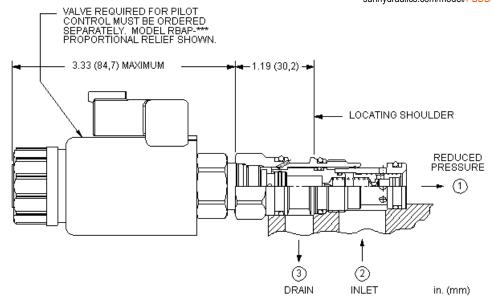
MODEL PBDB8

Pilot-operated, pressure reducing main stage with integral T-8A control cavity SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/PBDB8





This valve is a normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 3).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PBDB8WN

 BIAS PRESSURE
 (W)
 SEAL MATERIAL
 (N)

 W 100 psi (7 bar)
 N Buna-N

 D 25 psi (1,7 bar)
 V Viton

© 2023 Sun Hydraulics 97 of 210

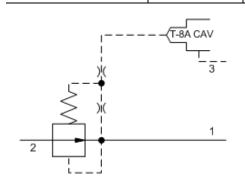


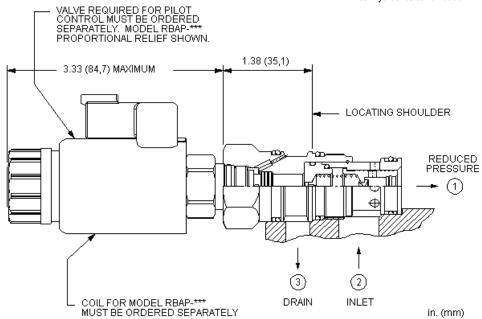


Pilot-operated, pressure reducing main stage with integral T-8A control cavity SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A



sunhydraulics.com/model/PBFB8





This valve is a normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 3).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PBFB8WN

W 100 nci (7 har)

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N

D 25 psi (1,7 bar)

N Buna-N V Viton

© 2023 Sun Hydraulics 98 of 210

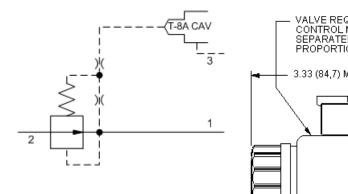


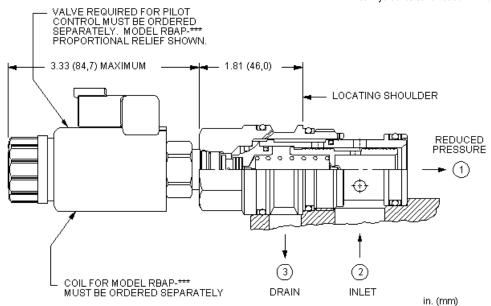


Pilot-operated, pressure reducing main stage with integral T-8A control cavity SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PBHB8





This valve is a normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PBHB8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar) **D** 25 psi (1,7 bar) N Buna-N **E** EPDM V Viton

© 2023 Sun Hydraulics 99 of 210

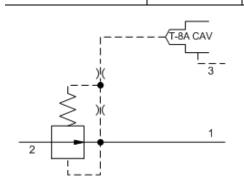


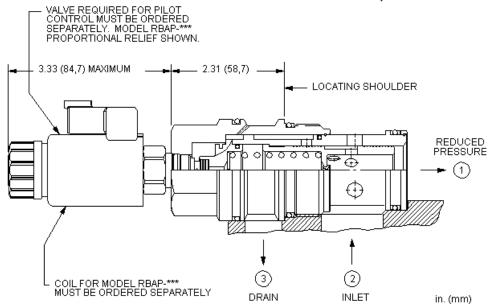


Pilot-operated, pressure reducing main stage with integral T-8A control cavity SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A



sunhydraulics.com/model/PBJB8





This valve is a normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PBJB8WN

(N)

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

N Buna-N **E** EPDM

W 100 psi (7 bar) **D** 25 psi (1,7 bar)

V Viton

© 2023 Sun Hydraulics 100 of 210

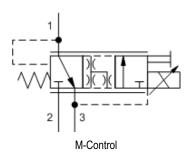


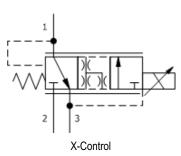


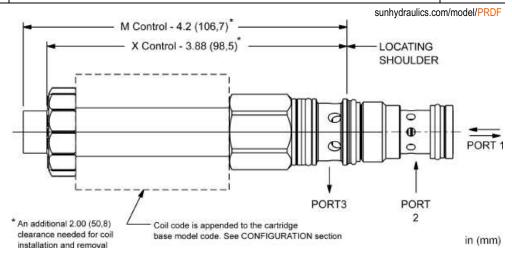
Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition (740 Series)

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-11A









This electro-proportional, direct-acting reducer/reliever valve reduces 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). The valve is biased to the relieving mode. Energizing the coil connects port 2 to port 1. Increasing the current to the coil will proportionally increase the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. This valve is open in the transition from reducing to relieving. It provides good pressure control and dynamic response. Optional full manual control is available.

This valve is designed to be used with 740 and 747 Series coils.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	33.5 in³/min.
Seal kit - Cartridge	Buna: 990511007
Seal kit - Cartridge	Viton: 990611006

NOTES

CONTROL

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: PRDFMDN

M Manual Override (Standard)

(M) OPERATING RANGE

(D) SEAL MATERIAL

(N) COIL *

X No Manual Override

D 50 - 485 psi (3,5 - 33,5 bar)

N Buna-N E EPDM

No coil * Additional coil options are available

B 100 - 1125 psi (7 - 77,5 bar) **E** 25 - 250 psi (1,7 - 18 bar)

S 10 - 100 psi (0,7 - 7 bar)

V Viton

© 2023 Sun Hydraulics 101 of 210

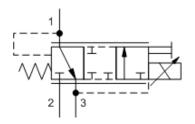


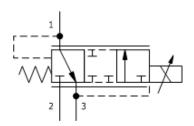


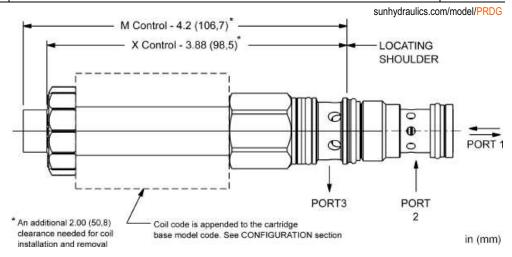
Electro-proportional, direct-acting, pressure reducing/relieving valve (740 Series)

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-11A









This electro-proportional, direct-acting reducer/reliever valve reduces 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). The valve is biased to the relieving mode. Energizing the coil connects port 2 to port 1. Increasing the current to the coil will proportionally increase the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. This valve is closed in the transition between reducing and relieving resulting in very low consumption of oil. Optional full manual control is available.

This valve is designed to be used with 740 and 747 Series coils.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	2.5 in ³ /min.
Seal kit - Cartridge	Buna: 990511007
Seal kit - Cartridge	Viton: 990511006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: PRDGMDN

 CONTROL
 (M)
 OPERATING RANGE
 (D)
 SEAL MATERIAL
 (N)
 COIL *

 M Manual Override (Standard)
 D 50 - 485 psi (3,5 - 33,5 bar)
 N Buna-N
 No coil

X No Manual Override **B** 100 - 1125 psi (7 - 77,5 bar) **E** 25 - 250 psi (1,7 - 18 bar)

V Viton

* Additional coil options are available

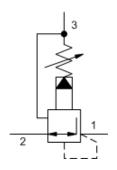
© 2023 Sun Hydraulics 102 of 210

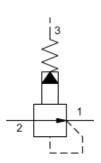
Pilot-operated, pressure reducing/relieving valve

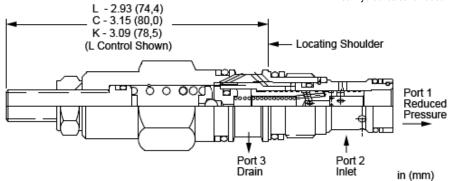
CAPACITY: 5 gpm / CAVITY: T-163A



sunhydraulics.com/model/PPBB







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.

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	1/2 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	EPDM: 990163014
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

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

CONFIGURATION OPTIONS

C Tamper Resistant - Factory Set

CONTROL

K Handknob

Model Code Example: PPBBLAN

L Standard Screw Adjustment A 75 - 3000 psi

A 75 - 3000 psi (5 - 210 bar), 200 psi (14 bar) Standard Setting

(L) ADJUSTMENT RANGE

bar) Standard Setting

B 75 - 1500 psi (5 - 105 bar), 200 psi (14

bar) Standard SettingN 75 - 800 psi (5 - 55 bar), 200 psi (14 bar) Standard Setting

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

N Buna-N

E EPDMV Viton

(A) SEAL MATERIAL

Standard Material/Coating

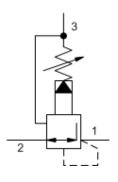
(N) MATERIAL/COATING

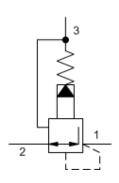
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

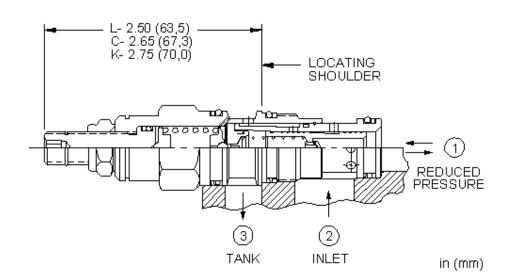
© 2023 Sun Hydraulics 103 of 210



sunhydraulics.com/model/PPDB







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.

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

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
- For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PPDBLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 200 psi (14 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting
 N 60 - 800 psi (4 - 55 bar), 200 psi (14

bar) Standard Setting
 60 - 400 psi (4 - 28 par), 200 psi (14 bar) Standard Setting

N Buna-N

V Viton

Standard Material/Coating

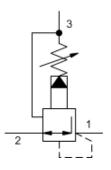
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

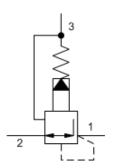
© 2023 Sun Hydraulics 104 of 210

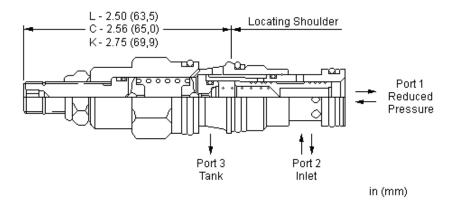
SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/PPDF







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.

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

(N)

NOTES

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PPDFLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

Y Tri-Grip Handknob

100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

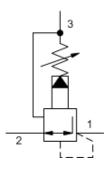
(A) SEAL MATERIAL (14 N Buna-N

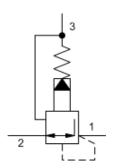
V Viton

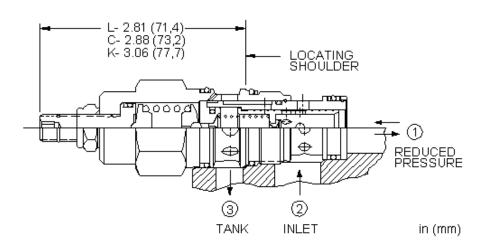
© 2023 Sun Hydraulics 105 of 210



sunhydraulics.com/model/PPFB







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.

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

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
- For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PPFBLAN

0	
Standard Scrow	Aduletment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- M Capped Screw Adjustment with Lockwire Holes
- **Q** Capped and Lockwired
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

N Buna-N E EPDM

V Viton

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 106 of 210

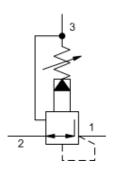


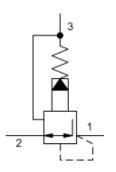


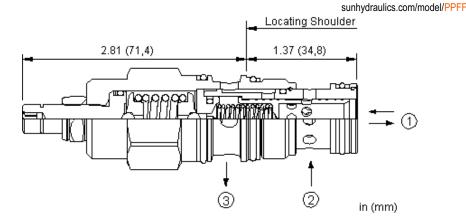
Pilot-operated, pressure reducing/relieving valve with drilled piston orifice

SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A









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.

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel. **NOTES**

CONFIGURATION OPTIONS

Model Code Example: PPFFLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL **A** 100 - 3000 psi (7 - 210 bar), 200 psi (14

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 200 psi

(14 bar) Standard Setting N 60 - 800 psi (4 - 55 bar), 200 psi (14 bar) Standard Setting

Q 60 - 400 psi (4 - 28 bar), 200 psi (14 bar) Standard Setting

W 100 - 5000 psi (7 - 350 bar), 200 psi (14 bar) Standard Setting

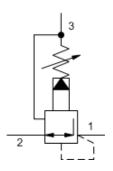
N Buna-N **V** Viton

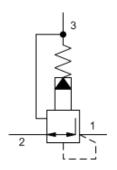
© 2023 Sun Hydraulics 107 of 210

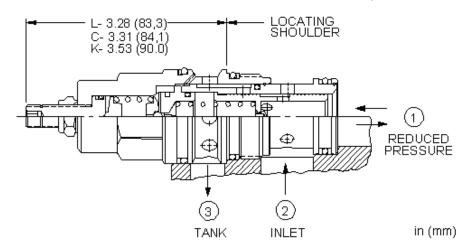
SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PPHB







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.

Standard Material/Coating

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

NOTES

CONTROL

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

CONFIGURATION OPTIONS

Model Code Example: PPHBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14

bar) Standard Setting

(A) SEAL MATERIAL (N) MATERIAL/COATING

N Buna-N E EPDM

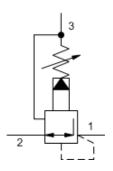
V Viton

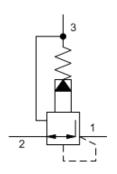
© 2023 Sun Hydraulics 108 of 210

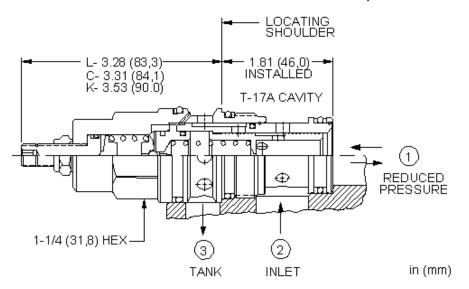
SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PPHF







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.

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

(N)

CONFIGURATION OPTIONS

Model Code Example: PPHFLAN

I Standard Scrow Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

Q Capped and Lockwired

(L) ADJUSTMENT RANGE (A) A 100 - 3000 psi (7 - 210 bar), 200 psi (14

100 - 3000 psi (7 - 210 bar), 200 psi (1 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **H** 30 3000 psi (2 210 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

(14 **N** Buna-l

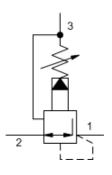
V Viton

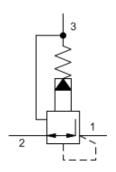
(A) SEAL MATERIAL

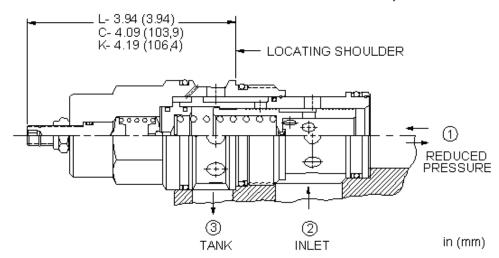
© 2023 Sun Hydraulics 109 of 210



sunhydraulics.com/model/PPJB







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.

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

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

CONFIGURATION OPTIONS

Model Code Example: PPJBLAN

CONTROL (L)	ADJUSTMENT RANGE	(A) SEAL MATERIAL	(N)	MATERIAL/COATING
-------------	------------------	-------------------	-----	------------------

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 200 psi (14

- bar) Standard Setting W 150 - 4500 psi (10,5 - 315 bar), 200 psi
- (14 bar) Standard Setting **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

E EPDM

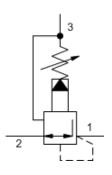
V Viton

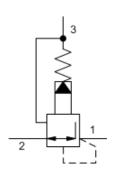
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

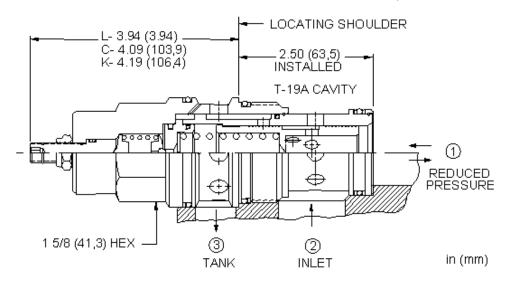
© 2023 Sun Hydraulics 110 of 210



sunhydraulics.com/model/PPJF







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.

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: PPJFLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N)

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- **A** 100 3000 psi (7 210 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **H** 30 3000 psi (2 210 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14
- bar) Standard Setting **W** 150 - 4500 psi (10,5 - 315 bar), 200 psi (14 bar) Standard Setting

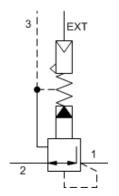
N Buna-N
V Viton

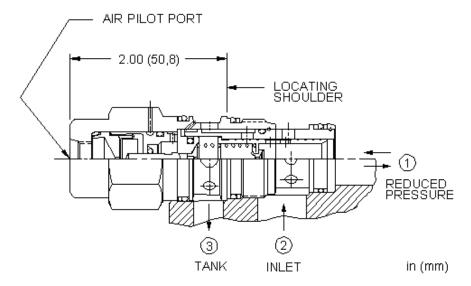
© 2023 Sun Hydraulics 111 of 210

SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A



sunhydraulics.com/model/PPFC





Air-controlled, pilot-operated pressure reducing/relieving valves use compressed air over a diaphragm instead of an adjustable spring to control the setting. These 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). The air signal is supplied through a port in the hex-end of the cartridge and the hydraulic setting is directly proportional to the air setting at a ratio of 20:1 (hydraulic:air).

TECHNICAL DATA

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

Pilot Ratio	20:1	
Maximum Operating Pressure	2000 psi	
Control Pilot Flow	10 - 15 in³/min.	
Maximum Air Pressure	150 psi	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990202007	
Seal kit - Cartridge	Polyurethane: 990002002	
Seal kit - Cartridge	Viton: 990202006	

CONFIGURATION OPTIONS

Model Code Example: PPFCABN

 CONTROL
 (A)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

 A External 1/4 NPTF Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

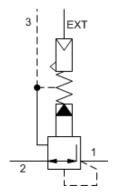
V Viton

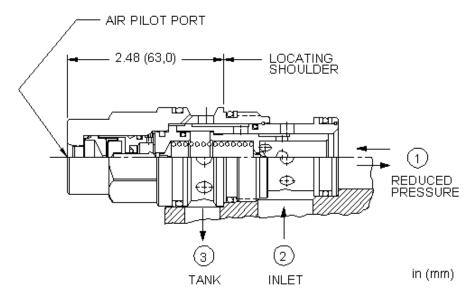
© 2023 Sun Hydraulics 112 of 210

SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PPHC





Air-controlled, pilot-operated pressure reducing/relieving valves use compressed air over a diaphragm instead of an adjustable spring to control the setting. These 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). The air signal is supplied through a port in the hex-end of the cartridge and the hydraulic setting is directly proportional to the air setting at a ratio of 20:1 (hydraulic:air).

TECHNICAL DATA

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

Pilot Ratio	20:1
Maximum Operating Pressure	2000 psi
Control Pilot Flow	15 - 20 in³/min.
Maximum Air Pressure	150 psi
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: PPHCBBN

 CONTROL
 (B)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

 B External 4-SAE Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

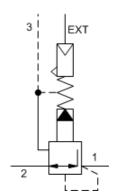
 V Viton

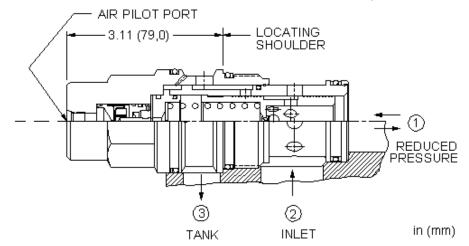
© 2023 Sun Hydraulics 113 of 210

SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A



sunhydraulics.com/model/PPJC





Air-controlled, pilot-operated pressure reducing/relieving valves use compressed air over a diaphragm instead of an adjustable spring to control the setting. These 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). The air signal is supplied through a port in the hex-end of the cartridge and the hydraulic setting is directly proportional to the air setting at a ratio of 20:1 (hydraulic:air).

TECHNICAL DATA

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

Pilot Ratio	20:1
Maximum Operating Pressure	2000 psi
Control Pilot Flow	15 - 20 in³/min.
Maximum Air Pressure	150 psi
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: PPJCBBN

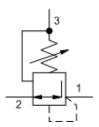
CONTROL	(B)	OPERATING RANGE	(B)	SEAL MATERIAL	(N)
B External 4-SAE Port		B 50 - 1500 psi (3,5 - 105 bar)		N Buna-N	
				V Viton	

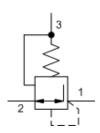
© 2023 Sun Hydraulics 114 of 210

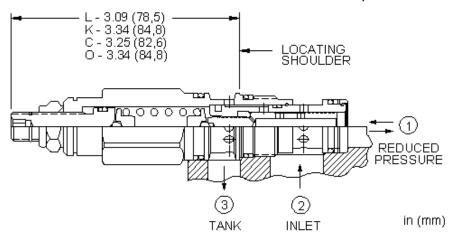
Direct-acting, pressure reducing/relieving valve SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/PRDB







Direct-acting, 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). These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PRDBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE (A 500 - 3000 psi (35 - 210 bar), 700 psi

- (50 bar) Standard Setting **W** 750 - 4500 psi (50 - 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 25 200 psi (1,7 14 bar), 100 psi (7

bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N E EPDM

V Viton

MATERIAL/COATING Standard Material/Coating

(N)

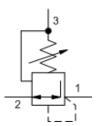
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

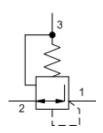
© 2023 Sun Hydraulics 115 of 210

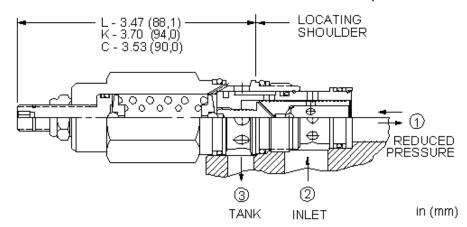
Direct-acting, pressure reducing/relieving valve SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A



sunhydraulics.com/model/PRFB







Direct-acting, 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). These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: PRFBLAN

V Viton

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

- A 750 3000 psi (50 210 bar), 1000 psi (70 bar) Standard Setting
 B 300 1500 psi (20 105 bar), 500 psi
- (35 bar) Standard Setting
- D 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
 D 400 rsi (7, 20 bar), 200 rsi (44 bar)
- **E** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting
- **W** 1000 4500 psi (70 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Standard Material/Coating
E EPDM /AP Stainless Steel, Passivated

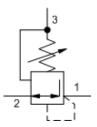
/LH Mild Steel, Zinc-Nickel

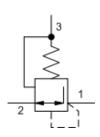
© 2023 Sun Hydraulics 116 of 210

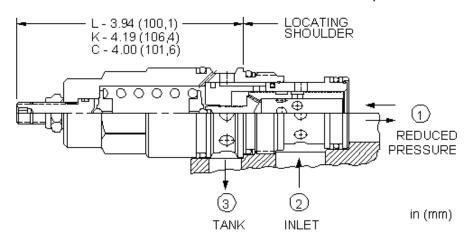
Direct-acting, pressure reducing/relieving valve SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PRHB







Direct-acting, 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). These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in ³ /min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: PRHBLAN

V Viton

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- **A** 750 3000 psi (50 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 500 psi (35 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- E 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting
- **W** 1100 4500 psi (76 315 bar), 1100 psi (76 bar) Standard Setting

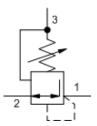
N Buna-N Standard Material/Coating
E EPDM /AP Stainless Steel, Passivated

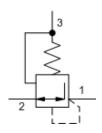
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

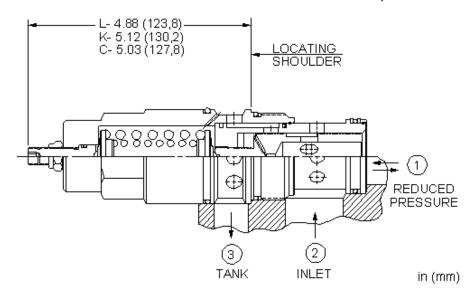
© 2023 Sun Hydraulics 117 of 210



sunhydraulics.com/model/PRJB







Direct-acting, 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). These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: PRJBLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

- **A** 750 3000 psi (50 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 500 psi (35 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- **E** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting
- **W** 1100 4500 psi (76 315 bar), 1100 psi (76 bar) Standard Setting

N Buna-NStandard Material/CoatingE EPDM/AP Stainless Steel, Passivated

V Viton

© 2023 Sun Hydraulics 118 of 210



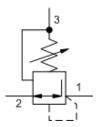
MODEL **PRBC**

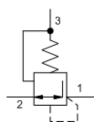
Direct-acting, pressure reducing/relieving valve with open transition

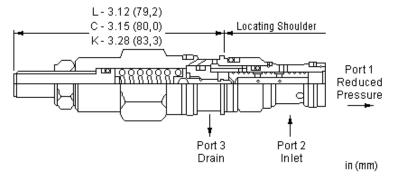
CAPACITY: 5 gpm / CAVITY: T-163A



sunhydraulics.com/model/PRBC







Direct-acting, pressure reducing valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure. This valve is open in the transition from reducing to relieving. It provides good pressure control and dynamic response.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	7
Locknut Hex Size	1/2 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: PRBCLAN

CONTROL

L Standard Screw Adjustment C Tamper Resistant - Factory Set

K Handknob

(L) ADJUSTMENT RANGE

A 500 - 3000 psi (35 - 210 bar), 700 psi

(50 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 200 psi (14 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

S 25 - 200 psi (1,7 - 14 bar), 100 psi (7 bar) Standard Setting

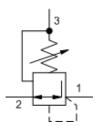
W 750 - 4500 psi (50 - 315 bar), 1000 psi (70 bar) Standard Setting

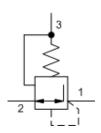
(A) SEAL MATERIAL N Buna-N V Viton

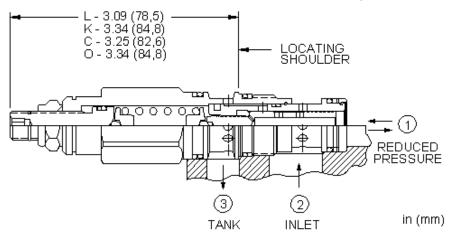
© 2023 Sun Hydraulics 119 of 210 SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/PRDC







Direct-acting, pressure reducing valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure. This valve is open in the transition from reducing to relieving. It provides good pressure control and dynamic response.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm	
Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt)	20 in³/min.	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990011007	
Seal kit - Cartridge	EPDM: 990011014	
Seal kit - Cartridge	Polyurethane: 990011002	
Seal kit - Cartridge	Viton: 990011006	

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PRDCLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- 500 3000 psi (35 210 bar), 700 psi (50 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- \$ 25 200 psi (1,7 14 bar), 100 psi (7 bar) Standard Setting
- **W** 750 4500 psi (50 315 bar), 1000 psi

(A) SEAL MATERIAL N Buna-N

E EPDM V Viton

(N) MATERIAL/COATING

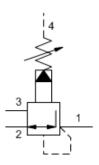
/AP Stainless Steel, Passivated

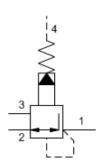
(70 bar) Standard Setting

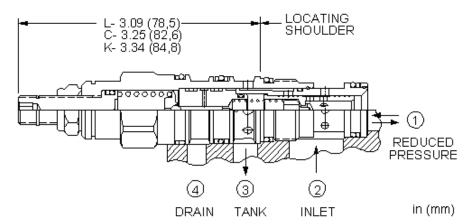
© 2023 Sun Hydraulics 120 of 210 SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A



sunhydraulics.com/model/PVDA







Externally drained, 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). Draining the pilot section at port 4 makes these valves insensitive to pressure at tank (port 3) and provides a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at blocked control port (dead headed)	
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

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

CONFIGURATION OPTIONS

Model Code Example: PVDALAN

	L	Standard	Screw Ad	justment		Α
--	---	----------	----------	----------	--	---

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

Y Tri-Grip Handknob

100 - 3000 psi (7 - 210 bar), 200 psi (14

(L) ADJUSTMENT RANGE

- bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

V Viton

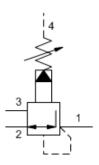
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

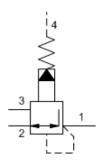
(N) MATERIAL/COATING

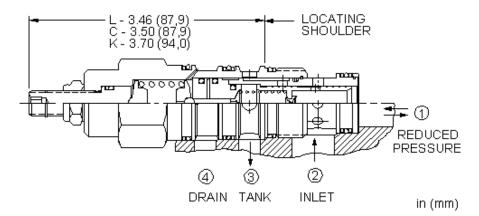
© 2023 Sun Hydraulics 121 of 210



sunhydraulics.com/model/PVFA







Externally drained, 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). Draining the pilot section at port 4 makes these valves insensitive to pressure at tank (port 3) and provides a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at blocked control port (dead headed		
Maximum Operating Pressure	5000 psi	
Control Pilot Flow	10 - 15 in³/min.	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990022007	
Seal kit - Cartridge	Polyurethane: 990022002	
Seal kit - Cartridge Viton: 990022006		

NOTES

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

CONFIGURATION OPTIONS

Model Code Example: PVFALAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

- 100 3000 psi (7 210 bar), 200 psi (14
- bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL (14 N Buna-N

E EPDM V Viton

(N) MATERIAL/COATING

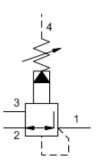
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

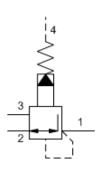
© 2023 Sun Hydraulics 122 of 210

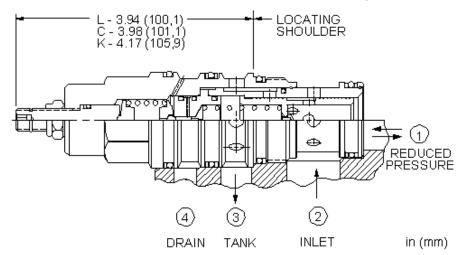
SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-23A



sunhydraulics.com/model/PVHA







Externally drained, 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). Draining the pilot section at port 4 makes these valves insensitive to pressure at tank (port 3) and provides a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)	
Maximum Operating Pressure	5000 psi	
Control Pilot Flow	15 - 20 in³/min.	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990023007	
Seal kit - Cartridge	EPDM: 990023014	
Seal kit - Cartridge	Polyurethane: 990023002	
Seal kit - Cartridge	Viton: 990023006	

NOTES

CONTROL

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

CONFIGURATION OPTIONS

Model Code Example: PVHALAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

K Handknob

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 200 psi (14 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 200 psi (14 bar) Standard Setting

N Buna-N **E** EPDM

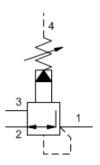
V Viton

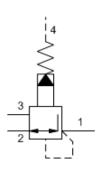
Standard Material/Coating /AP Stainless Steel, Passivated

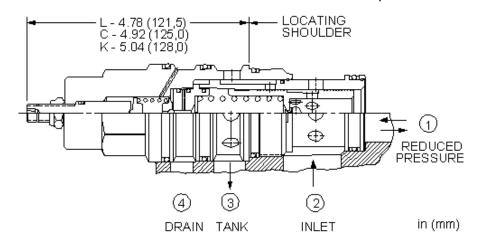
© 2023 Sun Hydraulics 123 of 210



sunhydraulics.com/model/PVJA







Externally drained, 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). Draining the pilot section at port 4 makes these valves insensitive to pressure at tank (port 3) and provides a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	EPDM: 990024014
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

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

CONFIGURATION OPTIONS

Model Code Example: PVJALAN

CONTROL

K Handknob

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 200 psi (14 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 200 psi (14 bar) Standard Setting

Standard Material/Coating /AP Stainless Steel, Passivated

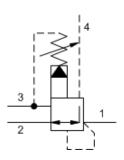
© 2023 Sun Hydraulics 124 of 210

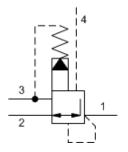


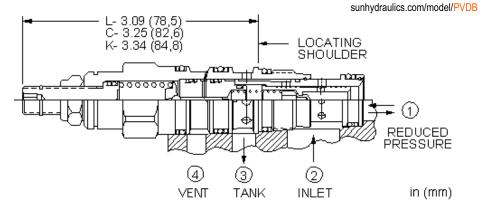
Ventable, pilot-operated, pressure reducing/relieving valve

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A









Ventable, pilot-operated pressure reducing/relieving valves reduce a high primary pressure at the inlet to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3). The vent port (port 4) can be used as a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)	
Maximum Operating Pressure	5000 psi	
Control Pilot Flow	7 - 10 in³/min.	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990021007	
Seal kit - Cartridge	EPDM: 990021014	
Seal kit - Cartridge	Polyurethane: 990021002	
Seal kit - Cartridge	Viton: 990021006	

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

CONFIGURATION OPTIONS

Model Code Example: PVDBLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

NOTES

- A 100 3000 psi (7 210 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

N Buna-NV Viton

Standard Material/Coating /AP Stainless Steel, Passivated

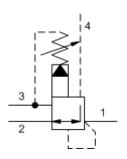
© 2023 Sun Hydraulics 125 of 210

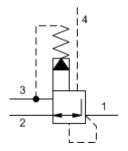
Ventable, pilot-operated, pressure reducing/relieving valve

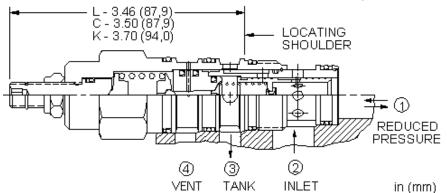
SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-22A











Ventable, pilot-operated pressure reducing/relieving valves reduce a high primary pressure at the inlet to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3). The vent port (port 4) can be used as a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

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

CONFIGURATION OPTIONS

L Standard Screw Adjustment

K Handknob

C Tamper Resistant - Factory Set

Model Code Example: PVFBLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 200 psi (14 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 200 psi (14 bar) Standard Setting

N Buna-N
V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

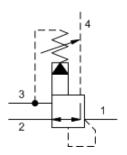
(N) MATERIAL/COATING

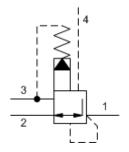
© 2023 Sun Hydraulics 126 of 210

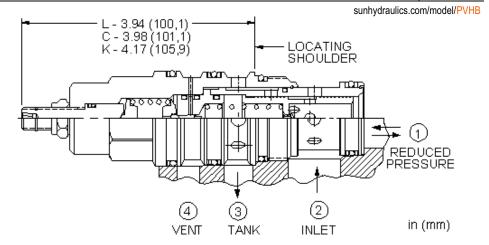
Ventable, pilot-operated, pressure reducing/relieving valve

SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-23A









Ventable, pilot-operated pressure reducing/relieving valves reduce a high primary pressure at the inlet to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3). The vent port (port 4) can be used as a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)	
Maximum Operating Pressure	5000 psi	
Control Pilot Flow	15 - 20 in³/min.	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990023007	
Seal kit - Cartridge	EPDM: 990023014	
Seal kit - Cartridge	Polyurethane: 990023002	
Seal kit - Cartridge	Viton: 990023006	

NOTES

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

CONFIGURATION OPTIONS

Model Code Example: PVHBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

(L) ADJUSTMENT RANGE

- 100 3000 psi (7 210 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

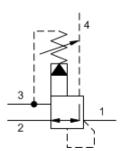
- E EPDM
- V Viton

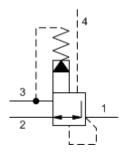
MATERIAL/COATING

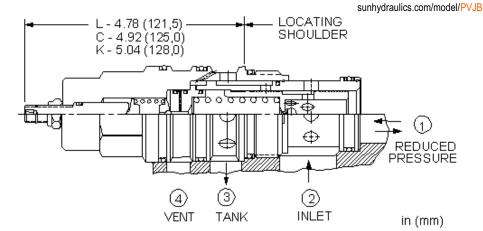
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 127 of 210 SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-24A









Ventable, pilot-operated pressure reducing/relieving valves reduce a high primary pressure at the inlet to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3). The vent port (port 4) can be used as a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

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

CONFIGURATION OPTIONS

Model Code Example: PVJBLAN

CONTROL (L) ADJUSTMENT RANGE 100 - 3000 psi (7 - 210 bar), 200 psi (14

(A) SEAL MATERIAL N Buna-N

V Viton

(N) MATERIAL/COATING

L Standard Screw Adjustment

K Handknob

C Tamper Resistant - Factory Set

bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 200 psi (14 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 200 psi (14 bar) Standard Setting

Standard Material/Coating

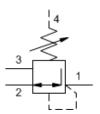
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

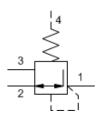
© 2023 Sun Hydraulics 128 of 210 Direct-acting, pressure reducing/relieving valve with drain to port 4

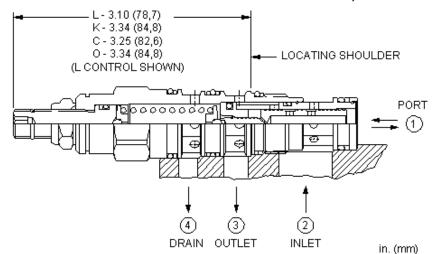
SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A



sunhydraulics.com/model/PSDB







Direct-acting, 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). Draining port 4 makes the valve insensitive to pressure at port 3. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

NOTES For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PSDBLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- O Handknob with Panel Mount
- A 500 3000 psi (35 210 bar), 700 psi (50 bar) Standard Setting
 B 50 1500 psi (3,5 105 bar), 200 psi
- (14 bar) Standard Setting **D** 25 800 psi (1,7 55 bar), 200 psi (14
- bar) Standard Setting **E** 25 400 psi (1,7 28 bar), 200 psi (14
- bar) Standard Setting5 25 200 psi (1,7 14 bar), 100 psi (7 bar) Standard Setting
- **W** 750 4500 psi (50 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-NV Viton

Standard Material/Coating
//LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 129 of 210



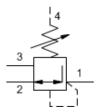


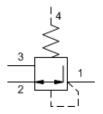
Direct-acting, pressure reducing/relieving valve with drain to port 4

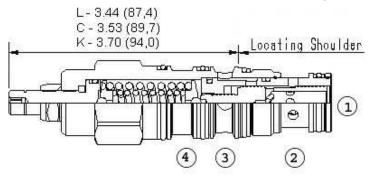
SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-22A



sunhydraulics.com/model/PSFB







Direct-acting, 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). Draining port 4 makes the valve insensitive to pressure at port 3. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: PSFBLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- **A** 750 3000 psi (50 210 bar), 1000 psi (70 bar) Standard Setting **B** 300 - 1500 psi (20 - 105 bar), 500 psi
- (35 bar) Standard Setting **D** 200 - 800 psi (14 - 55 bar), 400 psi (28 bar) Standard Setting
- E 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7

N Buna-N **V** Viton

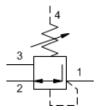
bar) Standard Setting

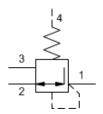
© 2023 Sun Hydraulics 130 of 210 Direct-acting, pressure reducing/relieving valve with drain to port 4

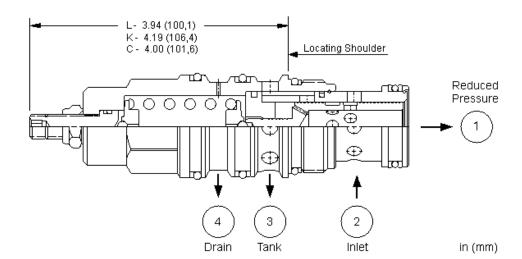
SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-23A



sunhydraulics.com/model/PSHB







Direct-acting, 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). Draining port 4 makes the valve insensitive to pressure at port 3. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	EPDM: 990023014
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: PSHBLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- A 750 3000 psi (50 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 500 psi (35 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- E 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting
- **W** 1100 4500 psi (76 315 bar), 1100 psi (76 bar) Standard Setting

N Buna-N

E EPDM

 ${f V}$ Viton

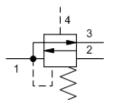
© 2023 Sun Hydraulics 131 of 210

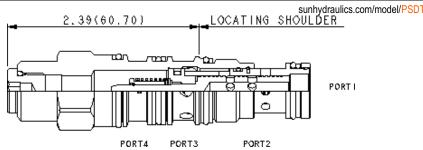


Direct-acting, pressure reducing/relieving main stage piloted from port 4

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A







The direct-acting reducer/reliever main section is meant to act as an interface between a low flow pressure source at port 4 and a circuit with higher flow requirements. The valve will reduce a high primary pressure at the inlet (port 2) to a reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3).

The valve incorporates a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Maximum Operating Pressure 5000 psi		
Maximum Valve Leakage at 110 SUS (24 cSt) 2.5 in³/min.		
Seal kit - Cartridge	Buna: 990021007	
Seal kit - Cartridge	EPDM: 990021014	
Seal kit - Cartridge	Polyurethane: 990021002	
Seal kit - Cartridge	Viton: 990021006	

CONFIGURATION OPTIONS

Model Code Example: PSDTXFN

CONTROL	(X) BIAS PRESSURE	(F) SEAL MATERIAL	(N)
X Not Adjustable	F 100 psi (7 bar)	N Buna-N	
		E EPDM	
		V Viton	

© 2023 Sun Hydraulics 132 of 210

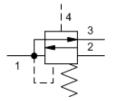


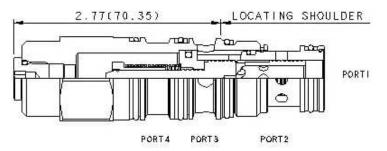
MODEL PSFT

Direct-acting, pressure reducing/relieving main stage piloted from port 4 SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-22A



sunhydraulics.com/model/PSFT





The direct-acting reducer/reliever main section is meant to act as an interface between a low flow pressure source at port 4 and a circuit with higher flow requirements. The valve will reduce a high primary pressure at the inlet (port 2) to a reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3).

The valve incorporates a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	EPDM: 990022014
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: PSFTXFN

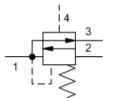
CONTROL	(X) BIAS PRESSURE	(F) SEAL MATERIAL	(N)
X Not Adjustable	F 100 psi (7 bar)	N Buna-N	
	<u> </u>	E EPDM	
		V Viton	

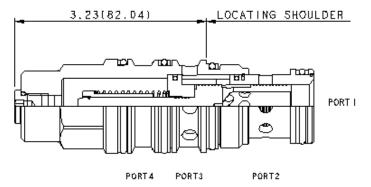
© 2023 Sun Hydraulics 133 of 210

SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-23A



sunhydraulics.com/model/PSHT





The direct-acting reducer/reliever main section is meant to act as an interface between a low flow pressure source at port 4 and a circuit with higher flow requirements. The valve will reduce a high primary pressure at the inlet (port 2) to a reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3).

The valve incorporates a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	EPDM: 990023014
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: PSHTXFN

CONTROL (X) BIAS PRESSURE (F) SEAL MATERIAL (N)

X Not Adjustable F 100 psi (7 bar) N Buna-N
E EPDM
V Viton

© 2023 Sun Hydraulics 134 of 210

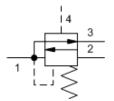


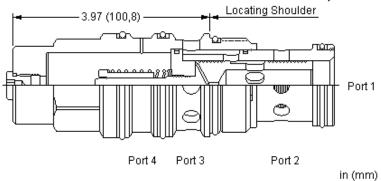
MODEL PSJT

Direct-acting, pressure reducing/relieving main stage piloted from port 4 SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-24A



sunhydraulics.com/model/PSJT





The direct-acting reducer/reliever main section is meant to act as an interface between a low flow pressure source at port 4 and a circuit with higher flow requirements. The valve will reduce a high primary pressure at the inlet (port 2) to a reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3).

The valve incorporates a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

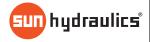
aximum Operating Pressure 5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt) 4 in³/min.@1000 psi	
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	EPDM: 990024014
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: PSJTXFN

CONTROL	(X) BIAS PRESSURE	(F) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	F 100 psi (7 bar)	N Buna-N	Standard Material/Coating
	-	E EPDM	/AP Stainless Steel, Passivated
		V Viton	

© 2023 Sun Hydraulics 135 of 210

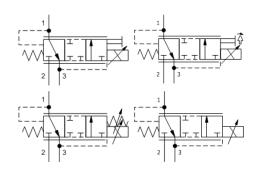


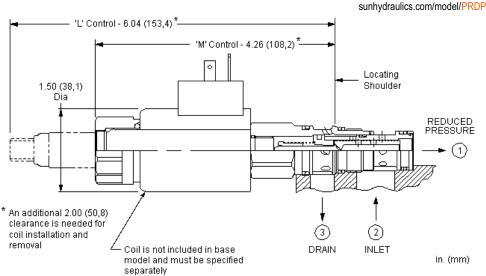


Electro-proportional, direct-acting, pressure reducing/relieving valve

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-11A







This electro-proportional, direct-acting reducer/reliever valve reduces 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). The valve is biased to the relieving mode. Energizing the coil connects port 2 to port 1. Increasing the current to the coil will proportionally increase the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. This valve is closed in the transition between reducing and relieving resulting in very low consumption of oil. Optional full manual control is available.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	2.5 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990511007
Seal kit - Cartridge	Viton: 990511006

NOTES

Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.

CONFIGURATION OPTIONS

Model Code Example: PRDPMDN

CONTROL (M) OPERATING RANGE (D) SEAL MATERIAL (N) COIL *

M Manual Override (Standard)E Twist (Extended) Manual Override

L Standard Screw Adjustment

X No Manual Override

D 50 - 485 psi (3,5 - 33,5 bar) **E** 25 - 250 psi (1,7 - 18 bar)

B 100 - 1125 psi (7 - 77,5 bar)

N Buna-N E EPDM

V Viton

21

212 DIN 43650-Form A, 12 VDC
 224 DIN 43650-Form A, 24 VDC
 224NX01 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

224NX02 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02

912 PreVRSch DT04-2P, 12 VDC

912NX01 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

912NX02 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-02

© 2023 Sun Hydraulics 136 of 210

driver

924 Deutsch DT04-2P, 24 VDC

924NX01 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

924NX02 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

* Additional coil options are available

© 2023 Sun Hydraulics 137 of 210

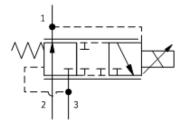


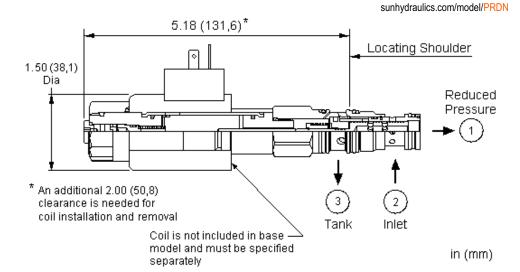


Electro-proportional, direct-acting, pressure reducing/relieving valve, high pressure setting with no command

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-11A







This electro-proportional, direct-acting reducer/reliever valve reduces 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). The valve is biased to the reducing mode, connecting port 2 to port 1 at a customer specified pressure setting. Increasing the current to the coil will proportionally decrease the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. This valve is closed in the transition between reducing and relieving resulting in very low consumption of oil.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	2.5 in³/min.
Seal kit - Cartridge	Buna: 990511007
Seal kit - Cartridge	Viton: 990511006

CONFIGURATION OPTIONS

Model Code Example: PRDNXDN

CONTROL	(X)	ADJUSTMENT RANGE	(D)	SEAL MATERIAL	(N)	COIL *

X No Manual Override

D 400 - 200 psi (14 - 28 bar)

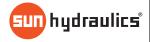
B 1000 - 400 psi (28 - 70 bar)

E 200 - 100 psi (7 - 14 bar)

N Buna-N V Viton No coil 212 DIN 43650-Form A, 12 VDC 224 DIN 43650-Form A, 24 VDC 912 Deutsch DT04-2P, 12 VDC 924 Deutsch DT04-2P, 24 VDC

* Additional coil options are available

© 2023 Sun Hydraulics 138 of 210

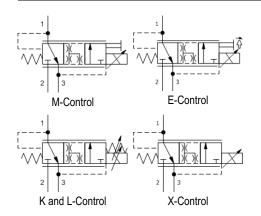


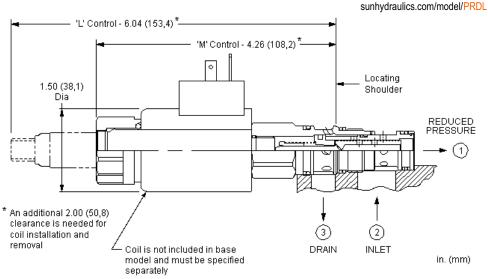


Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-11A







This electro-proportional, direct-acting reducer/reliever valve reduces 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). The valve is biased to the relieving mode. Energizing the coil connects port 2 to port 1. Increasing the current to the coil will proportionally increase the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. This valve is open in the transition from reducing to relieving. It provides good pressure control and dynamic response. Optional full manual control is available.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990511007
Seal kit - Cartridge	Viton: 990511006

NOTES

Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.

CONFIGURATION OPTIONS

Model Code Example: PRDLMDN

CONTROL (M) OPERATING RANGE (D) SEAL MATERIAL (N) COIL *

M Manual Override (Standard)

E Twist (Extended) Manual Override

L Standard Screw Adjustment

X No Manual Override

D 50 - 485 psi (3,5 - 33,5 bar) E 25 - 250 psi (1,7 - 18 bar)

B 100 - 1125 psi (7 - 77,5 bar)

S 10 - 100 psi (0,7 - 7 bar)

N Buna-N **E** EPDM V Viton

212 DIN 43650-Form A, 12 VDC 224 DIN 43650-Form A, 24 VDC

224NX01 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

224NX02 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02

Breversch DT04-2P, 12 VDC 912

912NX01 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

912NX02 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-02

© 2023 Sun Hydraulics 139 of 210

driver

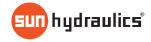
924 Deutsch DT04-2P, 24 VDC

924NX01 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

924NX02 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

© 2023 Sun Hydraulics 140 of 210

^{*} Additional coil options are available

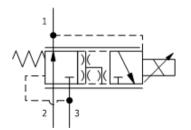


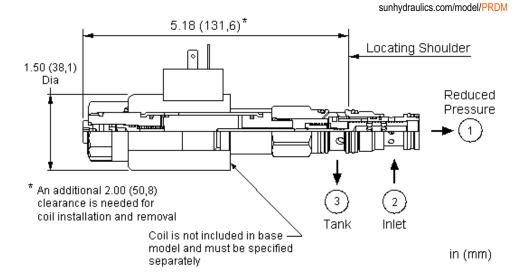


Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition - high pressure setting with no command

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-11A







This electro-proportional, direct-acting reducer/reliever valve reduces 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). The valve is biased to the reducing mode, connecting port 2 to port 1 at a customer specified pressure setting. Increasing the current to the coil will proportionally decrease the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. This valve is open in the transition from reducing to relieving. It provides good pressure control and dynamic response.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	20 in³/min.
Seal kit - Cartridge	Buna: 990511007
Seal kit - Cartridge	Viton: 990511006

CONFIGURATION OPTIONS

Model Code Example: PRDMXDN

CONTROL (X	ADJUSTMENT RANGE	(D) SEAL MATERIAL	(N)	COIL *
		<u> </u>		

 X
 No Manual Override

 D
 400 - 200 psi (14 - 28 bar)

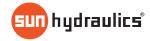
 B
 1000 - 400 psi (28 - 70 bar)

E 200 - 100 psi (7 - 14 bar) **S** 100 - 10 psi (0,7 - 7 bar) N Buna-NV Viton

 DIN 43650-Form A, 12 VDC DIN 43650-Form A, 24 VDC Deutsch DT04-2P, 12 VDC Deutsch DT04-2P, 24 VDC

* Additional coil options are available

© 2023 Sun Hydraulics 141 of 210

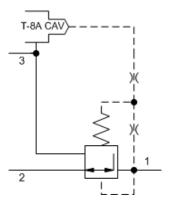




SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



in. (mm)



VALVE REQUIRED FOR PILOT
CONTROL MUST BE ORDERED
SEPARATELY. MODEL RBAP-***
PROPORTIONAL RELIEF SHOWN.

3.33 (84,7) MAXIMUM
LOCATING SHOULDER
REDUCED
PRESSURE

This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

TECHNICAL DATA

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

(2)

INLET

(3)

TANK

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PPDB8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

W 100 psi (7 bar)

N Buna-N

D 25 psi (1,7 bar)

V Viton

© 2023 Sun Hydraulics 142 of 210

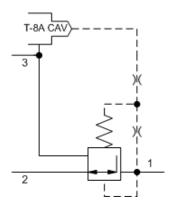


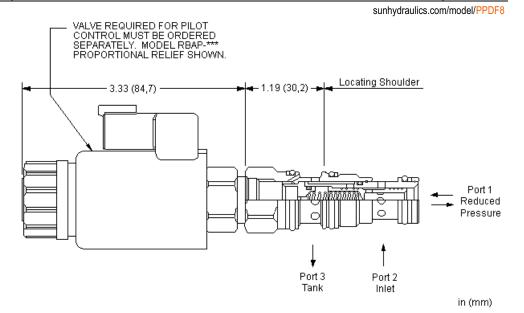


Pilot-operated, pressure reducing/relieving main stage with drilled piston orifice and integral T-8A control cavity

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A







This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

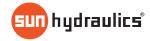
Model Code Example: PPDF8WN

 MINIMUM CONTROL PRESSURE
 (W)
 SEAL MATERIAL
 (N)

 W 100 psi (7 bar)
 N Buna-N

 D 25 psi (1,7 bar)
 V Viton

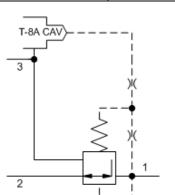
© 2023 Sun Hydraulics 143 of 210



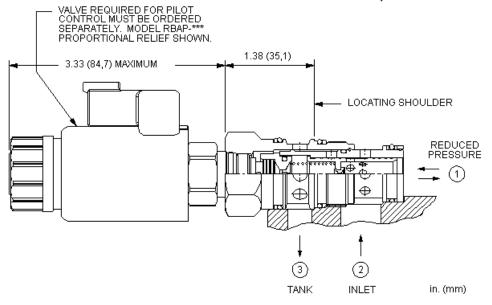


SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A





sunhydraulics.com/model/PPFB8



This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PPFB8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL (N) MATERIAL/COATING

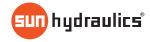
W 100 psi (7 bar)
D 25 psi (1,7 bar)

N Buna-N
E EPDM
V Viton

Standard Material/Coating

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 144 of 210

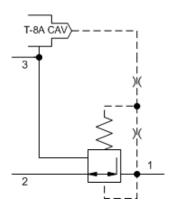


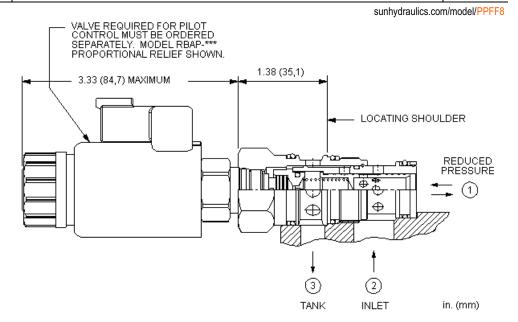


Pilot-operated, pressure reducing/relieving main stage with drilled piston orifice and integral T-8A control cavity

SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A







This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: PPFF8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL (N)

W 100 psi (7 bar)
D 25 psi (1,7 bar)

N Buna-N
V Viton

© 2023 Sun Hydraulics 145 of 210

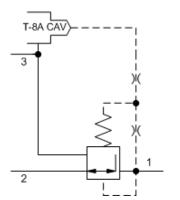


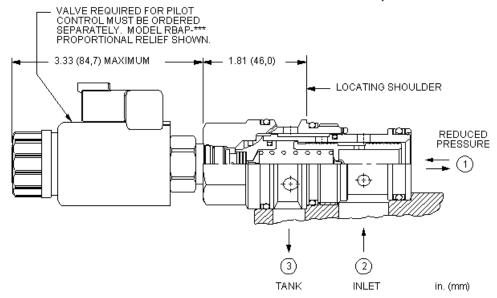


SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PPHB8





This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PPHB8WN

W 100 psi (7 bar)

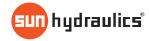
MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

N Buna-N

D 25 psi (1,7 bar)

E EPDMV Viton

© 2023 Sun Hydraulics 146 of 210



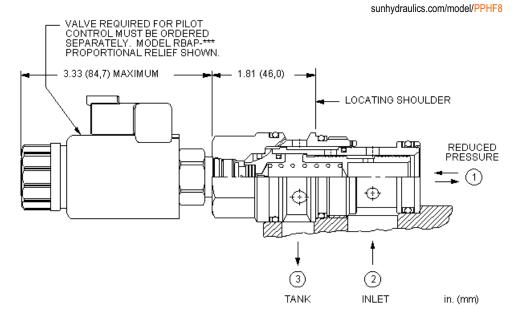


Pilot-operated, pressure reducing/relieving main stage with drilled piston orifice and integral T-8A control cavity

SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



7-8A CAV))((



This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PPHF8WN

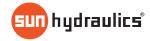
MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar)
D 25 psi (1,7 bar)

N Buna-N
V Viton

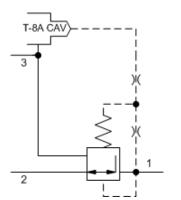
© 2023 Sun Hydraulics 147 of 210

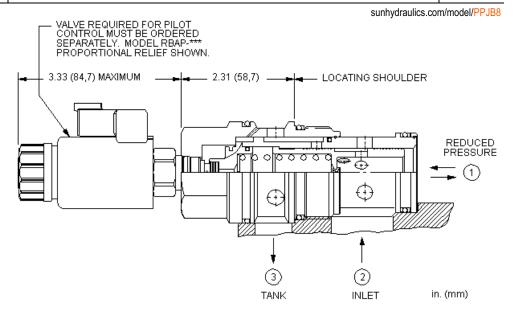




SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A







This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PPJB8WN

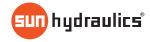
MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar)D 25 psi (1,7 bar)

N Buna-N V Viton

© 2023 Sun Hydraulics 148 of 210

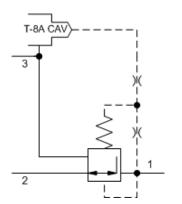


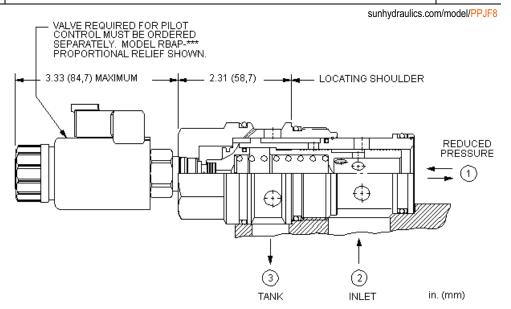


Pilot-operated, pressure reducing/relieving main stage with drilled piston orifice and integral T-8A control cavity

SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A







This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

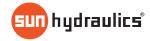
Model Code Example: PPJF8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

W 100 psi (7 bar)

D 25 psi (1,7 bar) V Viton

© 2023 Sun Hydraulics 149 of 210



2



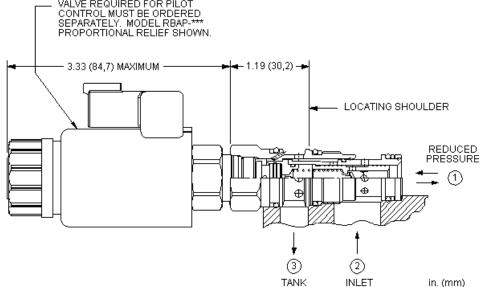
Pilot-operated, pressure reducing/relieving main stage with open transition and integral T-8A control cavity

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/PPDL8

VALVE REQUIRED FOR PILOT CONTROL MUST BE ORDERED SEPARATELY. MODEL RBAP-*** PROPORTIONAL RELIEF SHOWN. T-8A CAV 3 3.33 (84,7) MAXIMUM



This valve is a 3-way, normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the tank (port 3).

This valve is open in the transition from reducing to relieving which provides good pressure control and dynamic response at the expense of higher pilot flow in the deadheaded condition.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	25 - 30 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PPDL8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 150 psi (10,5 bar) **D** 100 psi (7 bar)

N Buna-N **E** EPDM

V Viton

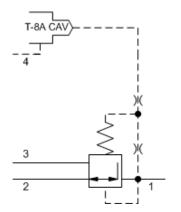
© 2023 Sun Hydraulics 150 of 210

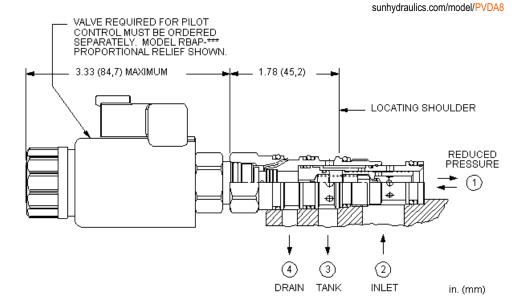




SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A







This valve is a 3-way, normally open modulating element, externally drained, that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 4).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

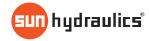
Model Code Example: PVDA8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL (

W 100 psi (7 bar)
D 25 psi (1,7 bar)

N Buna-N V Viton

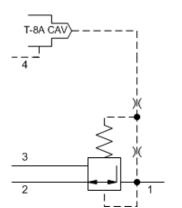
© 2023 Sun Hydraulics 151 of 210

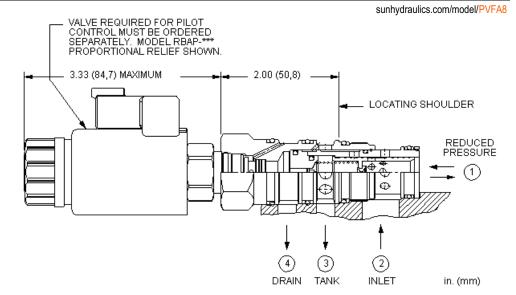




SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-22A







This valve is a 3-way, normally open modulating element, externally drained, that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 4).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PVFA8WN

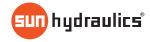
MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar)
D 25 psi (1,7 bar)

N Buna-N
E EPDM
V Viton

© 2023 Sun Hydraulics 152 of 210

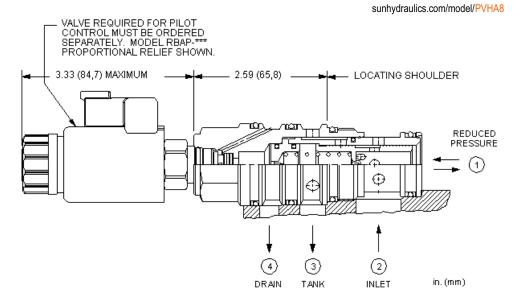




SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-23A



T-8A CAV -----



This valve is a 3-way, normally open modulating element, externally drained, that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 4).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Control Pilot Flow	15 - 20 in³/min.	
Pilot Control Cavity	T-8A	
Pilot Control Valve Installation Torque	20 - 25 lbf ft	
Pilot Control Valve Hex Size	7/8 in.	
Seal kit - Cartridge	Buna: 990023007	
Seal kit - Cartridge	Polyurethane: 990023002	
Seal kit - Cartridge	Viton: 990023006	

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PVHA8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar)
D 25 psi (1,7 bar)

N Buna-N
E EPDM
V Viton

© 2023 Sun Hydraulics 153 of 210

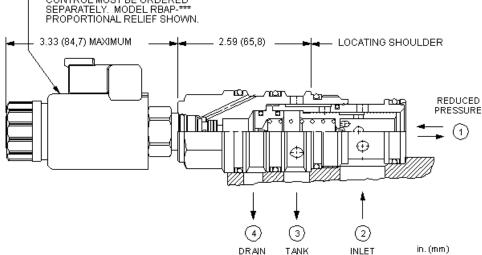




SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-23A



sunhydraulics.com/model/PVHL8 VALVE REQUIRED FOR PILOT CONTROL MUST BE ORDERED SEPARATELY. MODEL RBAP-*** PROPORTIONAL RELIEF SHOWN. T-8A CAV 3.33 (84,7) MAXIMUM 2.59 (65,8)



This valve is a 3-way, normally open modulating element, externally drained, that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 4).

This valve is open in the transition from reducing to relieving which provides good pressure control and dynamic response at the expense of higher pilot flow in the deadheaded condition.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	25 - 30 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	EPDM: 990023014
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PVHL8WN

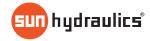
MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

W 150 psi (10,5 bar) **D** 100 psi (7 bar)

N Buna-N **E** EPDM

V Viton

© 2023 Sun Hydraulics 154 of 210

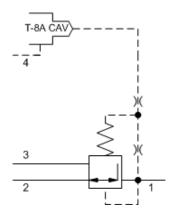


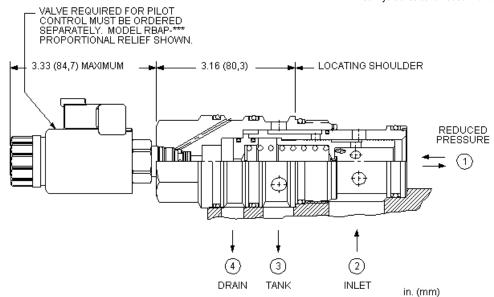


SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-24A



sunhydraulics.com/model/PVJA8





This valve is a 3-way, normally open modulating element, externally drained, that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 4).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Control Pilot Flow	15 - 20 in³/min.	
Pilot Control Cavity	T-8A	
Seal kit - Cartridge	Buna: 990024007	
Seal kit - Cartridge	Polyurethane: 990024002	
Seal kit - Cartridge	Viton: 990024006	

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PVJA8WN

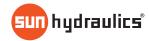
 MINIMUM CONTROL PRESSURE
 (W)
 SEAL MATERIAL
 (N)

 W 100 psi (7 bar)
 N Buna-N

 D 25 psi (1,7 bar)
 E EPDM

E EPDMV Viton

© 2023 Sun Hydraulics 155 of 210

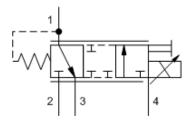


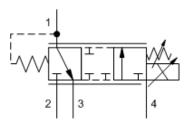
MODEL

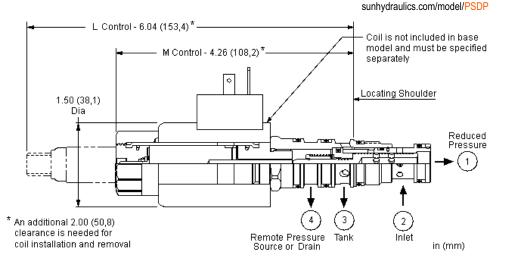
Electro-proportional, direct-acting, pressure reducing/relieving valve with drain to port 4

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-21A









This electro-proportional, direct-acting reducer/reliever valve reduces 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). The valve is biased to the relieving mode. Energizing the coil connects port 2 to port 1. Increasing the current to the coil will proportionally increase the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. Draining port 4 makes the valve insensitive to pressure at port 3. This valve is closed in the transition between reducing and relieving resulting in very low consumption of oil. Optional full manual control is available.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt)	2.5 in³/min.	
Optimum Inlet Pressure 3000 psi		
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990021007	
Seal kit - Cartridge Polyurethane: 990021002		
Seal kit - Cartridge	Viton: 990021006	

NOTES

CONTROL

Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.

CONFIGURATION OPTIONS

Model Code Example: PSDPMDN

M Manual Override (Standard)

(M) OPERATING RANGE

(D) SEAL MATERIAL

(N) COIL *

L Standard Screw Adjustment

50 - 485 psi (3,5 - 33,5 bar) **B** 100 - 1125 psi (7 - 77,5 bar) **E** 25 - 250 psi (1,7 - 18 bar)

V Viton

212 DIN 43650-Form A, 12 VDC

224 DIN 43650-Form A, 24 VDC

912 Deutsch DT04-2P, 12 VDC

* Additional coil options are available

924 Deutsch DT04-2P, 24 VDC

© 2023 Sun Hydraulics 156 of 210

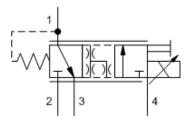


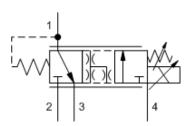


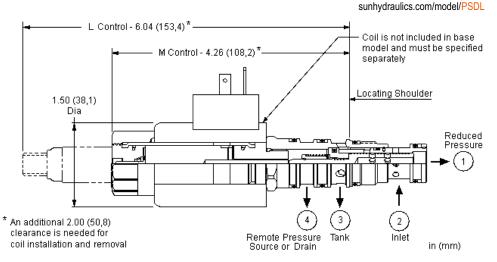
Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition and drain to port 4

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-21A









This electro-proportional, direct-acting reducer/reliever valve reduces 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). The valve is biased to the relieving mode. Energizing the coil connects port 2 to port 1. Increasing the current to the coil will proportionally increase the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. Draining port 4 makes the valve insensitive to pressure at port 3. This valve is open in the transition from reducing to relieving which provides good pressure control and dynamic response. Optional full manual control is available.

TECHNICAL DATA

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

Maximum Operating Pressure 5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt)	20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

NOTES Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.

CONFIGURATION OPTIONS

Model Code Example: PSDLMDN

CONTROL	(M)	OPERATING RANGE	(D)	SEAL MATERIAL	(N)	COIL*	
M Manual Override (Standard)		D 50 - 485 psi (3.5 - 33.5 bar)		N Buna-N		No coil	

L Standard Screw Adjustment

B 100 - 1125 psi (7 - 77,5 bar)

E 25 - 250 psi (1,7 - 18 bar) **S** 10 - 100 psi (0,7 - 7 bar) N Buna-N V Viton

212 DIN 43650-Form A, 12 VDC **224** DIN 43650-Form A, 24 VDC

912 Deutsch DT04-2P, 12 VDC

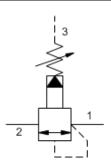
924 Deutsch DT04-2P, 24 VDC

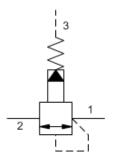
* Additional coil options are available

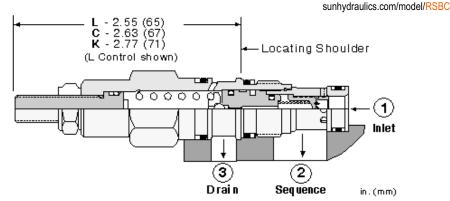
© 2023 Sun Hydraulics 157 of 210

CAPACITY: 7.5 gpm / CAVITY: T-163A









Pilot-operated, balanced piston sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm	
Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.	
Response Time - Typical 10 ms		
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990163007	
Seal kit - Cartridge	Polyurethane: 990163002	
Seal kit - Cartridge	Viton: 990163006	

CONFIGURATION OPTIONS

Model Code Example: RSBCLAN

(L) ADJUSTMENT RANGE L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- **A** 75 3000 psi (5 210 bar), 1000 psi (70 bar) Standard Setting
- W 75 4500 psi (5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 75 1500 psi (5 105 bar), 1000 psi (70 bar) Standard Setting
- C 75 6000 psi (5 420 bar), 1000 psi (70 bar) Standard Setting
- N 75 800 psi (5 55 bar), 400 psi (28 bar) Standard Setting
- Q 75 400 psi (5 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL (N) MATERIAL/COATING

N Buna-N **E** EPDM

V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

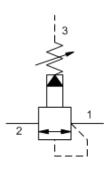
© 2023 Sun Hydraulics 158 of 210

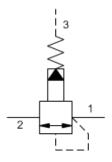


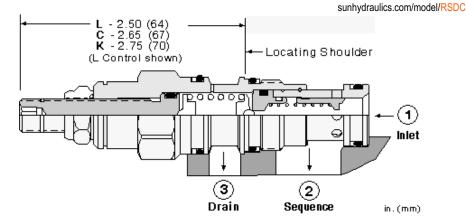


Pilot-operated, balanced piston sequence valve SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A









Pilot-operated, balanced piston sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge EPDM: 990011014	
Seal kit - Cartridge Polyurethane: 99001100	
Seal kit - Cartridge	Viton: 990011006

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RSDCLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- J Capped Screw Adjustment
- K Handknob
- O Handknob with Panel Mount
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE A 100 - 3000 psi (7 - 210 bar), 1000 psi

(70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- N 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- Q 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N **E** EPDM

V Viton

(N) MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

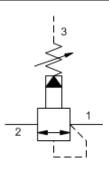
© 2023 Sun Hydraulics 159 of 210

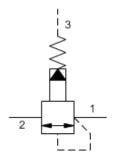


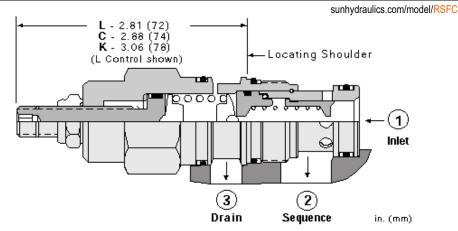


Pilot-operated, balanced piston sequence valve SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A









Pilot-operated, balanced piston sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm	
Maximum Operating Pressure	5000 psi	
Control Pilot Flow	10 - 15 in³/min.	
Maximum Valve Leakage at 110 SUS (24 cSt) 3 in³/min.@1000 psi		
Response Time - Typical	10 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990202007	
Seal kit - Cartridge	EPDM: 990202014	
Seal kit - Cartridge Polyurethane: 99000		
Seal kit - Cartridge	Viton: 990202006	

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RSFCLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- J Capped Screw Adjustment
- K Handknob
- O Handknob with Panel Mount
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

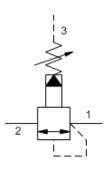
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

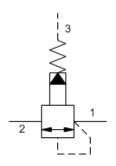
(A) SEAL MATERIAL (N) MATERIAL/COATING

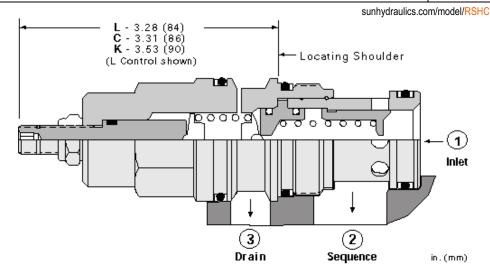
N Buna-N Standard Material/Coating E EPDM /AP Stainless Steel, Passivated V Viton /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 160 of 210









Pilot-operated, balanced piston sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm	
Maximum Operating Pressure	5000 psi	
Control Pilot Flow 15 - 20 in³/min.		
Maximum Valve Leakage at 110 SUS (24 cSt) 4 in³/min.@1000 psi		
Response Time - Typical 10 ms		
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge Buna: 990017007		
Seal kit - Cartridge	Polyurethane: 990017002	
Seal kit - Cartridge	Viton: 990017006	

CONFIGURATION OPTIONS

Model Code Example: RSHCLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

OSTMENT NAMOE

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- W 150 4500 psi (10,5 315 bar), 1000
- psi (70 bar) Standard Setting **B** 50 1500 psi (3,5 105 bar), 1000 psi
- (70 bar) Standard Setting **C** 150 6000 psi (10,5 420 bar), 1000
- psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28
- E bar) Standard Setting bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N E EPDM

V Viton

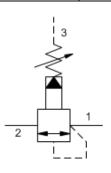
MATERIAL/COATING

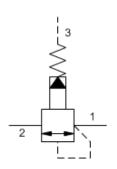
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

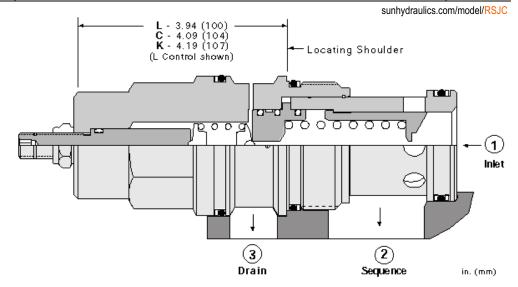
Standard Material/Coating

© 2023 Sun Hydraulics 161 of 210









Pilot-operated, balanced piston sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm	
Maximum Operating Pressure	5000 psi	
Control Pilot Flow 15 - 20 in ³ /min.		
Maximum Valve Leakage at 110 SUS (24 cSt) 5 in³/min.@1000 psi		
Response Time - Typical	10 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990019007	
Seal kit - Cartridge Polyurethane: 990019002		
Seal kit - Cartridge	Viton: 990019006	

CONFIGURATION OPTIONS

Model Code Example: RSJCLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

V Viton

(N) MATERIAL/COATING

Standard Material/Coating

/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 162 of 210

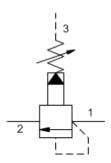


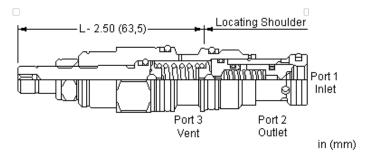
MODEL RSDS

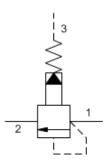
Pilot-operated, balanced poppet sequence valve SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A



sunhydraulics.com/model/RSDS







Pilot-operated, balanced poppet sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm	
Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at Reseat	10 drops/min.	
Response Time - Typical 10 ms		
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990011007	
Seal kit - Cartridge Polyurethane: 990011003		
Seal kit - Cartridge	Viton: 990011006	

CONFIGURATION OPTIONS

Model Code Example: RSDSLAN

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

CONTROL

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 100 4500 psi (7 315 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL

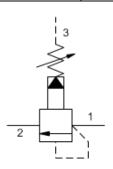
N Buna-N
V Viton

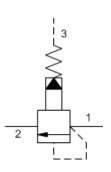
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

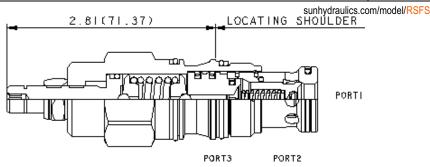
(N) MATERIAL/COATING

© 2023 Sun Hydraulics 163 of 210









Pilot-operated, balanced poppet sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990402007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990402006

CONFIGURATION OPTIONS

Model Code Example: RSFSLAN

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- N 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- Q 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton /AP Stainless Steel, Passivated

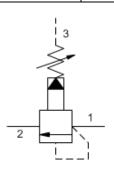
© 2023 Sun Hydraulics 164 of 210

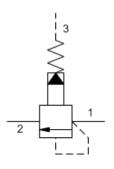


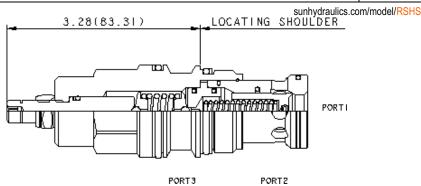
MODEL RSHS

Pilot-operated, balanced poppet sequence valve SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-17A









Pilot-operated, balanced poppet sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990217007
Seal kit - Cartridge	Polyurethane: 990217002
Seal kit - Cartridge	Viton: 990217006

CONFIGURATION OPTIONS

Model Code Example: RSHSLAN

CONTROL (L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- ${\bf K}$ Handknob

. 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-NV Viton

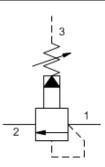
Standard Material/Coating

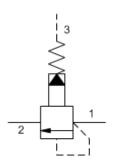
/AP Stainless Steel, Passivated

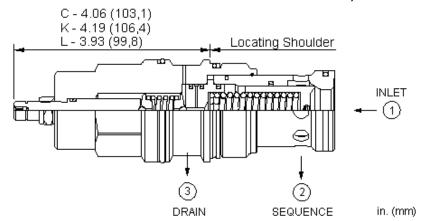
© 2023 Sun Hydraulics 165 of 210



sunhydraulics.com/model/RSJS







Pilot-operated, balanced poppet sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990219007
Seal kit - Cartridge	Viton: 990219006

CONFIGURATION OPTIONS

Model Code Example: RSJSLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated

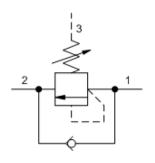
(N) MATERIAL/COATING

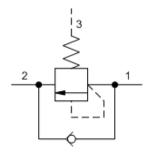
/AP Stainless Steel, Passivate
/LH Mild Steel, Zinc-Nickel

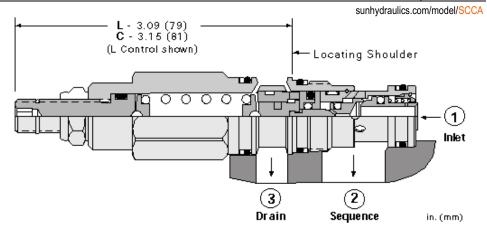
© 2023 Sun Hydraulics 166 of 210

Direct-acting sequence valve with reverse flow check SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A









Direct-acting sequence valves with reverse-flow check will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. Additionally, these valves incorporate an integral check valve to provide reverse flow from port 2 (sequence) to port 1 (inlet). The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Check Cracking Pressure	40 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: SCCALAN

CONTROL (L) ADJUSTMENT RANGE

(A) SEAL MATERIAL bar), 1000 psi N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

/LH Mild Steel, Zinc-Nickel

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

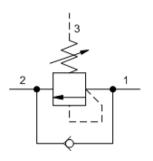
W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting

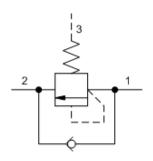
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 2000 6000 psi (140 420 bar), 2000 psi (140 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- **E** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting

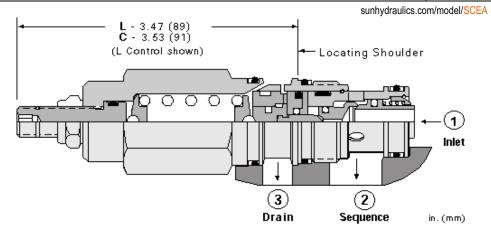
Standard Material/Coating /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 167 of 210









Direct-acting sequence valves with reverse-flow check will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. Additionally, these valves incorporate an integral check valve to provide reverse flow from port 2 (sequence) to port 1 (inlet). The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Check Cracking Pressure	25 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: SCEALAN

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

MATERIAL/COATING

L Standard Screw Adjustment C Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

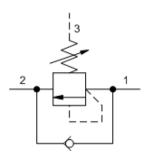
- W 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- C 2000 6000 psi (140 420 bar), 2000 psi (140 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- E 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting

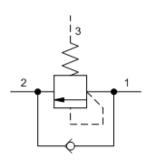
N Buna-N V Viton

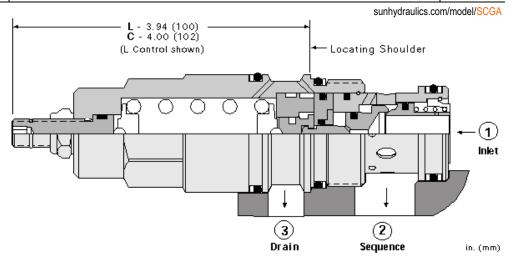
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 168 of 210









Direct-acting sequence valves with reverse-flow check will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. Additionally, these valves incorporate an integral check valve to provide reverse flow from port 2 (sequence) to port 1 (inlet). The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Check Cracking Pressure	25 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: SCGALAN

Ctandard	Carous	Adjustment

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

MATERIAL/COATING

C Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

- W 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- C 2000 6000 psi (140 420 bar), 2000 psi (140 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- E 100 400 psi (7 28 bar), 200 psi (14

bar) Standard Setting

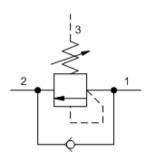
N Buna-N

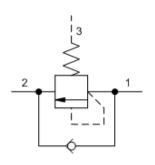
V Viton

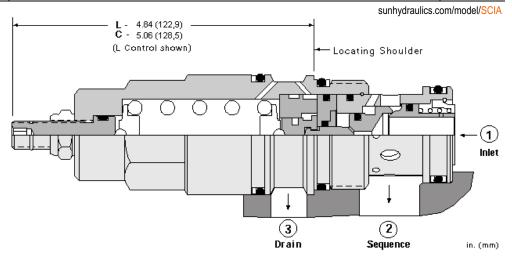
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 169 of 210









Direct-acting sequence valves with reverse-flow check will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. Additionally, these valves incorporate an integral check valve to provide reverse flow from port 2 (sequence) to port 1 (inlet). The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Check Cracking Pressure	25 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: SCIALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 2000 6000 psi (140 420 bar), 2000 psi (140 bar) Standard Setting
- **D** 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- **E** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting

N Buna-N

E EPDM

V Viton

Standard Material/Coating

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 170 of 210



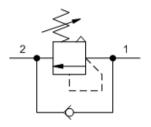
MODEL SCEB

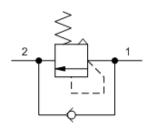
Atmospherically referenced, direct-acting sequence valve with reverse flow check

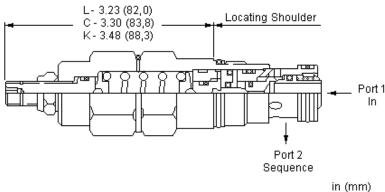
SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-5A











Atmospherically referenced, direct-acting sequence valves with reverse-flow check will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. Additionally, these valves incorporate an integral check valve to provide reverse flow from port 2 (sequence) to port 1 (inlet). The pressure setting of this sequence valve controls the pressure at port 1 relative to the atmospheric vent.

TECHNICAL DATA

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

Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Check Cracking Pressure	25 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	Viton: 990203006

CONFIGURATION OPTIONS

Model Code Example: SCEBLAN

L Standard Screw Adjustment

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N)

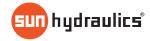
C Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 2000 6000 psi (140 420 bar), 2000 psi (140 bar) Standard Setting
- D 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- **E** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

© 2023 Sun Hydraulics 171 of 210



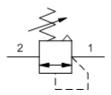


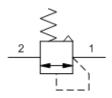
Atmospherically referenced, direct-acting sequence valve without reverse flow check

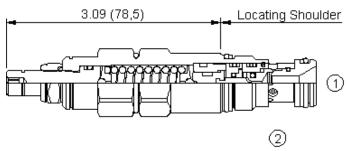
SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-13A



sunhydraulics.com/model/SXCB







Atmospherically referenced, direct-acting sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of this sequence valve controls the pressure at port 1 relative to the atmospheric vent.

TECHNICAL DATA

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

Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	EPDM: 990010014
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: SXCBLAN

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

CONTROL

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

B 300 - 1500 psi (20 - 105 bar), 1000 psi (70 bar) Standard Setting

C 2000 - 6000 psi (140 - 420 bar), 2000 psi (140 bar) Standard Setting

D 200 - 800 psi (14 - 55 bar), 400 psi (28 bar) Standard Setting

E 100 - 400 psi (7 - 28 bar), 200 psi (14 bar) Standard Setting

W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL

osi N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING
Standard Material/Coating

/AP Stainless Steel, Passivated

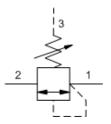
© 2023 Sun Hydraulics 172 of 210

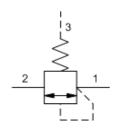
Direct-acting sequence valve without reverse flow check

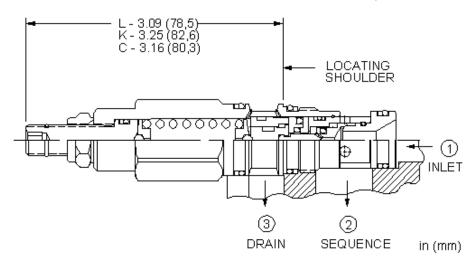
SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A



sunhydraulics.com/model/SXCA







Direct-acting sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: SXCALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

- B 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- C 2000 6000 psi (140 420 bar), 2000 psi (140 bar) Standard Setting
- D 200 800 psi (14 55 bar), 400 psi (28 bar) Standard Setting
- **E** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-NV Viton

Standard Material/Coating /AP Stainless Steel, Passivated

/LH Mild Steel, Zinc-Nickel

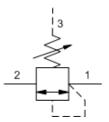
© 2023 Sun Hydraulics 173 of 210

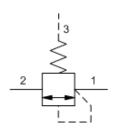
Direct-acting sequence valve without reverse flow check

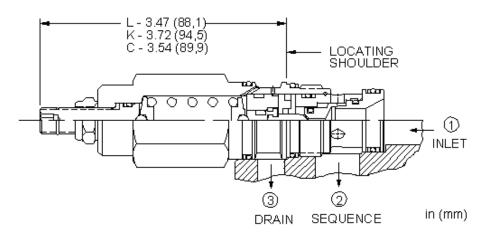
SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A



sunhydraulics.com/model/SXEA







Direct-acting sequence valves will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: SXEALAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL N Buna-N

V Viton

(N) MATERIAL/COATING

CONTROL

500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting C Tamper Resistant - Factory Set

B 300 - 1500 psi (20 - 105 bar), 1000 psi

- (70 bar) Standard Setting C 2000 - 6000 psi (140 - 420 bar), 2000
- psi (140 bar) Standard Setting **D** 200 - 800 psi (14 - 55 bar), 400 psi (28
- bar) Standard Setting
- E 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting

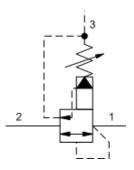
Standard Material/Coating

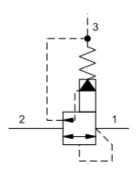
/AP Stainless Steel, Passivated

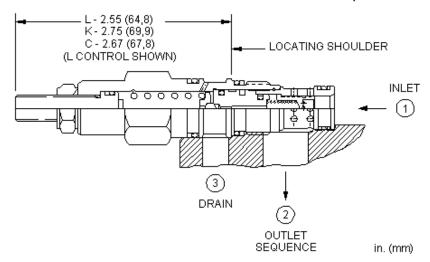
© 2023 Sun Hydraulics 174 of 210 CAPACITY: 7.5 gpm / CAVITY: T-163A



sunhydraulics.com/model/SQBB







Kick-down sequence valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve setting, creating an unrestricted flow path from port 1 to port 2 (sequence). The pressure setting at port 1 is relative to the drain (port 3). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, pressure at port 1 must fall below the setting of the valve, flow from port 1 to port 2 must cease, and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Factory Pressure Settings Established at	Kick down point
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: SQBBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

MATERIAL (N)

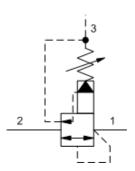
- **A** 75 3000 psi (5 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 75 1500 psi (5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 75 6000 psi (5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 75 800 psi (5 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 75 400 psi (5 28 bar), 200 psi (14 bar) Standard Setting
- **W** 75 4500 psi (5 315 bar), 1000 psi (70 bar) Standard Setting

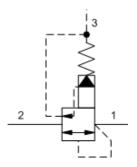
N Buna-N

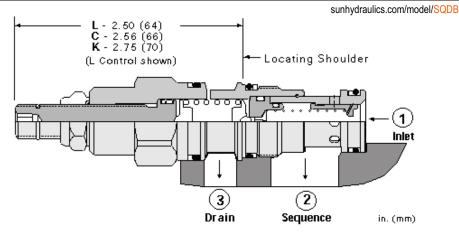
V Viton

© 2023 Sun Hydraulics 175 of 210









Kick-down sequence valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve setting, creating an unrestricted flow path from port 1 to port 2 (sequence). The pressure setting at port 1 is relative to the drain (port 3). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, pressure at port 1 must fall below the setting of the valve, flow from port 1 to port 2 must cease, and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Factory Pressure Settings Established at	Kick down point
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel. **NOTES**

CONFIGURATION OPTIONS

Model Code Example: SQDBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

O Handknob with Panel Mount

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

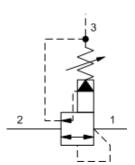
V Viton

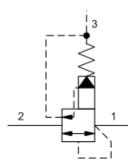
(N) MATERIAL/COATING

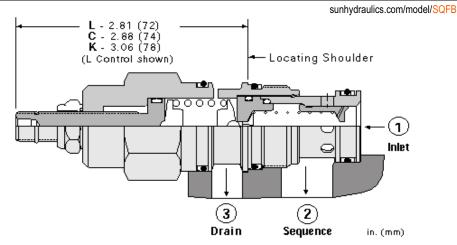
Standard Material/Coating /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 176 of 210









Kick-down sequence valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve setting, creating an unrestricted flow path from port 1 to port 2 (sequence). The pressure setting at port 1 is relative to the drain (port 3). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, pressure at port 1 must fall below the setting of the valve, flow from port 1 to port 2 must cease, and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Factory Pressure Settings Established at	Kick down point
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

NOTES

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: SQFBLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

CONTROL

N Buna-N V Viton

C Tamper Resistant - Factory Set

- K Handknob
- O Handknob with Panel Mount

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 177 of 210

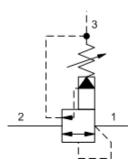


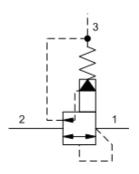


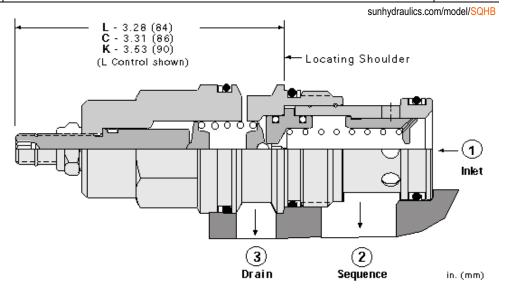
Kick-down, pilot-operated, balanced piston sequence valve

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-17A









Kick-down sequence valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve setting, creating an unrestricted flow path from port 1 to port 2 (sequence). The pressure setting at port 1 is relative to the drain (port 3). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, pressure at port 1 must fall below the setting of the valve, flow from port 1 to port 2 must cease, and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Factory Pressure Settings Established at	Kick down point
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: SQHBLAN

L Sta	ndard	SCROW	Δdine	tmont

- (L) ADJUSTMENT RANGE
- (A) SEAL MATERIAL

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

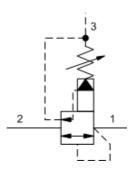
100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

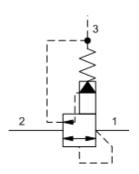
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

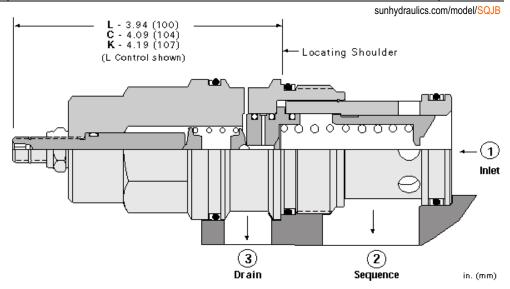
N Buna-N Viton

© 2023 Sun Hydraulics 178 of 210 SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A









Kick-down sequence valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve setting, creating an unrestricted flow path from port 1 to port 2 (sequence). The pressure setting at port 1 is relative to the drain (port 3). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, pressure at port 1 must fall below the setting of the valve, flow from port 1 to port 2 must cease, and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Factory Pressure Settings Established at	Kick down point
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: SQJBLAN

CONTROL	(L)	ADJUSTMENT RANGE (A	A)	SEAL MATERIAL
L Standard Screw Adjustment		A 100 - 3000 psi (7 - 210 bar), 1000 psi		N Buna-N

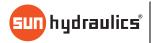
L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- (70 bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14
- w 490 Standardi \$40,99 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Viton

© 2023 Sun Hydraulics 179 of 210

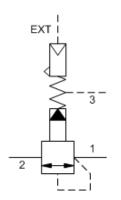


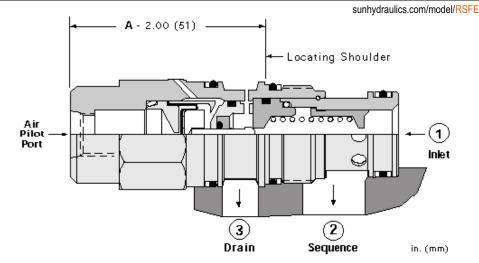


Air-controlled, pilot-operated, balanced piston sequence valve

SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A







Air-controlled, pilot-operated, balanced piston sequence valves use compressed air over a diaphragm instead of an adjustable spring to control the pressure setting of the valve. The air signal is supplied through a port in the hexend of the cartridge. They will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Pilot Ratio	20:1
Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	2000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: RSFEABN

CONTROL (A) ADJUSTMENT RANGE (B) SEAL MATERIAL N Buna-N

B 50 - 1500 psi (3,5 - 105 bar) A External 1/4 NPTF Port

V Viton

© 2023 Sun Hydraulics 180 of 210

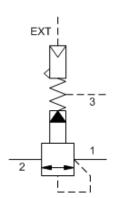


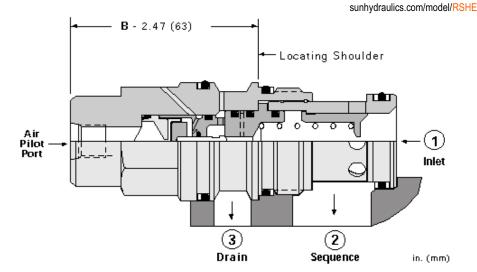


Air-controlled, pilot-operated, balanced piston sequence valve

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-17A







Air-controlled, pilot-operated, balanced piston sequence valves use compressed air over a diaphragm instead of an adjustable spring to control the pressure setting of the valve. The air signal is supplied through a port in the hexend of the cartridge. They will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Pilot Ratio	20:1
Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	2000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: RSHEBBN

 CONTROL
 (B)
 ADJUSTMENT RANGE
 (B)
 SEAL MATERIAL
 (N)

 B External 4-SAE Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

 V Viton
 V

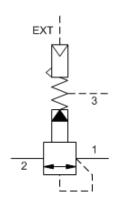
© 2023 Sun Hydraulics 181 of 210

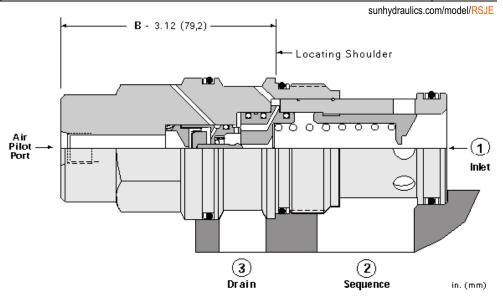


Air-controlled, pilot-operated, balanced piston sequence valve

SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A







Air-controlled, pilot-operated, balanced piston sequence valves use compressed air over a diaphragm instead of an adjustable spring to control the pressure setting of the valve. The air signal is supplied through a port in the hexend of the cartridge. They will supply a secondary circuit with flow once the pressure at the inlet (port 1) has exceeded the valve setting. The pressure setting of a sequence valve controls the pressure at port 1 relative to the pressure at the drain (port 3). These valves are insensitive to back pressure at port 2 (sequence), up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Pilot Ratio	20:1
Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	2000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

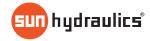
Model Code Example: RSJEBBN

 CONTROL
 (B)
 ADJUSTMENT RANGE
 (B)
 SEAL MATERIAL
 (N)

 B External 4-SAE Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

 V Viton
 V

© 2023 Sun Hydraulics 182 of 210



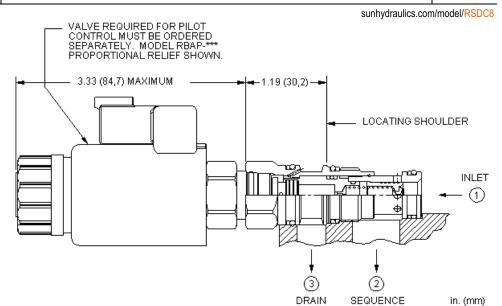


Pilot-operated, balanced piston sequence main stage with integral T-8A control cavity

SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A



T-8A CAV



This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to port 2, throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 3). These valves are insensitive to back pressure at port 2, up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RSDC8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

W 100 psi (7 bar) **D** 25 psi (1,7 bar) N Buna-N **E** EPDM V Viton

© 2023 Sun Hydraulics 183 of 210



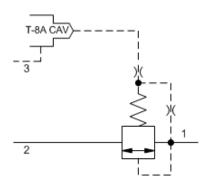


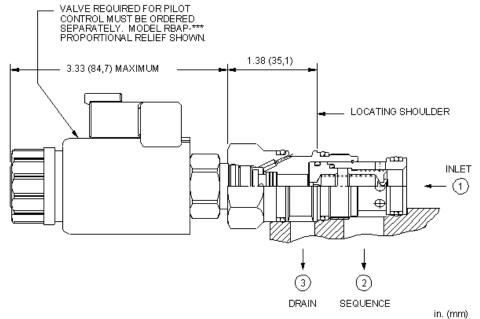
Pilot-operated, balanced piston sequence main stage with integral T-8A control cavity

SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A



sunhydraulics.com/model/RSFC8





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to port 2, throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 3). These valves are insensitive to back pressure at port 2, up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Control Pilot Flow	10 - 15 in³/min.	
Pilot Control Cavity	T-8A	
Main stage leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi	
Response Time - Typical	10 ms	
Seal kit - Cartridge	Buna: 990202007	
Seal kit - Cartridge	Polyurethane: 990002002	
Seal kit - Cartridge	Viton: 990202006	

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

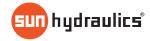
Model Code Example: RSFC8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

 W 100 psi (7 bar)
 N Buna-N

 D 25 psi (1,7 bar)
 V Viton

© 2023 Sun Hydraulics 184 of 210



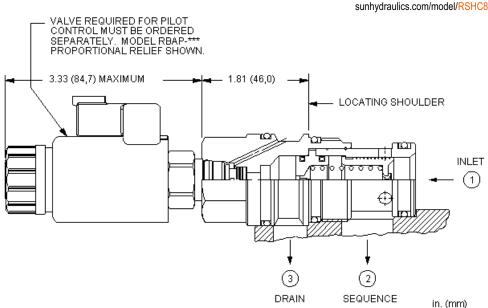


Pilot-operated, balanced piston sequence main stage with integral T-8A control cavity

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-17A



T-8A CAV ----- VC S P



This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to port 2, throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 3). These valves are insensitive to back pressure at port 2, up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Control Pilot Flow	15 - 20 in³/min.	
Pilot Control Cavity	T-8A	
Main stage leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi	
Response Time - Typical	10 ms	
Seal kit - Cartridge	Buna: 990017007	
Seal kit - Cartridge	Polyurethane: 990017002	
Seal kit - Cartridge	Viton: 990017006	

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RSHC8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

 W 100 psi (7 bar)
 N Buna-N

 D 25 psi (1,7 bar)
 V Viton

© 2023 Sun Hydraulics 185 of 210



MODEL RSJC8

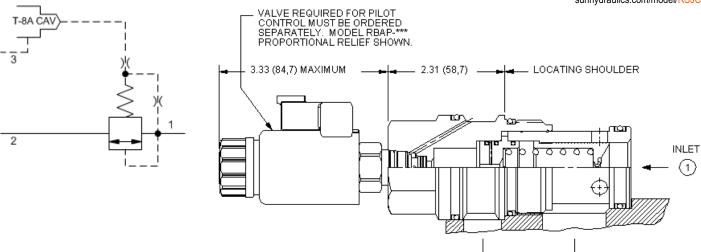
Pilot-operated, balanced piston sequence main stage with integral T-8A control cavity

SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A





in. (mm)



This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to port 2, throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 3). These valves are insensitive to back pressure at port 2, up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

(3)

DRAIN

TECHNICAL DATA

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

(2)

SEQUENCE

Maximum Operating Pressure	5000 psi	
Control Pilot Flow	15 - 20 in³/min.	
Pilot Control Cavity	T-8A	
Main stage leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi	
Response Time - Typical	10 ms	
Seal kit - Cartridge	Buna: 990019007	
Seal kit - Cartridge	Polyurethane: 990019002	
Seal kit - Cartridge	Viton: 990019006	

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RSJC8WN

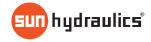
MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

W 100 psi (7 bar)

N Buna-N

V Viton

© 2023 Sun Hydraulics 186 of 210



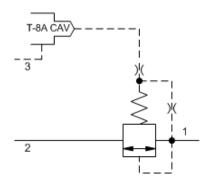
MODEL RSDS8

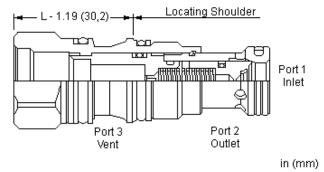
Pilot-operated, balanced poppet sequence main stage with integral T-8A control cavity

SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A



sunhydraulics.com/model/RSDS8





This valve is a normally closed poppet element that incorporates an integral pilot control cavity. It is externally drained, and is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to port 2, throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 3). These valves are insensitive to back pressure at port 2, up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

D 50 psi (3,5 bar)

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

Model Code Example: RSDS8WN

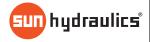
CONFIGURATION OPTIONS

 BIAS PRESSURE
 (W)
 SEAL MATERIAL
 (N)

 W 100 psi (7 bar)
 N Buna-N

V Viton

© 2023 Sun Hydraulics 187 of 210

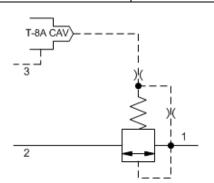


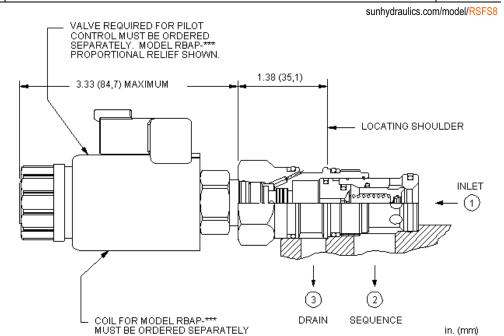
MODEL RSFS8

Pilot-operated, balanced poppet sequence main stage with integral T-8A control cavity

SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A







This valve is a normally closed poppet element that incorporates an integral pilot control cavity. It is externally drained, and is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to port 2, throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 3). These valves are insensitive to back pressure at port 2, up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi	
Control Pilot Flow	10 - 15 in³/min.	
Pilot Control Cavity	T-8A	
Pilot Control Valve Installation Torque	20 - 25 lbf ft	
Pilot Control Valve Hex Size	7/8 in.	
Main stage leakage at reseat	10 drops/min.	
Response Time - Typical	10 ms	
Seal kit - Cartridge	Buna: 990402007	
Seal kit - Cartridge	Polyurethane: 990002002	
Seal kit - Cartridge	Viton: 990402006	

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RSFS8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar) **B** 50 psi (3,5 bar) N Buna-NV Viton

© 2023 Sun Hydraulics 188 of 210



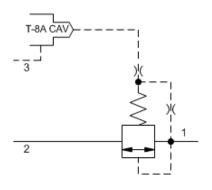


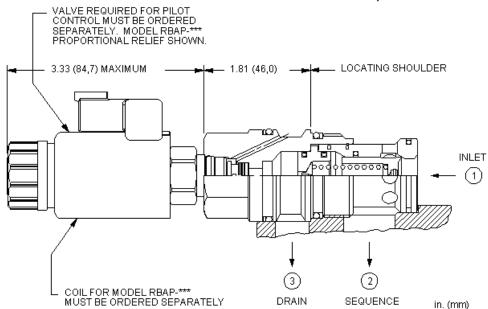
Pilot-operated, balanced poppet sequence main stage with integral T-8A control cavity

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-17A









This valve is a normally closed poppet element that incorporates an integral pilot control cavity. It is externally drained, and is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to port 2, throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 3). These valves are insensitive to back pressure at port 2, up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990217007
Seal kit - Cartridge	Polyurethane: 990217002
Seal kit - Cartridge	Viton: 990217006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RSHS8WN

MINIMUM CONTROL PRESSURE (W)

B 50 psi (3,5 bar)

V Viton

© 2023 Sun Hydraulics 189 of 210



MODEL RSJS8

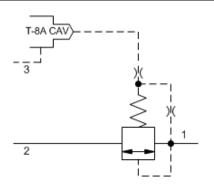
Pilot-operated, balanced poppet sequence main stage with integral T-8A control cavity

SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A

Coil for Model RBAP-*** must

be ordered separately





Valve required for pilot control must be ordered separately, Model RBAP-*** proportional relief shown.

3.33 (84,7) MAXIMUM

2.31 (58,7)

Locating Shoulder

INLET

This valve is a normally closed poppet element that incorporates an integral pilot control cavity. It is externally drained, and is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to port 2, throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 3). These valves are insensitive to back pressure at port 2, up to the valve setting. They may be used to regulate pressure in place of 2-port relief valves if there is pressure in the return line.

(3)

DRAIN

TECHNICAL DATA

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

(2)

SEQUENCE

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990219007
Seal kit - Cartridge	Viton: 990219006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RSJS8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar)
B 50 psi (3,5 bar)

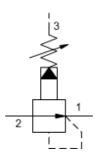
N Buna-N V Viton

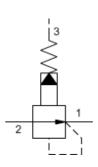
© 2023 Sun Hydraulics 190 of 210

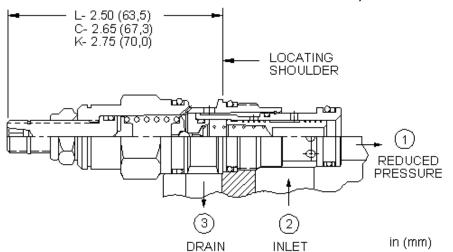
SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/PBDF







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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel. **NOTES**

CONFIGURATION OPTIONS

Model Code Example: PBDFLAN

V Viton

CONTROL	(L)	ADJUSTMENT RANGE	(A)	SEAL MATERIAL	(N
L Standard Screw Adjustment		A 100 - 3000 psi (7 - 210 bar), 200	psi (14	N Buna-N	

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting

(14 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 200 psi (14 bar) Standard Setting E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting **G** 60 - 3000 psi (4 - 210 bar), 200 psi (14 bar) Standard Setting K 75 - 1500 psi (5 - 105 bar), 200 psi (14 bar) Standard Setting ${f N}~60$ - $800~{
m psi}~(4$ - $55~{
m bar}),~200~{
m psi}~(14$ bar) Standard Setting **P** 40 - 400 psi (2,8 - 28 bar), 200 psi (14 bar) Standard Setting Q 60 - 400 psi (4 - 28 bar), 200 psi (14 bar) Standard Setting W 150 - 4500 psi (10,5 - 315 bar), 200 psi

© 2023 Sun Hydraulics 191 of 210



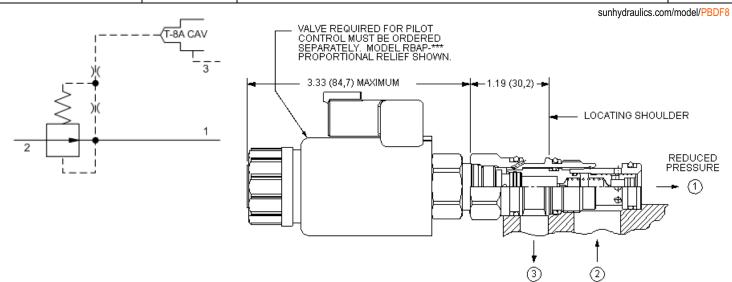


Pilot-operated, pressure reducing main stage with drilled piston orifice and integral T-8A control cavity

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



in. (mm)



This valve is a normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 3).

TECHNICAL DATA

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

DRAIN

INLET

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: PBDF8WN

BIAS PRESSURE	(W) SEAL MATE	ERIAL (N
W 100 psi (7 bar)	N Buna-N	
D 25 psi (1,7 bar)	V Viton	

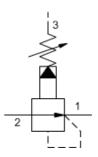
© 2023 Sun Hydraulics 192 of 210

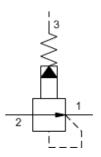
Pilot-operated, pressure reducing valve with drilled piston orifice

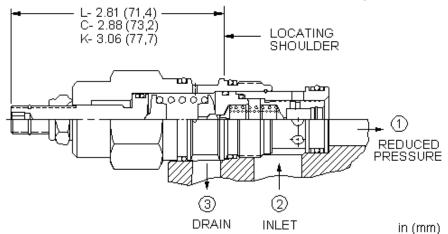
SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A



sunhydraulics.com/model/PBFF







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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Control Pilot Flow	10 - 15 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

NOTES

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: PBFFLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

N Buna-N E EPDM

V Viton

Standard Material/Coating /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 193 of 210



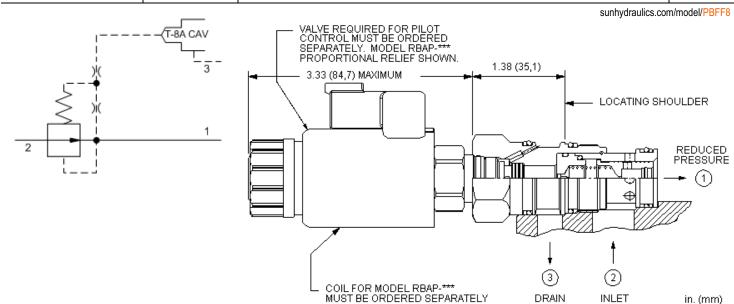


Pilot-operated, pressure reducing main stage with drilled piston orifice and integral T-8A control cavity

SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A



in. (mm)



This valve is a normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 3).

TECHNICAL DATA

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

INLET

DRAIN

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: PBFF8WN

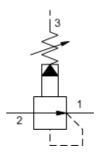
MINIMUM CONTROL PRESSURE (W) **SEAL MATERIAL** W 100 psi (7 bar) N Buna-N **E** EPDM **D** 25 psi (1,7 bar) V Viton

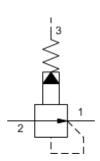
© 2023 Sun Hydraulics 194 of 210 Pilot-operated, pressure reducing valve with drilled piston orifice

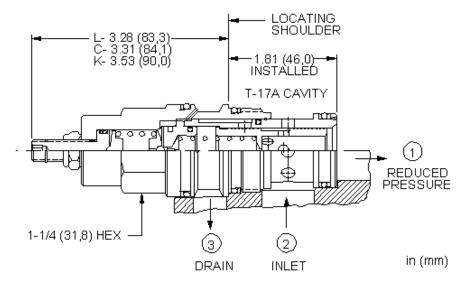
SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PBHF







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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

(N)

CONFIGURATION OPTIONS

Model Code Example: PBHFLAN

I Standard Scrow Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- M Capped Screw Adjustment with Lockwire Holes
- Q Capped and Lockwired
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 200 psi (14

(L) ADJUSTMENT RANGE

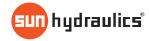
- bar) Standard Setting

 B 50 1500 psi (3,5 105 bar), 200 psi
- (14 bar) Standard Setting C 150 - 6000 psi (10,5 - 420 bar), 200 psi
- (14 bar) Standard SettingD 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL (14 N Buna-N

V Viton

© 2023 Sun Hydraulics 195 of 210





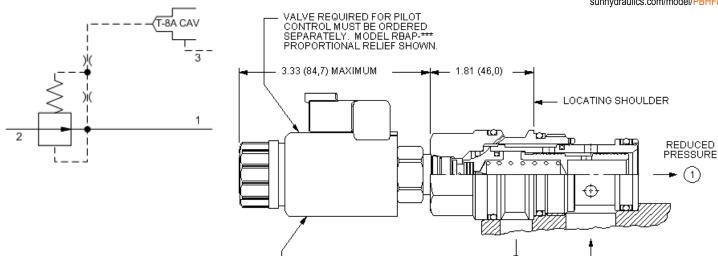
Pilot-operated, pressure reducing main stage with drilled piston orifice and integral T-8A control cavity

SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/PBHF8

in. (mm)



COIL FOR MODEL RBAP-***
MUST BE ORDERED SEPARATELY

This valve is a normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 3).

(3)

DRAIN

TECHNICAL DATA

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

(2)

INLET

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: PBHF8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

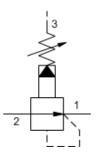
W 100 psi (7 bar) **D** 25 psi (1,7 bar) N Buna-N **E** EPDM V Viton

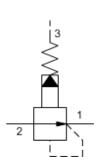
© 2023 Sun Hydraulics 196 of 210 Pilot-operated, pressure reducing valve with drilled piston orifice

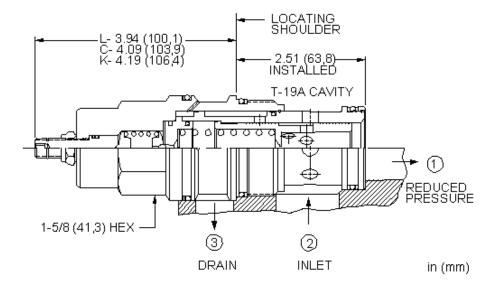
SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A



sunhydraulics.com/model/PBJF







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 DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

(N)

CONFIGURATION OPTIONS

Model Code Example: PBJFLAN

CONTROL (L) ADJUSTMENT RANGE	(A) SEAL MATERIAL
I Standard Sarow Adjustment	A 100 2000 poi /7 210 bor) 200 p	oci /1/ N. Duno N.

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob
- N Capped Screw Adjustment with Lockwire Holes

A 100 - 3000 psi (7 - 210 bar), 200 psi (1 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 200 psi (14
- bar) Standard Setting Q 60 - 400 psi (4 - 28 bar), 200 psi (14 bar) Standard Setting
- **W** 100 4500 psi (7 315 bar), 200 psi (14 bar) Standard Setting

N Buna-N

E EPDM

V Viton

© 2023 Sun Hydraulics 197 of 210

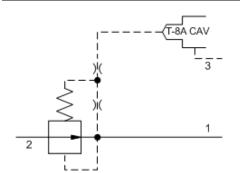


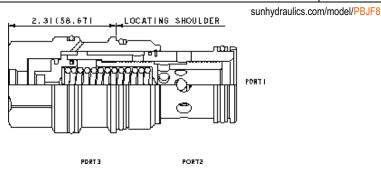
MODEL PBJF8

Pilot-operated, pressure reducing main stage with drilled piston orifice and integral T-8A control cavity

SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A







This valve is a normally open modulating element that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 3).

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: PBJF8WN

MINIMUM CONTROL PRESSURE (W)	SEAL MATERIAL (N)
W 100 psi (7 bar)	N Buna-N
D 25 psi (1,7 bar)	V Viton

© 2023 Sun Hydraulics 198 of 210



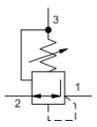
MODEL **PRBB**

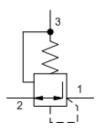
Direct-acting, pressure reducing/relieving valve

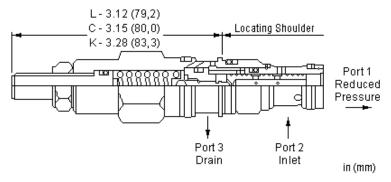
CAPACITY: 5 gpm / CAVITY: T-163A



sunhydraulics.com/model/PRBB







Direct-acting, 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). These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm	
Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt) 2 in³/min.		
Adjustment - No. of CW Turns from Min. to Max. setting	7	
Locknut Hex Size	1/2 in.	
Locknut Torque 80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990163007	
Seal kit - Cartridge EPDM: 990163014		
Seal kit - Cartridge	Viton: 990163006	

CONFIGURATION OPTIONS

Model Code Example: PRBBLAN

CONTROL (A) SEAL MATERIAL (L) ADJUSTMENT RANGE (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

500 - 3000 psi (35 - 210 bar), 700 psi (50 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 200 psi (14 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 200 psi (14 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

S 25 - 200 psi (1,7 - 14 bar), 100 psi (7 bar) Standard Setting

W 750 - 4500 psi (50 - 315 bar), 1000 psi (70 bar) Standard Setting

E EPDM

V Viton

/LH Mild Steel, Zinc-Nickel

/AP Stainless Steel, Passivated

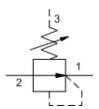
© 2023 Sun Hydraulics 199 of 210

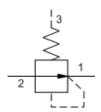


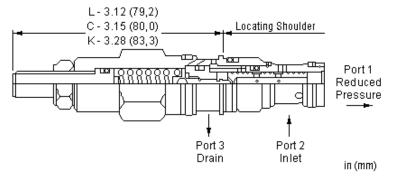
Direct-acting, pressure reducing valve CAPACITY: 5 gpm / CAVITY: T-163A



sunhydraulics.com/model/PRBR







Direct-acting, pressure reducing valves reduce a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1. These valves incorporate a damped construction for stable operation allowing the use of high reduced pressure.

TECHNICAL DATA

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

Factory Pressure Settings Established at	0.25 gpm	
Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	1/2 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990163007	
Seal kit - Cartridge	EPDM: 990163014	
Seal kit - Cartridge	Viton: 990163006	

CONFIGURATION OPTIONS

Model Code Example: PRBRLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- 500 3000 psi (35 210 bar), 700 psi (50 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 25 200 psi (1,7 14 bar), 100 psi (7 bar) Standard Setting
- **W** 750 4500 psi (50 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N E EPDM

V Viton

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 200 of 210



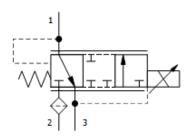


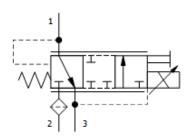
Electro-proportional, direct-acting pressure reducing/relieving valve with filter screen, 3000 psi (210 bar) - common cavity

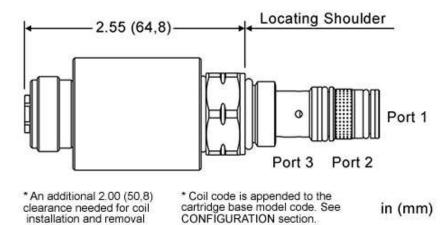
SERIES 0C / CAPACITY: 1 gpm / CAVITY: SC-08-03



sunhydraulics.com/model/PRTS







This electro-proportional, direct-acting reducer/reliever valve reduces a high primary pressure at the inlet port (Port 2) to a constant reduced pressure at Port 1, with a relief function from Port 1 to tank (Port 3). The valve is biased to the relieving mode. Energizing the coil connects Port 2 to Port 1. Increasing the current to the coil will proportionally increase the reduced pressure at Port 1. If pressure at Port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. This valve is closed in the transition between reducing and relieving resulting in very low consumption of oil.

TECHNICAL DATA

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

Maximum Operating Pressure	3000 psi
Coil Nut Torque	3.5 - 3.9 lbf ft

CONFIGURATION OPTIONS

Model Code Example: PRTSXDN

CONTROL	(X) ADJUSTMENT RANGE	(D) SEAL MATERIAL	(N) COIL *	
Χ -	D 0 - 435 psi	N Buna-N	No coil	
M -	E 0 - 290 psi		* Additional coil ontions are available	

© 2023 Sun Hydraulics 201 of 210



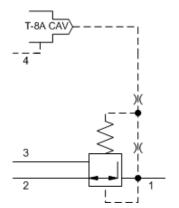
MODEL PVDC8

Pilot-operated, pressure reducing/relieving main stage with integral T-8A control cavity, drilled piston orifice, and drain to port 4

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A



sunhydraulics.com/model/PVDC8



This valve is a 3-way, normally open modulating element, externally drained, that incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. The valve reduces 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). The pilot cartridge's setting determines the difference in pressure between reduced pressure (port 1) and the drain (port 4).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

D 25 psi (1,7 bar)

Model Code Example: PVDC8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL (N
W 100 psi (7 bar) N Buna-N

V Viton

© 2023 Sun Hydraulics 202 of 210





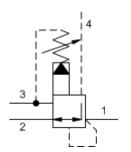
Ventable, pilot-operated, pressure reducing/relieving valve with drilled piston orifice

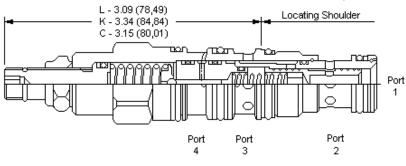
SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A



sunhydraulics.com/model/PVDD

in (mm)





Ventable, pilot-operated pressure reducing/relieving valves reduce a high primary pressure at the inlet to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3). The vent port (port 4) can be used as a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

(N)

CONFIGURATION OPTIONS

Model Code Example: PVDDLAN

Ctandard	Carour	Adjustment	

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

100 - 3000 psi (7 - 210 bar), 200 psi (14

(L) ADJUSTMENT RANGE

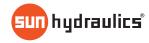
- bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 200 psi
- (14 bar) Standard Setting **D** 25 - 800 psi (1,7 - 55 bar), 200 psi (14
- bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- W 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

V Viton

© 2023 Sun Hydraulics

203 of 210



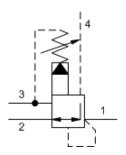
MODEL PVFD

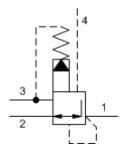
Ventable, pilot-operated, pressure reducing/relieving valve with drilled piston orifice

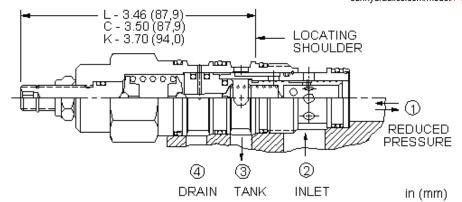
SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-22A



sunhydraulics.com/model/PVFD







Ventable, pilot-operated pressure reducing/relieving valves reduce a high primary pressure at the inlet to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3). The vent port (port 4) can be used as a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: PVFDLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

- . 100 3000 psi (7 210 bar), 200 psi (14 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 200 psi (14 bar) Standard Setting

N Buna-N V Viton Standard Material/Coating /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 204 of 210



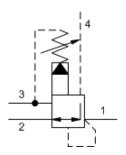


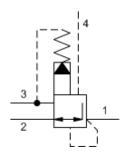
Ventable, pilot-operated, pressure reducing/relieving valve with drilled piston orifice

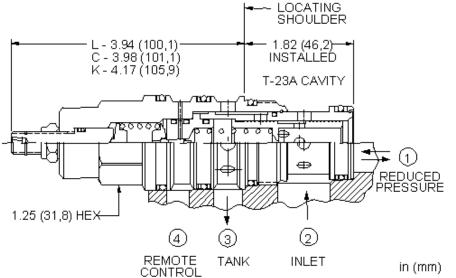
SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-23A











Ventable, pilot-operated pressure reducing/relieving valves reduce a high primary pressure at the inlet to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3). The vent port (port 4) can be used as a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: PVHDLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

A 100 - 3000 psi (7 - 210 bar), 200 psi (14 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **H** 30 3000 psi (2 210 bar), 200 psi (14 bar) Standard Setting
- J 25 1500 psi (1,7 105 bar), 200 psi
- w (ริป bar) Standard Setting bar), 200 psi (14 bar) Standard Setting

N Buna-NV Viton

Standard Material/Coating /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 205 of 210

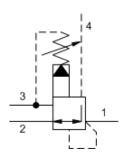


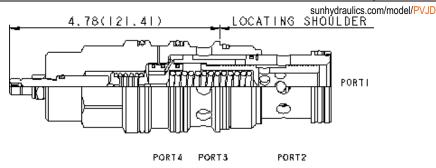


Ventable, pilot-operated, pressure reducing/relieving valve with drilled piston orifice

SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-24A







Ventable, pilot-operated pressure reducing/relieving valves reduce a high primary pressure at the inlet to a constant reduced pressure at port 1, with a full-flow relief function from port 1 to tank (port 3). The vent port (port 4) can be used as a means for remote control by pilot or 2-way valves.

TECHNICAL DATA

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

Factory Pressure Settings Established at	blocked control port (dead headed)
Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: PVJDLAN

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

(L) ADJUSTMENT RANGE **A** 100 - 3000 psi (7 - 210 bar), 200 psi (14

bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 200 psi

(14 bar) Standard Setting

- C 150 6000 psi (10,5 420 bar), 200 psi (14 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 200 psi (14 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- H 30 3000 psi (2 210 bar), 200 psi (14 bar) Standard Setting
- **J** 25 1500 psi (1,7 105 bar), 200 psi (14 bar) Standard Setting
- W 100 4500 psi (7 315 bar), 200 psi (14 bar) Standard Setting

N Buna-N V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 206 of 210



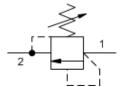


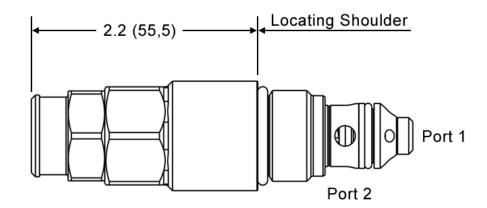
Direct-acting relief valve, 6000 psi (420 bar) - common cavity

SERIES 1C / CAPACITY: 10 gpm / CAVITY: SC-10-02



sunhydraulics.com/model/RDUA





in (mm)

This direct-acting relief cartridge is a normally closed, pressure-limiting device used to protect hydraulic systems from over pressurization. When the pressure at the inlet (Port 1) reaches the valve setting, the valve opens to tank (Port 2) to prevent over pressurization. This valve is dirt-tolerant and is designed to be very fast-acting with a low rate of pressure rise, but at the expense of smoothness.

TECHNICAL DATA

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

Maximum Operating Pressure	6000 psi
Factory Pressure Settings Established at	1 gpm
Typical valve leakage at 110 SUS (24cSt) at 90% of valve setting	.6 in³/min.
Cap Hex Size	22 mm
Cap Torque	31 - 35 lbf ft
Response Time - Typical	2 ms

CONFIGURATION OPTIONS

Model Code Example: RDUALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL L Tamper Resistant - Factory Set **A** 1750 - 3625 psi (120-250 bar), 2200 psi

(152 bar) Standard Setting **B** 580 - 2030 psi (40-140 bar), 725 psi (50 bar) Standard Setting

C 3200 - 5950 psi (220-410 bar), 3600 psi (250 bar) Standard Setting

N Buna-N

© 2023 Sun Hydraulics 207 of 210



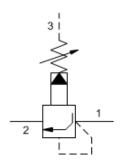
MODEL

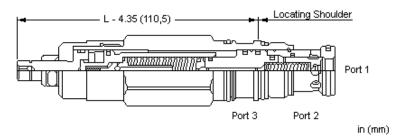
Anti-Shock, pilot-operated, balanced poppet sequence valve with drain to port 3

SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A



sunhydraulics.com/model/SDFT





Pilot-operated, anti shock sequence cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

The external drain makes the valve insensitive to pressure at port 2.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	200 - 400 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990402007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990402006

CONFIGURATION OPTIONS

Model Code Example: SDFTLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) L Standard Screw Adjustment **A** 2000 - 3000 psi (140 - 210 bar), 2000

psi (140 bar) Standard Setting C 4500 - 6000 psi (315 - 420 bar), 4500 psi (315 bar) Standard Setting

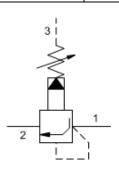
W 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

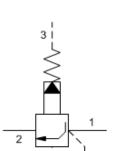
N Buna-N V Viton

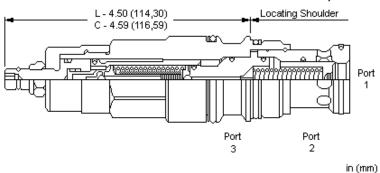
© 2023 Sun Hydraulics 208 of 210



sunhydraulics.com/model/SDHT







Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

The external drain makes the valve insensitive to pressure at port 2.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm	
Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at Reseat	10 drops/min.	
Pressure Ramp Up Time	300 - 500 ms	
Response Time - Typical	2 ms	
Adjustment - No. of CW Turns from Min. to Max. setting	5	
Locknut Hex Size	9/16 in.	
Locknut Torque	80 - 90 lbf in.	
Seal kit - Cartridge	Buna: 990217007	
Seal kit - Cartridge	Polyurethane: 990217002	
Seal kit - Cartridge	Viton: 990217006	

(N)

CONFIGURATION OPTIONS

C Tamper Resistant - Factory Set

CONTROL

Model Code Example: SDHTLAN

L Standard Screw Adjustment A 2000 -

A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

(L) ADJUSTMENT RANGE

C 4500 - 6000 psi (315 - 420 bar), 4500 psi (315 bar) Standard Setting
W 3000 - 4500 psi (210 - 315 bar), 3000

(A) SEAL MATERIAL

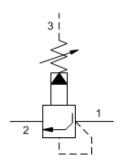
N Buna-N
V Viton

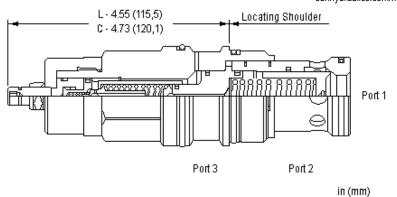
W 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

© 2023 Sun Hydraulics 209 of 210



sunhydraulics.com/model/SDJT





Pilot-operated, anti shock sequence cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

The external drain makes the valve insensitive to pressure at port 2.

TECHNICAL DATA

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

Factory Pressure Settings Established at	4 gpm
Maximum Operating Pressure 5000 psi	
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	200 - 400 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990219007
Seal kit - Cartridge	Viton: 990219006

CONFIGURATION OPTIONS

Model Code Example: SDJTLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Concealed Manual Override

A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

C 4500 - 6000 psi (315 - 420 bar), 4500 psi (315 bar) Standard Setting

W 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

N Buna-N

V Viton

Standard Material/Coating
//LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 210 of 210

driving fluid power innovation since 1970



www.sunhydraulics.com



Sun Hydraulics Headquarters Sarasota, Florida USA +1 941 362 1200

Custom Fluidpower Pty Ltd (A Sun Hydraulics Company) Newcastle, Australia +61 02 4953 5777 sales@custom.com.au Sun Hydraulics Limited Coventry, England +44 2476 217 400 sales@sunuk.com

Sun Hydraulics Korea Corp. Incheon, Korea +82 3281 31350 sales@sunhydraulics.co.kr Sun Hydraulik GmbH Erkelenz, Germany +49 2431 80910 sales@sunhydraulik.de

Sun Hydraulics China Co. Ltd. Shanghai, P.R. China +86 2162 375885 sunchinainfo@sunhydraulics.com Sun Hydraulics Corp. (India) Bangalore, India +91 8028 456325 sunindiainfo@sunhydraulics.com

Sun Hydraulics Corp. (S.America) Rosario, Argentina +54 9 341 584 3075 ventas@sunhydraulics.com



Pressure Control, Relief Cartridges

Powered by Sun **QuickPrint**, your on-demand, customized catalogue solution.

This information is subject to change without notice. Visit www.sunhydraulics.com for complete and up to date information.



RPEI	Electro-proportional relief valve - high pressure setting with no	1
RVCK	FLeX Series 2-stage, solenoid-operated adjustable relief valve, normally vented	2
RVCL	FLeX Series 2-stage, solenoid-operated adjustable relief valve, energize to vent	3
RVCM	FLeX Series 2-stage, solenoid-operated adjustable relief valve, energize to block	4
RVCN	FLeX Series 2-stage, solenoid-operated adjustable relief valve, normally blocked	5
RPCC	Pilot-operated, balanced piston reliefvalve	6
RPEC	Pilot-operated, balanced piston reliefvalve	7
RPGC	Pilot-operated, balanced piston reliefvalve	8
RPIC	Pilot-operated, balanced piston reliefvalve	9
RPKC	Pilot-operated, balanced piston reliefvalve	11
RDBA	Direct-acting reliefvalve	12
RDDA	Direct-acting reliefvalve	13
RDFA	Direct-acting reliefvalve	14
RDHA	Direct-acting reliefvalve	15
RDJA	Direct-acting reliefvalve	16
RBDA	Bi-directional, direct-acting relief valve	17
RBFA	Bi-directional direct-acting relief valve	18
RGFA	Low-pressure-range, direct-acting relief valve	19
RDDA3	Non-adjustable direct-acting reliefvalve	20
RDFA3	Non-adjustable direct-acting reliefvalve	21
RDDT	Direct-acting relief valve, CE marked	22



RPEE	Fast-acting, pilot-operated, balanced piston relief valve	23
RPGE	Fast-acting, pilot-operated, balanced piston relief valve	24
RPIE	Fast-acting, pilot-operated, balanced piston relief valve	25
RPKE	Fast-acting, pilot-operated, balanced piston relief valve	26
RPES	Pilot-operated, balanced poppet reliefvalve	27
RPGS	Pilot-operated, balanced poppet reliefvalve	28
RPIS	Pilot-operated, balanced poppet reliefvalve	29
RPKS	Pilot-operated, balanced poppet reliefvalve	30
RPET	Anti-Shock, pilot-operated, balanced poppet relief valve	31
RPGT	Anti-Shock, pilot-operated, balanced poppet relief valve	32
RPIT	Anti-Shock, pilot-operated, balanced poppet relief valve	33
RPKT	Anti-Shock, pilot-operated, balanced poppet relief valve	34
RBAA	Direct-acting relief valve - pilot capacity	35
RBAC	Direct-acting relief valve - pilot	36
RBAE	Direct-acting relief valve - pilot	37
RQCB	Kick-down, pilot-operated, balanced piston relief valve	38
RQEB	Kick-down, pilot-operated, balanced piston relief valve	39
RQGB	Kick-down, pilot-operated, balanced piston relief valve	40
RQIB	Kick-down, pilot-operated, balanced piston relief valve	41
RQKB	Kick-down, pilot-operated, balanced piston relief valve	42
RPGD	Air-controlled, pilot-operated, balanced piston relief valve	43



RPID	Air-controlled, pilot-operated, balanced piston relief valve	44
RPKD	Air-controlled, pilot-operated, balanced piston relief valve	45
RBAB	Air-controlled, direct-acting relief valve - pilot capacity	46
RBAR	Air-controlled, direct-acting relief valve - pilot capacity	47
RVBA	Ventable, pilot-operated, balanced piston relief valve	48
RVCA	Ventable, pilot-operated, balanced piston relief valve	49
RVEA	Ventable, pilot-operated, balanced piston relief valve	50
RVGA	Ventable, pilot-operated, balanced piston relief valve	51
RVIA	Ventable, pilot-operated, balanced piston relief valve	52
RVCS	Ventable, pilot-operated, balanced poppet reliefvalve	53
RVES	Ventable, pilot-operated, balanced poppet reliefvalve	54
RVGS	Ventable, pilot-operated, balanced poppet reliefvalve	55
RVIS	Ventable, pilot-operated, balanced poppet reliefvalve	56
RVET	Anti-Shock, ventable, pilot-operated, balanced poppet reliefvalve	57
RVGT	Anti-Shock, ventable, pilot-operated, balanced poppet reliefvalve	58
RVIT	Anti-Shock, ventable, pilot-operated, balanced poppet reliefvalve	59
RBAD	Dual, direct-acting relief valve - pilot capacity	60
HRDA	Direct-acting relief valve - before	61
HRDB	Direct-acting relief valve - after check	62
HVCA	Ventable, pilot-operated, balanced piston relief valve - before	63
HVCA8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity - before check	64



RVCD	Ventable, pilot-operated, balanced piston relief valve with drain to port
RVED	Ventable, pilot-operated, balanced piston relief valve with drain to port
RVGD	Ventable, pilot-operated, balanced piston relief valve with drain to port
RVID	Ventable, pilot-operated, balanced piston relief valve with drain to port
RPEC8	Pilot-operated, balanced piston relief main stage with integral T-8A control69 cavity
RPGC8	Pilot-operated, balanced piston relief main stage with integral T-8A control70 cavity
RPIC8	Pilot-operated, balanced piston relief main stage with integral T-8A control71 cavity
RPKC8	Pilot-operated, balanced piston relief main stage with integral T-8A control72 cavity
RPES8	Pilot-operated, balanced poppet relief main stage with integral T-8A control73 cavity
RPGS8	Pilot-operated, balanced poppet relief main stage with integral T-8A control74 cavity
RPIS8	Pilot-operated, balanced poppet relief main stage with integral T-8A control75 cavity
RPKS8	Pilot-operated, balanced poppet relief main stage with integral T-8A control76 cavity
RVCD8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control77 cavity and drain to port 4
RVED8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control78 cavity and drain to port 4
RVGD8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control79 cavity and drain to port 4
RVID8	Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control80 cavity and drain to port 4
RBAP	Electro-proportional relief valve - pilot
RBAN	Electro-proportional relief valve - pilot capacity, high pressure setting with no84 command
RDUA	Direct-acting relief valve, 6000 psi (420 bar) - common



Cavity Information

Series	Ports	Cavities
Series Z Cartridges 3/8-24 UNF Cartridge Thread 5 mm Valve Hex Size 11 - 14 Nm Valve Installation Torque	3-Port	T-382A
Series P Cartridges M16 Cartridge Thread 22,2 mm Valve Hex Size 27 - 33 Nm Valve Installation Torque	2-Port 2-Port (Deep) 3-Port	T-8A T-8DP T-9A
Series 0 Cartridges M16 Cartridge Thread 19,1 mm Valve Hex Size 25,4 mm Valve Hex Size 27 - 33 Nm Valve Installation Torque	2-Port 2-Port (Deep) 3-Port 3-Port 4-Port	T-162A T-162DP T-150A T-163A T-30A
Series 0C Cartridges 8/4-16 UNF Cartridge Thread 22,2 mm Valve Hex Size 19-22 lbf ft Valve Installation Torque	4-Port (Common)	SC-08-04
Series 1 Cartridges M20 Cartridge Thread 22,2 mm Valve Hex Size 41 - 47 Nm Valve Installation Torque	2-Port 2-Port 3-Port 4-Port 4-Port 6-Port	T-10A T-13A T-11A T-21A T-31A T-61A
Series 1C Cartridges 7/8-14 UNF Cartridge Thread 25,4 mm Valve Hex Size 23-26 lbf ft Valve Installation Torque	2-Port (Common) 4-Port (Common)	SC-10-02 SC-10-04
Series 2 Cartridges 1"-14 UNS Cartridge Thread 28,6 mm Valve Hex Size 61 - 68 Nm Valve Installation Torque	2-Port 2-Port 3-Port 4-Port 4-Port 4-Port (Dual path) 6-Port 6-Port	T-3A T-5A T-2A T-22A T-32A T-52AD T-52A T-62A
Series 3 Cartridges M36 Cartridge Thread B1,8 mm Valve Hex Size 203 - 217 Nm Valve Installation Torque	2-Port 3-Port 4-Port 4-Port 4-Port (Dual path) 6-Port 6-Port	T-16A T-17A T-23A T-33A T-53AD T-53A T-53A
Series 4 Cartridges M48 Cartridge Thread	2-Port (Undercut)	T-18AU

41,3 mm Valve Hex Size 474 - 508 Nm Valve Installation Torque

3-P0rt	1-19A
3-Port (Undercut)	T-19AU
4-Port	T-24A
4-Port (Undercut)	T-24AU
4-Port	T-34A
4-Port (Dual path)	T-54AD
6-Port	T-54A
6-Port	T-64A

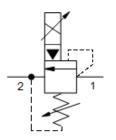


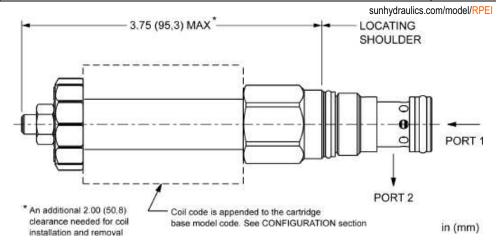


Electro-proportional relief valve - high pressure setting with no command

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-13A







This 2-port, pilot-operated relief cartridge is an electro-proportionally controlled, normally-closed pressure regulating valve. The valve is spring biased closed to its highest setting (customer specified). Increasing current to the coil will proportionally decrease the pressure setting. When the pressure at port 1 (inlet) is sufficient to overcome the spring force minus the solenoid force, as determined by the analog input signal, the poppet lifts and allows flow from port 1 to port 2 (outlet).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,775,812
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Viton: 990010006

NOTES

CONTROL

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: RPEILAN

L Standard Screw AdjustmentC Concealed Manual Override

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) COIL *

A 1500 - 3000 psi (105 - 210 bar), 3000 psi (210 bar) Standard Setting

N Buna-N
V Viton

* Additional coil options are available

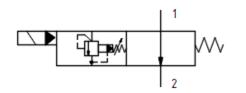
W 3000 - 5000 psi (210 - 350 bar), 5000 psi (350 bar) Standard Setting

© 2023 Sun Hydraulics 1 of 85

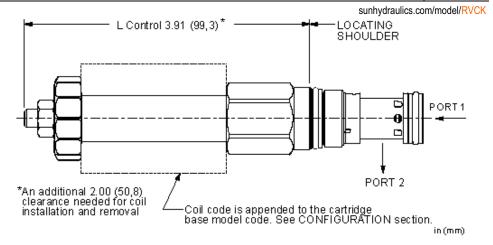


FLeX Series 2-stage, solenoid-operated adjustable relief valve, normally vented SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A





MODEL



This FLeX Series solenoid-operated, 2-stage, balanced relief cartridge is a pressure regulating valve.

The valve is normally vented. When vented (de-energized), the pressure drop from the inlet (port 1) to tank (port 2) is typically 100 psi (see performance curves).

Energizing the solenoid activates the relief function. In relief mode, the valve opens to tank (port 2), throttling flow to regulate the pressure when the pressure at the inlet (port 1) reaches the valve setting. The setting is adjustable with an adjust screw.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@2000 psi
Response Time - Typical	50 ms
Adjustment - No. of CW Turns from Min. to Max. setting	3.5
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,533,584
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: RVCKLJN

CONTROL (L) ADJUSTMENT RANGE (J) SEAL MATERIAL (N) COIL *

L Standard Screw Adjustment J 300 - 5000 psi (20 - 350 bar), 1000 psi (70 bar) Standard Setting N Buna-N N No coil

E PDM *Additional coil options are available

V Viton

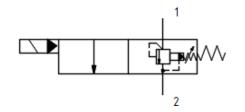
© 2023 Sun Hydraulics 2 of 85

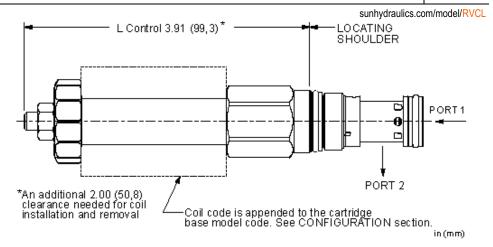




FLeX Series 2-stage, solenoid-operated adjustable relief valve, energize to vent SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







This FLeX Series solenoid-operated, 2-stage, balanced relief cartridge is a pressure regulating valve.

The valve is normally in relief mode. In relief mode, the valve is open to tank (port 2), throttling flow to regulate the pressure when the pressure at the inlet (port 1) reaches the valve setting. The setting is adjustable with an adjust screw.

Energizing the solenoid opens the main chamber to tank and the valve becomes vented. The pressure drop from the inlet (port 1) to tank (port 2) is typically 100 psi (see performance curves).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@2000 psi
Response Time - Typical	50 ms
Adjustment - No. of CW Turns from Min. to Max. setting	3.5
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,557,483
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: RVCLLJN

CONTROL (L) ADJUSTMENT RANGE (J) SEAL MATERIAL (N) COIL*

L Standard Screw Adjustment

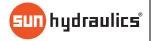
J 300 - 5000 psi (20 - 350 bar), 1000 psi (70 bar) Standard Setting

N Buna-N
E EPDM
V Viton

* Additional coil options are available

No coil

© 2023 Sun Hydraulics 3 of 85

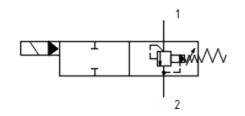


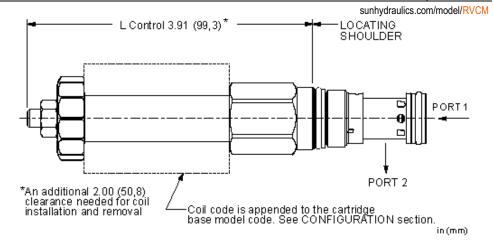


FLeX Series 2-stage, solenoid-operated adjustable relief valve, energize to block

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







This FLeX Series solenoid-operated, 2-stage, balanced relief cartridge is a pressure regulating valve.

The valve is normally in relief mode. In relief mode, the valve is open to tank (port 2), throttling flow to regulate the pressure when the pressure at the inlet (port 1) reaches the valve setting. The setting is adjustable with an adjust screw.

Energizing the solenoid blocks pilot flow. The valve blocks the flow path from inlet (port 1) to tank (port 2) similar to a spool-type directional valve.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@3000 psi
Response Time - Typical	50 ms
Adjustment - No. of CW Turns from Min. to Max. setting	3.5
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,570,932
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: RVCMLJN

CONTROL (L) ADJUSTMENT RANGE (J) SEAL MATERIAL (N) COIL*

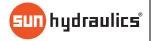
L Standard Screw Adjustment J 300 - 5000 psi (20 - 350 bar), 1000 psi (70 bar) Standard Setting

N Buna-N
E EPDM
V Viton

* Additional coil options are available

No coil

© 2023 Sun Hydraulics 4 of 85

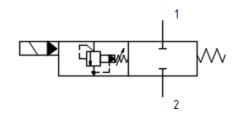


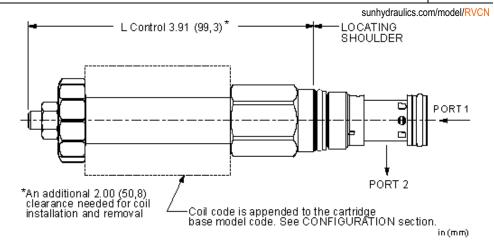


FLeX Series 2-stage, solenoid-operated adjustable relief valve, normally blocked

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







This FLeX Series solenoid-operated, 2-stage, balanced relief cartridge is a pressure regulating valve.

The valve is normally blocked. De-energized, the valve blocks the flow path from inlet (port 1) to tank (port 2) similar to a spool-type directional valve.

Energizing the solenoid activates the relief function. In relief mode, the valve opens to tank (port 2), throttling flow to regulate the pressure when the pressure at the inlet (port 1) reaches the valve setting. The setting is adjustable with an adjust screw.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@3000 psi
Response Time - Typical	50 ms
Adjustment - No. of CW Turns from Min. to Max. setting	3.5
Locknut Hex Size	7/16 in.
Locknut Torque	45 - 55 lbf in.
U.S. Patent #	10,774,853
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

CONFIGURATION OPTIONS

Model Code Example: RVCNLJN

CONTROL (L) ADJUSTMENT RANGE (J) SEAL MATERIAL (N) COIL *

L Standard Screw Adjustment

J 300 - 5000 psi (20 - 350 bar), 1000 psi (70 bar) Standard Setting

N Buna-N
E EPDM
V Viton

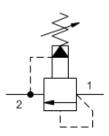
* Additional coil options are available

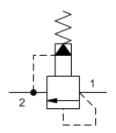
No coil

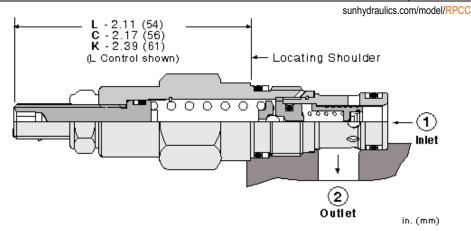
© 2023 Sun Hydraulics 5 of 85

Pilot-operated, balanced piston relief valve CAPACITY: 12 gpm / CAVITY: T-162A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	1/2 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	EPDM: 990162014
Seal kit - Cartridge	Polyurethane: 990162002
Seal kit - Cartridge	Viton: 990162006

CONFIGURATION OPTIONS

Model Code Example: RPCCLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 75 - 3000 psi (5 - 210 bar), 1000 psi (70 bar) Standard Setting

W 75 - 4500 psi (5 - 315 bar), 1000 psi (70 bar) Standard Setting

B 75 - 1500 psi (5 - 105 bar), 1000 psi (70 bar) Standard Setting

C 75 - 6000 psi (5 - 420 bar), 1000 psi (70 bar) Standard Setting

N 75 - 800 psi (5 - 55 bar), 400 psi (28 bar) Standard Setting

Q 75 - 400 psi (5 - 28 bar), 200 psi (14 bar) Standard Setting

N Buna-N E EPDM

V Viton

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 6 of 85

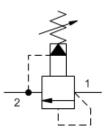


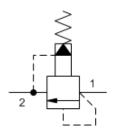


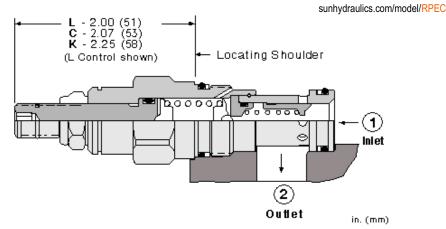
Pilot-operated, balanced piston relief valve

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	EPDM: 990010014
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

NOTES

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RPECLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- O Handknob with Panel Mount
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N E EPDM

V Viton

) MATERIAL/COATING

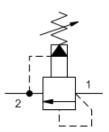
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

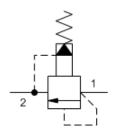
bar) Standard Setting

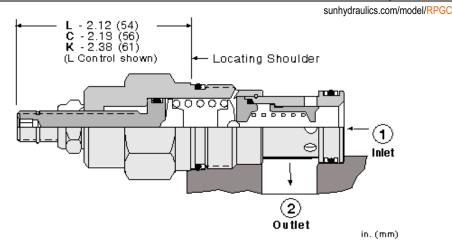
© 2023 Sun Hydraulics 7 of 85

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RPGCLAN

	L	Standard	Screw	Adjust	ment
--	---	----------	-------	--------	------

- C Tamper Resistant Factory Set
- J Capped Screw Adjustment
- K Handknob

CONTROL

- O Handknob with Panel Mount
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

A 100 - 3000 psi (7 - 210 bar), 1000 psi

(70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N E EPDM

V Viton

(N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 8 of 85

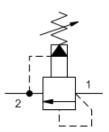


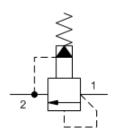
MODEL RPIC

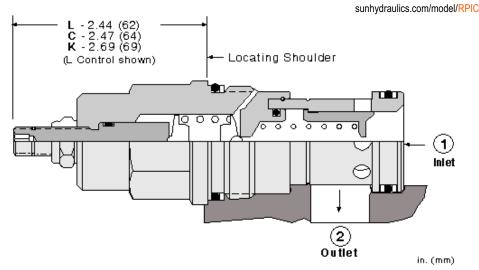
Pilot-operated, balanced piston relief valve

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	E000 noi
Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	EPDM: 990016014
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

CONFIGURATION OPTIONS

Model Code Example: RPICLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

CONTROL

(L) ADJUSTMENT RANGE

- A 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

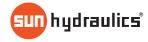
E EPDM

V Viton

(N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 9 of 85

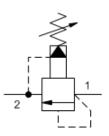


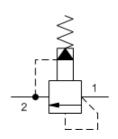


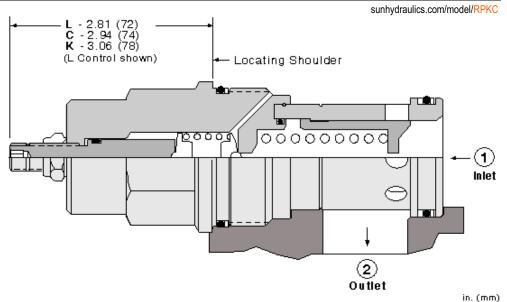
Pilot-operated, balanced piston relief valve

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A









Pilot-operated, balanced-piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	EPDM: 990018014
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

CONFIGURATION OPTIONS

Model Code Example: RPKCLAN

CONTROL (L) AD L Standard Screw Adjustment A

- C Tamper Resistant Factory Set
- **K** Handknob
- Q Capped and Lockwired
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

A 100 2000 noi /7 210 hor

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- psi (70 bar) Standard Setting **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000
- D psi (70 har) Standard Setting bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- Q 60 400 psi (4 28 bar), 200 psi (14

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

bar) Standard Setting
© 2023 Sun Hydraulics 10 of 85

© 2023 Sun Hydraulics 11 of 85

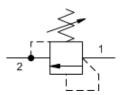


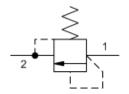
MODEL RDBA

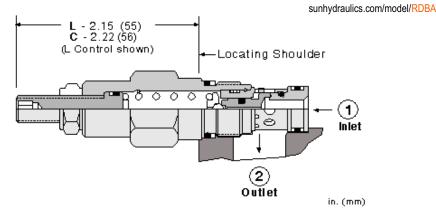
Direct-acting relief valve

CAPACITY: 12 gpm / CAVITY: T-162A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>85% of crack setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	1/2 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	EPDM: 990162014
Seal kit - Cartridge	Polyurethane: 990162002
Seal kit - Cartridge	Viton: 990162006

CONFIGURATION OPTIONS

Model Code Example: RDBALAN

CONTROL (L)

- C Tamper Resistant Factory Set
- K Handknob

(L) ADJUSTMENT RANGE (A A 500 - 3000 psi (35 - 210 bar), 1000 psi

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

(70 bar) Standard Setting **W** 800 - 4500 psi (55 - 315 bar), 1000 psi

- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- **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 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting

N Buna-N
E EPDM

V Viton

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

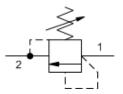
© 2023 Sun Hydraulics 12 of 85

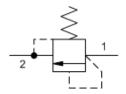


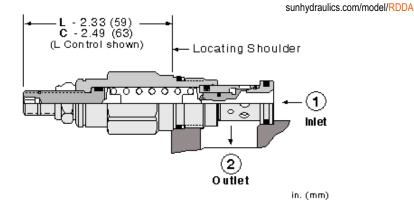


SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	EPDM: 990310014
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RDDALAN

CONTROL (L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- Y Tri-Grip Handknob

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- **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** 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting

N Buna-N E EPDM

V Viton

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

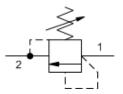
© 2023 Sun Hydraulics 13 of 85

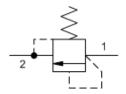


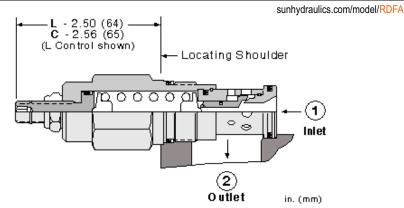


SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	EPDM: 990303014
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

CONFIGURATION OPTIONS

Model Code Example: RDFALAN

- L Standard Screw Adjustment
- C Tamper Resistant Factory Set
- **Q** Capped and Lockwired

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

V Viton

MATERIAL/COATING

/LH Mild Steel, Zinc-Nickel

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

- W 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi
- (70 bar) Standard Setting 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 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7

bar) Standard Setting

N Buna-N E EPDM /AP Stainless Steel, Passivated

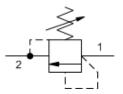
© 2023 Sun Hydraulics 14 of 85

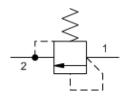


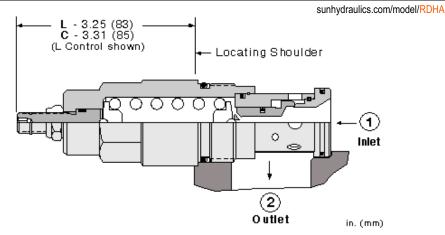


SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990316007
Seal kit - Cartridge	Viton: 990316006

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

CONFIGURATION OPTIONS

Model Code Example: RDHALAN

V Viton

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting W 800 - 4500 psi (55 - 315 bar), 1000 psi

(70 bar) Standard Setting

B 300 - 1500 psi (20 - 105 bar), 1000 psi (70 bar) Standard Setting

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 100 - 400 psi (7 - 28 bar), 200 psi (14 bar) Standard Setting

S 50 - 200 psi (3,5 - 14 bar), 100 psi (7 bar) Standard Setting

N Buna-N Standard Material/Coating **E** EPDM

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

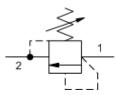
© 2023 Sun Hydraulics 15 of 85

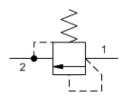


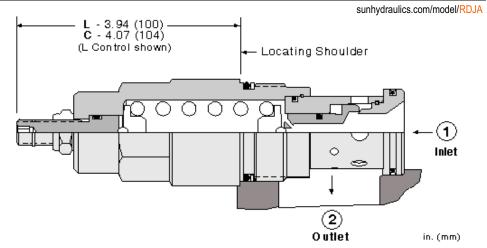


SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A









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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990318007
Seal kit - Cartridge	EPDM: 990318014
Seal kit - Cartridge	Viton: 990318006

CONFIGURATION OPTIONS

Model Code Example: RDJALAN

V Viton

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- Q Capped and Lockwired
- A 500 3000 psi (35 210 bar), 1000 psi (70 bar) Standard Setting
- **W** 800 4500 psi (55 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 300 1500 psi (20 105 bar), 1000 psi (70 bar) Standard Setting
- 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 100 400 psi (7 28 bar), 200 psi (14 bar) Standard Setting
- **S** 50 200 psi (3,5 14 bar), 100 psi (7 bar) Standard Setting

N Buna-N

Standard Material/Coating **E** EPDM

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 16 of 85

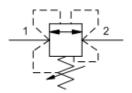


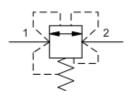


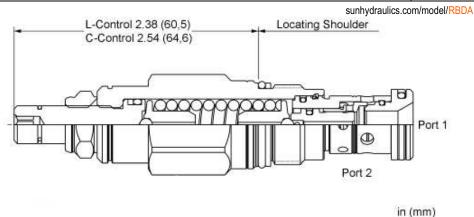
Bi-directional, direct-acting relief valve

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









The bi-directional, direct-acting relief cartridge is a normally closed, pressure-limiting valve used to protect hydraulic components from pressure transients. When the pressure differential between ports 1 and 2 exceeds the valve setting, the valve starts to open, throttling flow to limit the pressure rise, regardless of the direction.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>85% of setting
Hysteresis	≤ 3 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
U.S. Patent #	11,384,857
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RBDALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N

L Standard Screw Adjustment

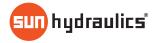
C Tamper Resistant - Factory Set

A 1200 - 3000 psi (85-210 bar), 1500 psi (105 bar) Standard Setting

W 3000 - 5000 psi (210 - 350 bar), 4000 psi (280 bar) Standard Setting

N Buna-N V Viton

© 2023 Sun Hydraulics 17 of 85



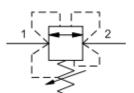


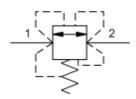
Bi-directional direct-acting relief valve

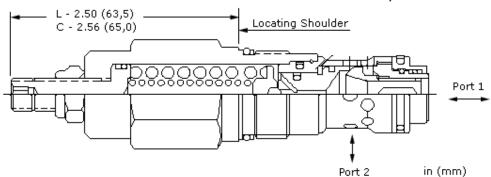
SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-3A



sunhydraulics.com/model/RBFA







The bi-directional, direct-acting relief cartridge is a normally closed, pressure-limiting valve used to protect hydraulic components from pressure transients. When the pressure differential between ports 1 and 2 exceeds the valve setting, the valve starts to open, throttling flow to limit the pressure rise, regardless of the direction.

Both directions have very similar setting and performance.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	30 drops/min.
Response Time - Typical	2 ms
Reseat	>85% of setting
Hysteresis	≤ 3 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

(N)

CONFIGURATION OPTIONS

CONTROL

Model Code Example: RBFALWN

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

N Buna-N
V Viton

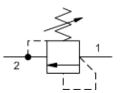
(W) SEAL MATERIAL

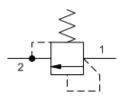
C 1500 - 6000 psi (105 - 420 bar), 1500 psi (105 bar) Standard Setting

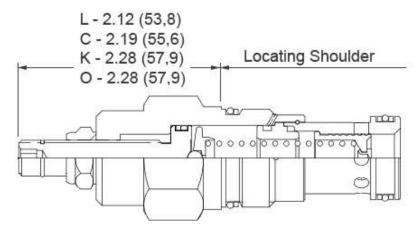
© 2023 Sun Hydraulics 18 of 85



sunhydraulics.com/model/RGFA







in (mm)

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.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel. **NOTES**

CONFIGURATION OPTIONS

Model Code Example: RGFALCN

CONTROL (L) ADJUSTMENT RANGE (C) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob
- O Handknob with Panel Mount

C 18 - 50 psi (1,2 - 3,5 bar), 50 psi (3,5 bar) Standard Setting **E** 20 - 75 psi (1,4 - 5 bar), 75 psi (5 bar)

Standard Setting

F 35 - 80 psi (2,4 -5,5 bar), 80 psi (5,5

G 50r) \$50n\$4r(2Settingbar), 150 psi (10,5 bar) Standard Setting

N Buna-N

E EPDM V Viton

Standard Material/Coating

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 19 of 85

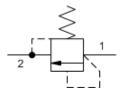


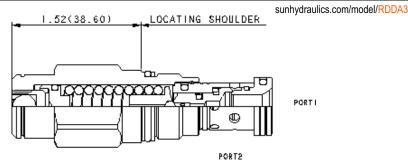


Non-adjustable direct-acting relief valve

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A







Non-adjustable 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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RDDA3AN

ADJUSTMENT RANGE

(A) SEAL MATERIAL

N Buna-N

V Viton

(N) MATERIAL/COATING

A 500 - 3000 psi (35 - 210 bar) **C** 1000 - 6000 psi (70 - 420 bar)

Standard Material/Coating

D 200 - 800 psi (14 - 55 bar)

/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 20 of 85

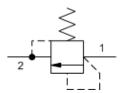


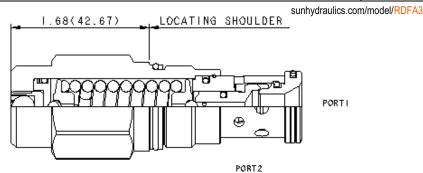
MODEL RDFA3

Non-adjustable direct-acting relief valve

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A







Non-adjustable 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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	EPDM: 990303014
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

CONFIGURATION OPTIONS

Model Code Example: RDFA3AN

ADJUSTMENT RANGE (A) SEAL MATERIAL (

A 500 - 3000 psi (35 - 210 bar) **C** 1000 - 6000 psi (70 - 420 bar)

N Buna-N
V Viton

D 200 - 800 psi (14 - 55 bar)

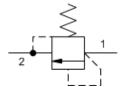
© 2023 Sun Hydraulics 21 of 85

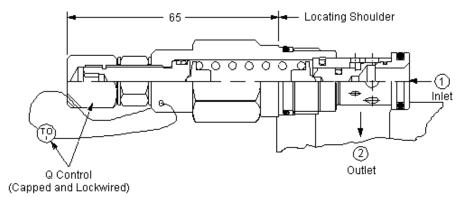
Direct-acting relief valve, CE marked

SERIES 1 / CAPACITY: 19.8 gpm / CAVITY: T-10A



sunhydraulics.com/model/RDD1





Dimensions in mm

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.

The CE marked valve is a safety valve that meets the requirements of the European Directive for Pressurized Devices (PED) 2014/68/EU. The valve setting represents the excess operating pressure at which the valve opens. Valve capacity can be determined from the performance curve. It shows an approved flow which depends on the excess operating pressure. As a requirement of the PED, the system pressure at the maximum approved flow is a maximum of 10% above the excess operating pressure.

TECHNICAL DATA

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

Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Reseat	>90% of setting
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RDDTQAN

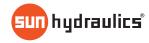
V Viton

CONTROL (Q) ADJUSTMENT RANGE (A) SEAL MATERIAL Q Capped and Lockwired A 100 - 210 bar (100 - 210 bar) N Buna-N

> **B** 90 - 99 bar (90 - 99 bar) C 315 - 422 bar (315 - 422 bar)

W 211 - 314 bar (211 - 314 bar)

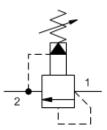
© 2023 Sun Hydraulics 22 of 85

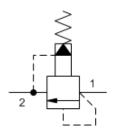


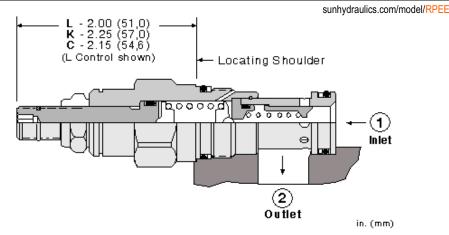


Fast-acting, pilot-operated, balanced piston relief valve SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









Fast-acting, pilot-operated, balanced piston relief cartridges are normally closed, pressure-limiting valves used to protect hydraulics components from pressure transients. Fast opening and closing is gained at the expense of smoothness. 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 have low pressure rise vs. flow and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel. **NOTES**

CONFIGURATION OPTIONS

Model Code Example: RPEELAN

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- O Handknob with Panel Mount
- Y Tri-Grip Handknob

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

V Viton

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 23 of 85

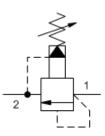


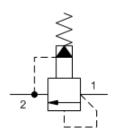


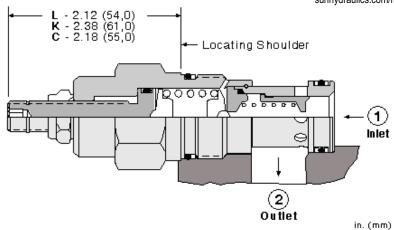
Fast-acting, pilot-operated, balanced piston relief valve SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A



sunhydraulics.com/model/RPGE







Fast-acting, pilot-operated, balanced piston relief cartridges are normally closed, pressure-limiting valves used to protect hydraulics components from pressure transients. Fast opening and closing is gained at the expense of smoothness. 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 have low pressure rise vs. flow and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RPGELAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob
- O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- **A** 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14
- w ክብን Standorfs የተነፃያ 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N
E EPDM

V Viton

MATERIAL/COATING

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

Standard Material/Coating

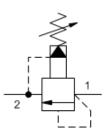
© 2023 Sun Hydraulics 24 of 85

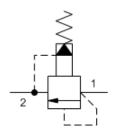


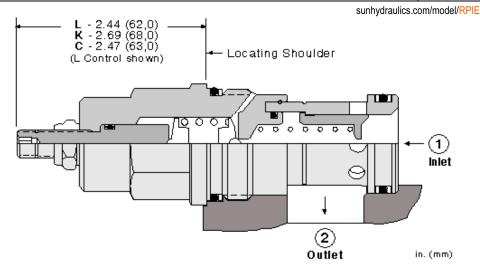


Fast-acting, pilot-operated, balanced piston relief valve SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









Fast-acting, pilot-operated, balanced piston relief cartridges are normally closed, pressure-limiting valves used to protect hydraulics components from pressure transients. Fast opening and closing is gained at the expense of smoothness. 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 have low pressure rise vs. flow and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

CONFIGURATION OPTIONS

Model Code Example: RPIELAN

CONTROL

(L) ADJUSTMENT RANGE A 100 - 3000 psi (7 - 210 bar), 1000 psi

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

(70 bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 1000 psi

(70 bar) Standard Setting

C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting

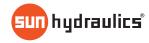
D 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Standard Material/Coating Viton /AP Stainless Steel, Passivated

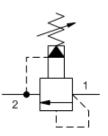
© 2023 Sun Hydraulics 25 of 85

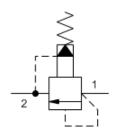


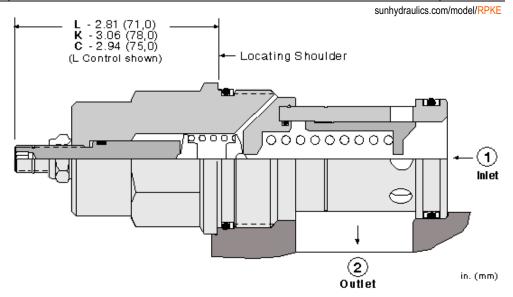


Fast-acting, pilot-operated, balanced piston relief valve SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A









Fast-acting, pilot-operated, balanced piston relief cartridges are normally closed, pressure-limiting valves used to protect hydraulics components from pressure transients. Fast opening and closing is gained at the expense of smoothness. 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 have low pressure rise vs. flow and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

CONFIGURATION OPTIONS

Model Code Example: RPKELAN

Chandond	C	Adjustment
Standard	SCraw	Adilletment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

N Buna-N

V Viton

MATERIAL/COATING

/AP Stainless Steel. Passivated /LH Mild Steel, Zinc-Nickel

Standard Material/Coating

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting

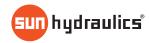
C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14

w 490 Standardi \$40,99 315 bar), 1000 psi (70 bar) Standard Setting

© 2023 Sun Hydraulics 26 of 85

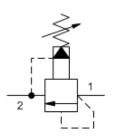


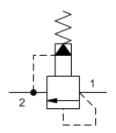
MODEL RPES

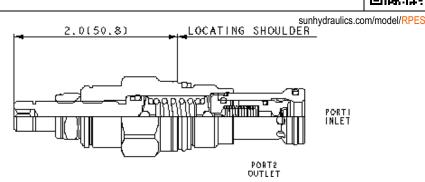
Pilot-operated, balanced poppet relief valve

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









Pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	10 drops/min.
Response Time - Typical	7 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RPESLAN

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

CONTROL

Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi

(L) ADJUSTMENT RANGE

(70 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting

C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting

N 60 - 800 psi (4 - 55 bar), 400 psi (28 bar) Standard Setting

Q 60 - 400 psi (4 - 28 bar), 200 psi (14 bar) Standard Setting

W 100 - 4500 psi (7 - 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL

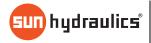
N Buna-N

E EPDM V Viton Standard Material/Coating /AP Stainless Steel, Passivated

MATERIAL/COATING

/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 27 of 85

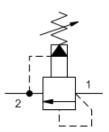


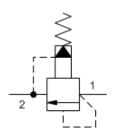
MODEL RPGS

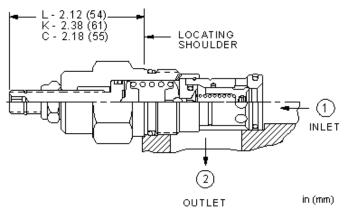
Pilot-operated, balanced poppet relief valve SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A



sunhydraulics.com/model/RPGS







Pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	7 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	EPDM: 990303014
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

CONFIGURATION OPTIONS

Model Code Example: RPGSLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28

bar) Standard Setting

- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 100 4500 psi (7 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

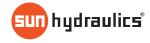
E EPDM V Viton

Standard Material/Costin

(N) MATERIAL/COATING

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 28 of 85



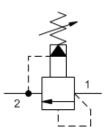
MODEL RPIS

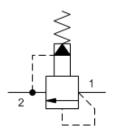
Pilot-operated, balanced poppet relief valve

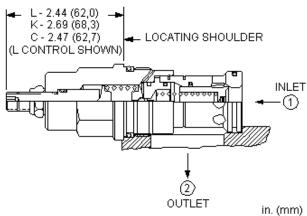
SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A



sunhydraulics.com/model/RPIS







Pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	7 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990316007
Seal kit - Cartridge	EPDM: 990316014
Seal kit - Cartridge	Viton: 990316006

CONFIGURATION OPTIONS

Model Code Example: RPISLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- ${\bf K}$ Handknob
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N E EPDM

V Viton

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 29 of 85



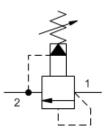


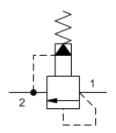
Pilot-operated, balanced poppet relief valve

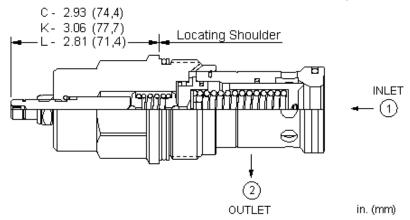
SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A



sunhydraulics.com/model/RPKS







Pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	7 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990318007
Seal kit - Cartridge	EPDM: 990318014
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990318006

CONFIGURATION OPTIONS

Model Code Example: RPKSLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

CONTROL

- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

Standard Material/Coating

© 2023 Sun Hydraulics 30 of 85

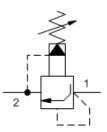


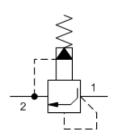


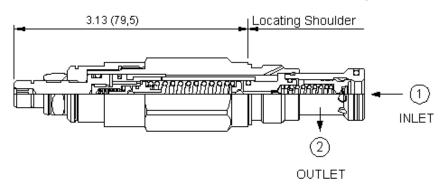
Anti-Shock, pilot-operated, balanced poppet relief valve SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A



sunhydraulics.com/model/RPET







in (mm)

Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	100 - 300 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	Viton: 990310006

CONFIGURATION OPTIONS

Model Code Example: RPETLWN

CONTROL (L)

(L) ADJUSTMENT RANGE

(W) SEAL MATERIAL

N Buna-N

(N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

W 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

psi (210 bar) Standard Setting V Viton 2000 - 3000 psi (140 - 210 bar), 2000

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

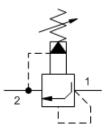
psi (140 bar) Standard Setting

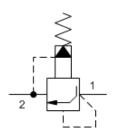
C 4500 - 6000 psi (315 - 420 bar), 4500 psi (315 bar) Standard Setting

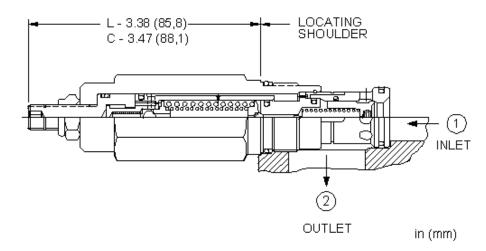
© 2023 Sun Hydraulics 31 of 85



sunhydraulics.com/model/RPGT







Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	200 - 400 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

NOTES

CONTROL

Patents: US#6,039,070; Germany EP 1 001 197; Japan #3,119,230

CONFIGURATION OPTIONS

Model Code Example: RPGTLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

N Buna-N V Viton

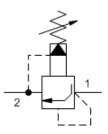
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

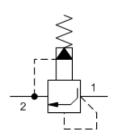
- **C** 4500 6000 psi (315 420 bar), 4500 psi (315 bar) Standard Setting
- **W** 3000 4500 psi (210 315 bar), 3000 psi (210 bar) Standard Setting

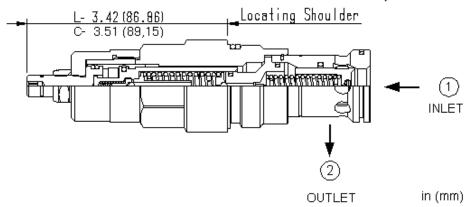
© 2023 Sun Hydraulics 32 of 85



sunhydraulics.com/model/RPIT







Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	300 - 500 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990316007
Seal kit - Cartridge	Viton: 990316006

NOTES

CONTROL

- Patents: US#6,039,070; Germany EP 1 001 197; Japan #3,119,230
- Patents: US#6,039,070; Germany EP 1 001 197; Japan #3,119,230

CONFIGURATION OPTIONS

Model Code Example: RPITLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

MATERIAL/COATING

A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

N Buna-N Viton

Standard Material/Coating

C Tamper Resistant - Factory Set

C 4500 - 6000 psi (315 - 420 bar), 4500 psi (315 bar) Standard Setting **W** 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 33 of 85

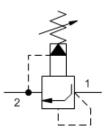


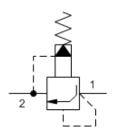


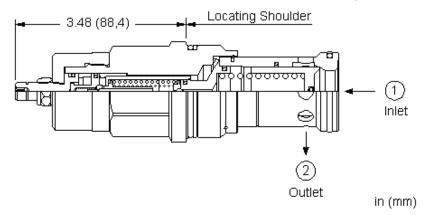
Anti-Shock, pilot-operated, balanced poppet relief valve SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A



sunhydraulics.com/model/RPKT







Pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	400 - 600 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990318007
Seal kit - Cartridge	Viton: 990318006

CONFIGURATION OPTIONS

Model Code Example: RPKTLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

A 2000 - 3000 psi (140 - 210 bar), 2000 psi (140 bar) Standard Setting

C 4500 - 6000 psi (315 - 420 bar), 4500 psi (315 bar) Standard Setting

W 3000 - 4500 psi (210 - 315 bar), 3000 psi (210 bar) Standard Setting

N Buna-N
V Viton

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 34 of 85

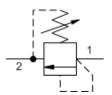


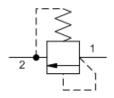


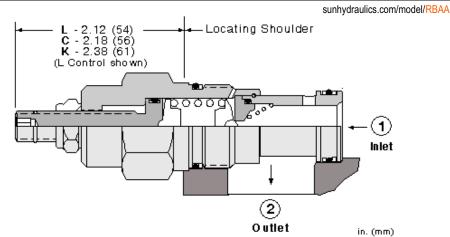
Direct-acting relief valve - pilot capacity

SERIES 2 / CAPACITY: .5 gpm / CAVITY: T-3A









Direct-acting, pilot relief cartridges are used to remotely control the pressure setting of other pilot-operated valves. Because capacity is limited to pilot flow, these valves should be used with other higher flow valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES For Series 2 cartridges configured with an O control (panel mount handknob), a 1.00 in. (25,4 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RBAALAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- J Capped Screw Adjustment
- K Handknob

CONTROL

- O Handknob with Panel Mount
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE A 25 - 3000 psi (1.7 - 210 bar)

- **A** 25 3000 psi (1,7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 25 1500 psi (1,7 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 25 6000 psi (1,7 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 25 4500 psi (1,7 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL si N Buna-N

E EPDM V Viton

(N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 35 of 85

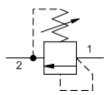


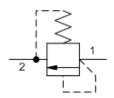


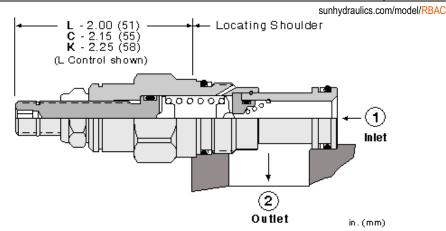
Direct-acting relief valve - pilot capacity

SERIES 1 / CAPACITY: .25 gpm / CAVITY: T-10A









Direct-acting, pilot relief cartridges are used to remotely control the pressure setting of other pilot-operated valves. Because capacity is limited to pilot flow, these valves should be used with other higher flow valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	EPDM: 990010014
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

NOTES For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RBACLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- J Capped Screw Adjustment
- K Handknob

CONTROL

O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- **A** 25 3000 psi (1,7 210 bar), 1000 psi (70 bar) Standard Setting
- **W** 25 4500 psi (1,7 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 25 1500 psi (1,7 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 25 6000 psi (1,7 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

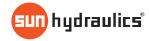
N Buna-N
E EPDM
V Viton

MATERIAL/COATING Standard Material/Coating

(N)

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 36 of 85



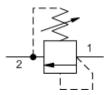


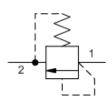
Direct-acting relief valve - pilot capacity

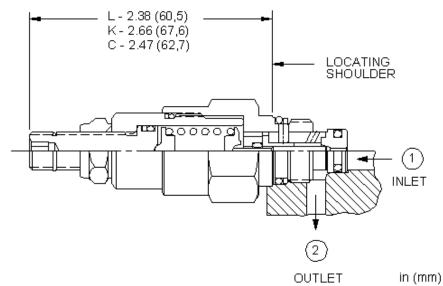
SERIES P / CAPACITY: 2.5 gpm / CAVITY: T-8A



sunhydraulics.com/model/RBAE







Two-port, pilot-stage, direct-acting relief cartridges are fully adjustable, normally closed pressure regulating valves. When the pressure at port 1 (inlet) is sufficient to overcome the spring force (valve setting), a flow path is opened from port 1 to port 2 (tank).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	15 drops/min.
Response Time - Typical	2 ms
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990608007
Seal kit - Cartridge	EPDM: 990608014
Seal kit - Cartridge	Polyurethane: 990008002
Seal kit - Cartridge	Viton: 990608006

NOTES

CONTROL

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RBAELAN

Ц	Standard	0 8	Screw	Aajust	ment	

- C Tamper Resistant Factory Set
- K Handknob
- O Handknob with Panel Mount
- Y Tri-Grip Handknob

A 25 - 3000 psi (1,7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 25 1500 psi (1,7 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 25 6000 psi (1,7 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28
- bar) Standard Setting
 E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 25 4500 psi (1,7 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL si N Buna-N

E EPDMV Viton

(N) MATERIAL/COATING Standard Material/Coating

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

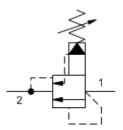
© 2023 Sun Hydraulics 37 of 85

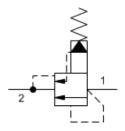
Kick-down, pilot-operated, balanced piston relief valve

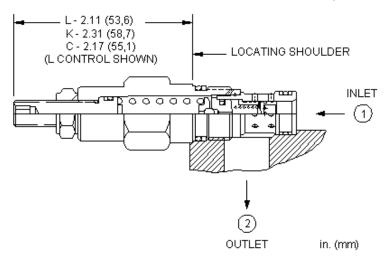
CAPACITY: 12 gpm / CAVITY: T-162A



sunhydraulics.com/model/RQCB







Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settling, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	Kick down point
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Polyurethane: 990162002
Seal kit - Cartridge	Viton: 990162006

NOTES

CONTROL

Do not use in load holding applications.

CONFIGURATION OPTIONS

Model Code Example: RQCBLAN

Ctandard Car	aw Adjustment	

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N)

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 75 - 3000 psi (5 - 210 bar), 1000 psi (70

bar) Standard Setting
B 75 - 1500 psi (5 - 105 bar), 1000 psi (70

bar) Standard Setting

C 75 - 6000 psi (5 - 420 bar), 1000 psi (70 bar) Standard Setting

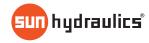
N 75 - 800 psi (5 - 55 bar), 400 psi (28 bar) Standard Setting

Q 75 - 400 psi (5 - 28 bar), 200 psi (14 bar) Standard Setting

W 75 - 4500 psi (5 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-NV Viton

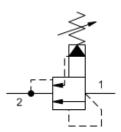
© 2023 Sun Hydraulics 38 of 85

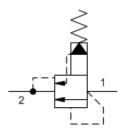


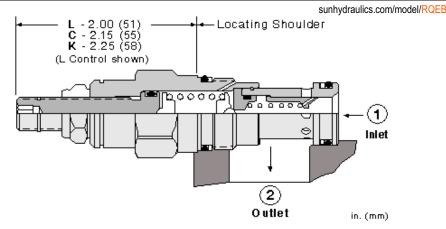


Kick-down, pilot-operated, balanced piston relief valve SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A









Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settling, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	Kick down point
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

NOTES

- Do not use in load holding applications.
- For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RQEBLAN

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

O Handknob with Panel Mount

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- W 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Standard Material/Coating V Viton

/AP Stainless Steel, Passivated

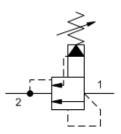
© 2023 Sun Hydraulics 39 of 85

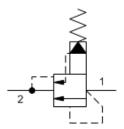


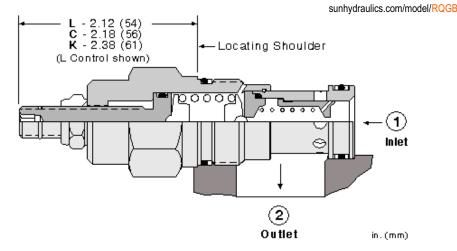


Kick-down, pilot-operated, balanced piston relief valve SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A









Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settling, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	Kick down point
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in ³ /min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES

- Do not use in load holding applications.
- For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RQGBLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- ${\bf K}$ Handknob

CONTROL

- O Handknob with Panel Mount
- W Hex Wrench Adjustment

A 100 - 3000 psi (7 - 210 bar), 1000 psi

(L) ADJUSTMENT RANGE

4 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

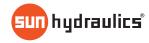
(A) SEAL MATERIAL N Buna-N

V Viton

(N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

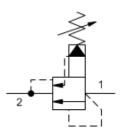
© 2023 Sun Hydraulics 40 of 85

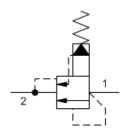


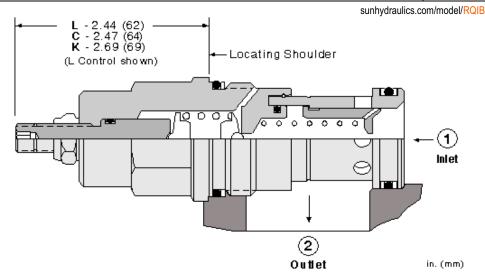
MODEL **RQIB**

Kick-down, pilot-operated, balanced piston relief valve SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A









Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settting, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	Kick down point
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

NOTES

CONTROL

K Handknob

Do not use in load holding applications.

CONFIGURATION OPTIONS

Model Code Example: RQIBLAN

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL N Buna-N

Viton

(N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

(70 bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 1000 psi

A 100 - 3000 psi (7 - 210 bar), 1000 psi

(70 bar) Standard Setting

C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting **D** 25 - 800 psi (1,7 - 55 bar), 400 psi (28

bar) Standard Setting E 25 - 400 psi (1,7 - 28 bar), 200 psi (14

bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

Standard Material/Coating /AP Stainless Steel, Passivated

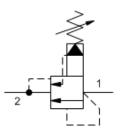
© 2023 Sun Hydraulics 41 of 85

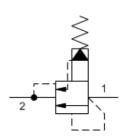


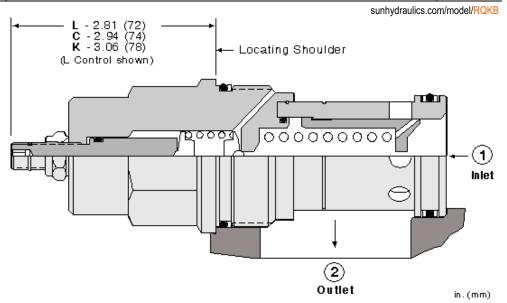


Kick-down, pilot-operated, balanced piston relief valve SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A









Kick-down relief cartridges act similar to a circuit breaker in an electrical system. The valves will kick completely open and remain open once the pressure at the inlet (port 1) exceeds the valve settting, creating an unrestricted flow path from port 1 to tank (port 2). The valve remains open as long as the pressure at port 1 exceeds the pressure at port 2. To reset the valve, flow from port 1 to port 2 must cease and pressure at port 2 must be equal to or greater than the pressure at port 1.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	Kick down point
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	25 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

NOTES

CONTROL

K Handknob

Do not use in load holding applications.

CONFIGURATION OPTIONS

Model Code Example: RQKBLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

MATERIAL/COATING

C Tamper Resistant - Factory Set

(70 bar) Standard Setting **B** 50 - 1500 psi (3,5 - 105 bar), 1000 psi

(70 bar) Standard Setting

A 100 - 3000 psi (7 - 210 bar), 1000 psi

C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting

D 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting

E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Standard Material/Coating **V** Viton /AP Stainless Steel, Passivated

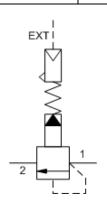
© 2023 Sun Hydraulics 42 of 85

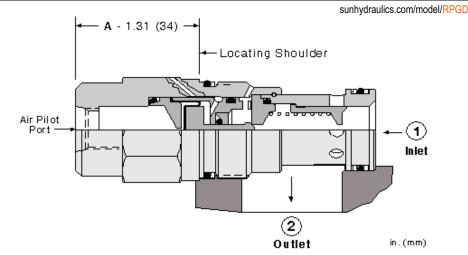


Air-controlled, pilot-operated, balanced piston relief valve

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A







Air-controlled, pilot-operated, balanced piston relief cartridges use compressed air over a diaphragm instead of an adjustable spring to control pressure setting. The air signal is supplied through a port in the hex-end of the cartridge. They are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	2000 psi
Pilot Ratio	20:1
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

CONFIGURATION OPTIONS

Model Code Example: RPGDABN

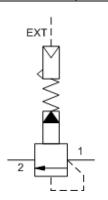
 CONTROL
 (A)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

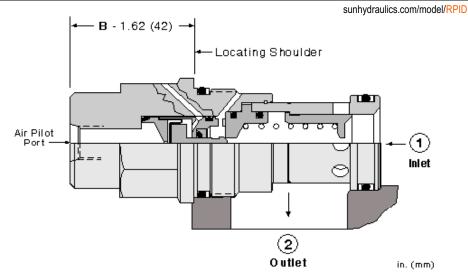
 A External 1/4 NPTF Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

 V Viton

© 2023 Sun Hydraulics 43 of 85







Air-controlled, pilot-operated, balanced piston relief cartridges use compressed air over a diaphragm instead of an adjustable spring to control pressure setting. The air signal is supplied through a port in the hex-end of the cartridge. They are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	2000 psi
Pilot Ratio	20:1
Hysteresis (with dither)	<4%
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

CONFIGURATION OPTIONS

Model Code Example: RPIDBBN

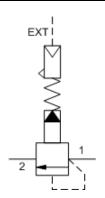
 CONTROL
 (B)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

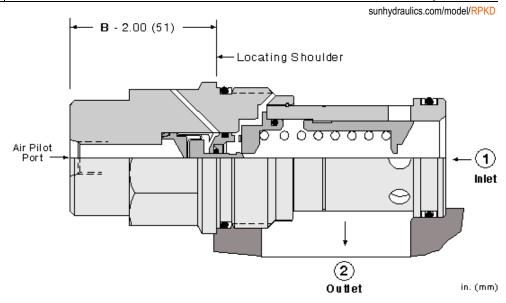
 B External 4-SAE Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N
 V Viton

© 2023 Sun Hydraulics 44 of 85

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A







Air-controlled, pilot-operated, balanced piston relief cartridges use compressed air over a diaphragm instead of an adjustable spring to control pressure setting. The air signal is supplied through a port in the hex-end of the cartridge. They are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	2000 psi
Pilot Ratio	20:1
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Maximum Air Pressure	150 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

CONFIGURATION OPTIONS

Model Code Example: RPKDBBN

 CONTROL
 (B)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

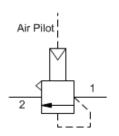
 B External 4-SAE Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

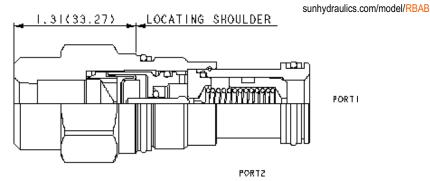
 V Viton

© 2023 Sun Hydraulics 45 of 85

SERIES 2 / CAPACITY: .5 gpm / CAVITY: T-3A







Air-controlled, pilot relief cartridges are used to remotely control the pressure setting of other pilot operated valves. Because capacity is limited to pilot flow, these valves should be used with valves with compatable pilot flows. They use compressed air over a diaphragm instead of an adjustable spring to control pressure setting, the air signal is supplied through a port in the hex-end of the cartridge.

TECHNICAL DATA

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

Maximum Operating Pressure	2000 psi
Pilot Ratio	20:1
Maximum Valve Leakage at 110 SUS (24 cSt) 5 drops/min.	
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	Viton: 990203006

CONFIGURATION OPTIONS

Model Code Example: RBABABN

 CONTROL
 (A)
 OPERATING RANGE
 (B)
 SEAL MATERIAL
 (N)

 A External 1/4 NPTF Port
 B 50 - 1500 psi (3,5 - 105 bar)
 N Buna-N

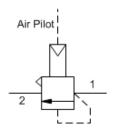
 V Viton

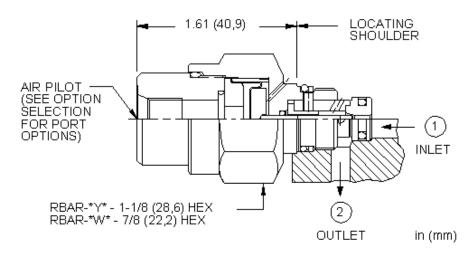
© 2023 Sun Hydraulics 46 of 85

SERIES P / CAPACITY: 2.5 gpm / CAVITY: T-8A



sunhydraulics.com/model/RBAR





Two-port, pilot-stage, air-controlled, direct-acting relief cartridges are normally closed pressure regulating valves. When the pressure at port 1 (inlet) is sufficient to overcome the force due to the air signal, a flow path is opened from port 1 to port 2 (tank). These cartridges are designed for pilot flow applications and utilize Sun's T-8A cavity so they can be used in conjunction with Sun's pilot-operated, main-stage valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	15 drops/min.
Maximum Pilot Pressure	150 psi
Pilot Control Port	See Control Options
Seal kit - Cartridge	Buna: 990608007
Seal kit - Cartridge	EPDM: 990608014
Seal kit - Cartridge	Polyurethane: 990008002
Seal kit - Cartridge	Viton: 990608006

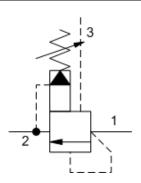
CONFIGURATION OPTIONS

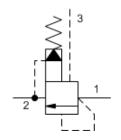
Model Code Example: RBARBWN

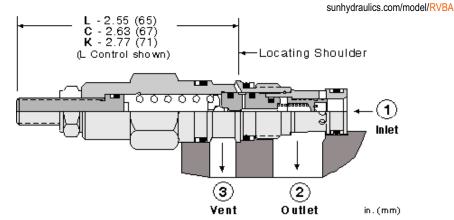
CONTROL	(B) AIR PILOT RATIO	(W) SEAL MATERIAL	(N)
B External 4-SAE Port	W 50:1	N Buna-N	
A External 1/8 NPTF Port	Y 75:1	E EPDM	
D External 1/8 BSPP Port		V Viton	

© 2023 Sun Hydraulics 47 of 85









Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	EPDM: 990163014
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: RVBALAN

CONTROL (L) ADJUSTMENT RANGE (N) MATERIAL/COATING (A) SEAL MATERIAL

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 75 - 3000 psi (5 - 210 bar), 1000 psi (70 bar) Standard Setting

W 75 - 4500 psi (5 - 315 bar), 1000 psi (70 bar) Standard Setting

B 75 - 1500 psi (5 - 105 bar), 1000 psi (70 bar) Standard Setting

C 75 - 6000 psi (5 - 420 bar), 1000 psi (70 bar) Standard Setting

N 75 - 800 psi (5 - 55 bar), 400 psi (28 bar) Standard Setting

Q 75 - 400 psi (5 - 28 bar), 200 psi (14

bar) Standard Setting

N Buna-N **E** EPDM

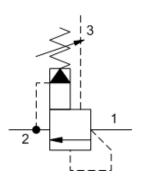
V Viton

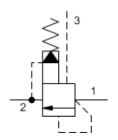
Standard Material/Coating /AP Stainless Steel, Passivated

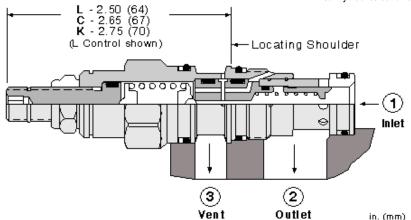
© 2023 Sun Hydraulics 48 of 85



sunhydraulics.com/model/RVCA







Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RVCALAN

Standard Sarow	Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

- 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000
- D 25i (7000) Standard Setting psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N

E EPDM V Viton

N) MATERIAL/COATING

Standard Material/Coating
/AP Stainless Steel, Passivated

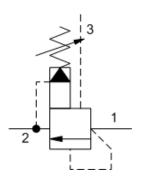
/AP Stainless Steel, Passivate
/LH Mild Steel, Zinc-Nickel

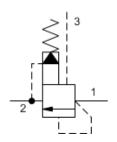
© 2023 Sun Hydraulics 49 of 85

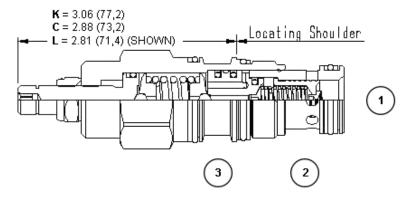
Ventable, pilot-operated, balanced piston relief valve SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A



sunhydraulics.com/model/RVEA







Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 15 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in ³ /min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

NOTES For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RVEALAN

Ctandar	d Carain	Adjustme	+
	o screw	Atomismie	21011

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

- O Handknob with Panel Mount
- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N

E EPDM V Viton (N) MATERIAL/COATING

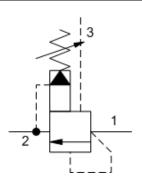
Standard Material/Coating
/AP Stainless Steel, Passivated

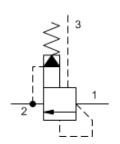
/LH Mild Steel, Zinc-Nickel

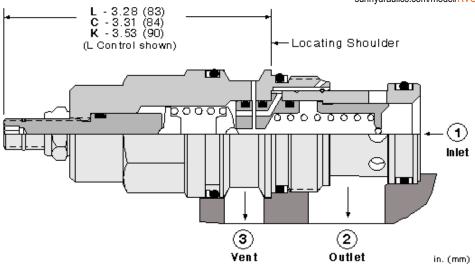
© 2023 Sun Hydraulics 50 of 85



sunhydraulics.com/model/RVGA







Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: RVGALAN

CONTROL	(L)	ADJUSTMENT RANGE	(A)	SEAL MATERIAL	(N)	MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

W 150 - 4500 psi (10,5 - 315 bar), 1000 psi (70 bar) Standard Setting

B 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting

C 150 - 6000 psi (10,5 - 420 bar), 1000

psi (70 bar) Standard Setting
D 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting

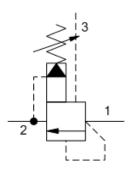
E 25 - 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting

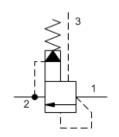
N Buna-NStandard Material/CoatingE EPDM/AP Stainless Steel, PassivatedV Viton/LH Mild Steel, Zinc-Nickel

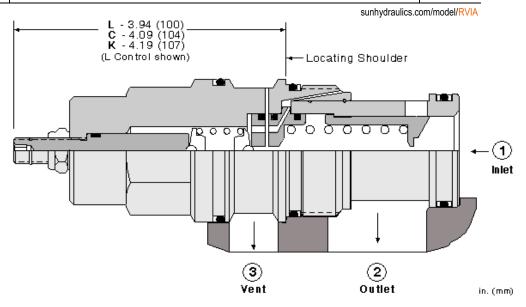
© 2023 Sun Hydraulics 51 of 85

Ventable, pilot-operated, balanced piston relief valve SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A









Ventable, pilot-operated, balanced piston relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: RVIALAN

N Buna-N

E EPDM

V Viton

(L) ADJUSTMENT RANGE (A) SEAL MATERIAL CONTROL

L Standard Screw Adjustment

- Tamper Resistant Factory Set
- **K** Handknob

- A 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting **W** 150 - 4500 psi (10,5 - 315 bar), 1000
- psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi
- c (130 baro Standard, Settingo bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- E 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- N 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting

(N) MATERIAL/COATING

Standard Material/Coating

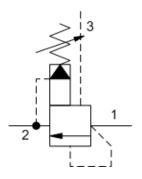
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

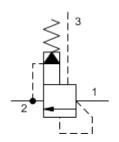
© 2023 Sun Hydraulics 52 of 85

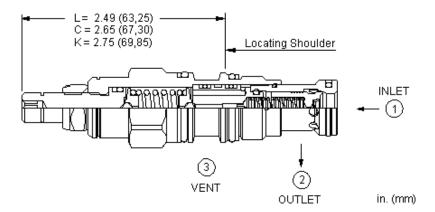
Ventable, pilot-operated, balanced poppet relief valve SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A



sunhydraulics.com/model/RVCS







Ventable, pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990611007
Seal kit - Cartridge	Viton: 990611006

CONFIGURATION OPTIONS

Model Code Example: RVCSLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

- A 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N E EPDM

V Viton

Standard Material/Coating

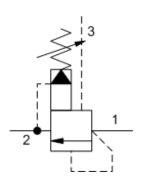
(N) MATERIAL/COATING

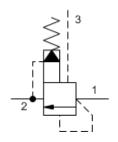
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

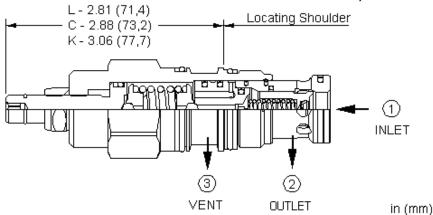
© 2023 Sun Hydraulics 53 of 85



sunhydraulics.com/model/RVES







Ventable, pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990402007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990402006

CONFIGURATION OPTIONS

Model Code Example: RVESLAN

п	Standa	d Scraw	Adjustment	

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

(L) ADJUSTMENT RANGE

100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting N 60 - 800 psi (4 - 55 bar), 400 psi (28
- bar) Standard Setting Q 60 - 400 psi (4 - 28 bar), 200 psi (14
- bar) Standard Setting W 150 - 4500 psi (10,5 - 315 bar), 1000

(A) SEAL MATERIAL

N Buna-N **E** EPDM

V Viton

(N) MATERIAL/COATING

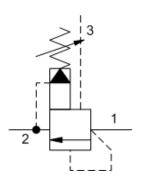
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

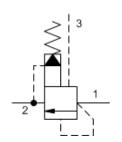
psi (70 bar) Standard Setting

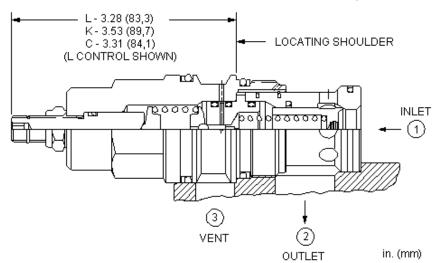
© 2023 Sun Hydraulics 54 of 85



sunhydraulics.com/model/RVGS







Ventable, pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990217007
Seal kit - Cartridge	Polyurethane: 990217002
Seal kit - Cartridge	Viton: 990217006

CONFIGURATION OPTIONS

Model Code Example: RVGSLAN

Ctandard Carou	A divistment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

SEAL MATERIAL N Buna-N

E EPDM

V Viton

Standard Material/Costi

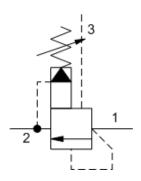
(N) MATERIAL/COATING

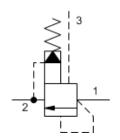
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

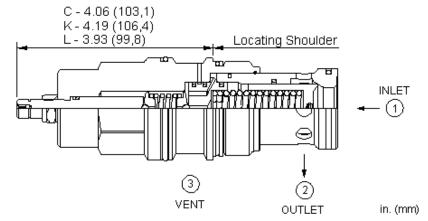
© 2023 Sun Hydraulics 55 of 85



sunhydraulics.com/model/RVIS







Ventable, pilot-operated, balanced-poppet relief cartridges are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at Reseat	10 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990219007
Seal kit - Cartridge	Viton: 990219006

CONFIGURATION OPTIONS

Model Code Example: RVISLAN

CONTROL (L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **N** 60 800 psi (4 55 bar), 400 psi (28 bar) Standard Setting
- **Q** 60 400 psi (4 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

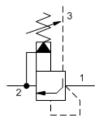
© 2023 Sun Hydraulics 56 of 85

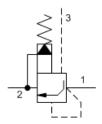
Anti-Shock, ventable, pilot-operated, balanced poppet relief valve

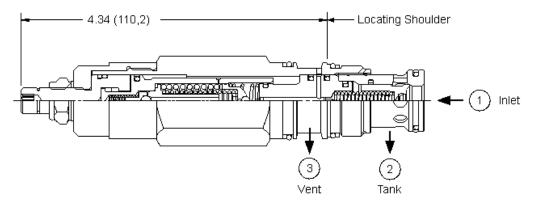
SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A



sunhydraulics.com/model/RVE







Ventable, pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. These 3 port valves include a vent port (port 3) that connects between the main piston and the pilot stage to provide for remote control by other pilot or 2-way valves. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pressure Ramp Up Time	200 - 400 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990402007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990402006

NOTES

Patents are pending for this product.

CONFIGURATION OPTIONS

Model Code Example: RVETLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL L Standard Screw Adjustment A 500 - 3000 psi (35 - 210 bar), 1000 psi N Buna-N (70 bar) Standard Setting V Viton C Tamper Resistant - Factory Set

B 500 - 1500 psi (35 - 105 bar), 1000 psi (70 bar) Standard Setting

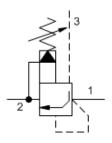
C 1000 - 6000 psi (70 - 420 bar), 1000 psi (70 bar) Standard Setting

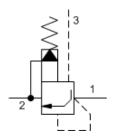
W 1000 - 4500 psi (70 - 315 bar), 1000 psi (70 bar) Standard Setting

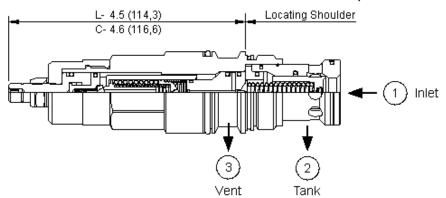
© 2023 Sun Hydraulics 57 of 85



sunhydraulics.com/model/RVGT







Ventable, pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. These 3 port valves include a vent port (port 3) that connects between the main piston and the pilot stage to provide for remote control by other pilot or 2-way valves. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Pressure Ramp Up Time	300 - 500 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	4.5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
U.S. Patent #	6,039,070
Seal kit - Cartridge	Buna: 990217007
Seal kit - Cartridge	Polyurethane: 990217002
Seal kit - Cartridge	Viton: 990217006

NOTES

CONTROL

Patents are pending for this product.

CONFIGURATION OPTIONS

Model Code Example: RVGTLAN

L Standard Screw Adjustment

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

B 500 - 1500 psi (35 - 105 bar), 1000 psi (70 bar) Standard Setting

C 1000 - 6000 psi (70 - 420 bar), 1000 psi (70 bar) Standard Setting

W 1000 - 4500 psi (70 - 315 bar), 1000 psi (70 bar) Standard Setting

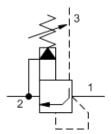
N Buna-N V Viton

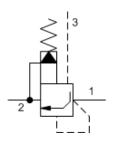
/AP Stainless Steel, Passivated

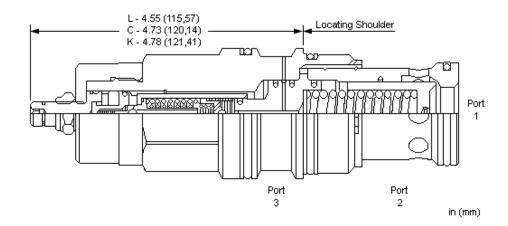
© 2023 Sun Hydraulics 58 of 85



sunhydraulics.com/model/RVIT







Ventable, pilot-operated, anti shock relief cartridges limit maximum system pressure and also limit the rate of pressure rise. The valve opens and then ramps closed at a constant speed, independent of settings and flows. These 3 port valves include a vent port (port 3) that connects between the main piston and the pilot stage to provide for remote control by other pilot or 2-way valves. The adjust screw determines the maximum (relief) setting and the minimum (threshold) setting.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Pressure Ramp Up Time	400 - 850 ms
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990219007
Seal kit - Cartridge	Viton: 990219006

CONFIGURATION OPTIONS

Model Code Example: RVITLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

C 1000 - 6000 psi (70 - 420 bar), 1000 psi (70 bar) Standard Setting

W 1000 - 4500 psi (70 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

Standard Material/Coating

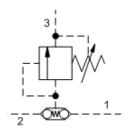
/AP Stainless Steel, Passivated

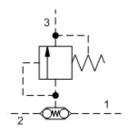
© 2023 Sun Hydraulics 59 of 85

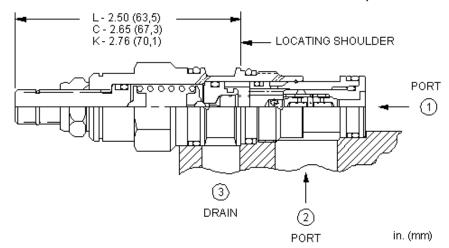
Dual, direct-acting relief valve - pilot capacity SERIES 1 / CAPACITY: .25 gpm / CAVITY: T-11A



sunhydraulics.com/model/RBAD







This direct-acting, pilot relief cartridge incorporates back-to-back check valves. This allows it to remotely control 2 other pilot-operated valves or act as a thermal relief for both ends of an actuator. Because capacity is limited to pilot flow, this valve should be used with other valves with comparable pilot flows.

TECHNICAL DATA

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

Maximum Valve Leakage at 110 SUS (24 cSt)	5 drops/min.
Response Time - Typical	2 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

For Series 1 cartridges configured with an O control (panel mount handknob), a .75 in. (19 mm) diameter hole is required in the panel.

CONFIGURATION OPTIONS

Model Code Example: RBADLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

O Handknob with Panel Mount

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

A 25 - 3000 psi (1,7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 25 1500 psi (1,7 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 25 6000 psi (1,7 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 25 4500 psi (1,7 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

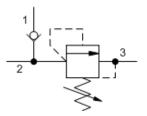
© 2023 Sun Hydraulics 60 of 85

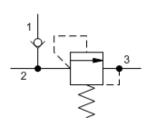
Direct-acting relief valve - before check

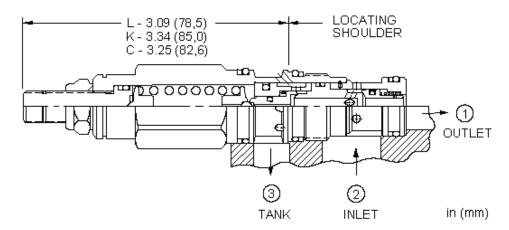
SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/HRDA







The relief-before-check cartridge is a CavitySaver™ (multi-function) valve incorporating a direct-acting relief tee'd in before a check function. When the pressure at the inlet (port 2) reaches the relief valve setting, the valve starts to open to tank (port 3), throttling flow to limit the pressure rise. The check valve flow is from the inlet (port 2) to the system port (port1). These valves are smooth and quiet, essentially zero leak, dirt tolerant, immune to silting and are very fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: HRDALAN

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

C Tamper Resistant - Factory Set K Handknob

500 - 3000 psi (35 - 210 bar), 1000 psi (70 bar) Standard Setting

D 200 - 700 psi (14 - 50 bar), 400 psi (28 bar) Standard Setting

W 800 - 4500 psi (55 - 315 bar), 1000 psi (70 bar) Standard Setting

V Viton

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 61 of 85



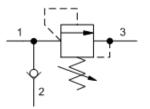
MODEL HRDB

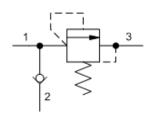
Direct-acting relief valve - after check

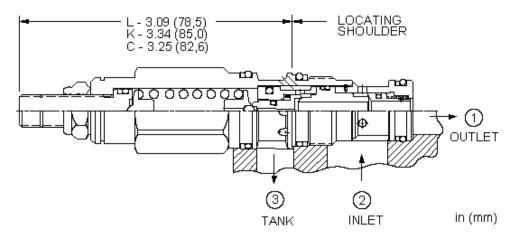
SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-11A



sunhydraulics.com/model/HRDB







The relief-after-check cartridge is a CavitySaver™ (multi-function) valve incorporating a direct-acting relief tee'd in after a check function. The check valve flow is from the inlet (port 2) to the system port (port1). When the pressure in the system (port 1) reaches the relief valve setting, the valve starts to open to tank (port 3), 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

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	6
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: HRDBLAN

CONTROL

(L) ADJUSTMENT RANGE

(A) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment C Tamper Resistant - Factory Set

K Handknob

500 - 3000 psi (35 - 210 bar), 100<u>0</u> psi (70 bar) Standard Setting

N Buna-N V Viton

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

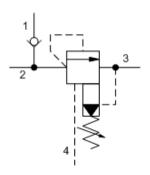
W 800 - 4500 psi (55 - 315 bar), 1000 psi

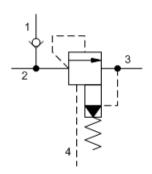
(70 bar) Standard Setting

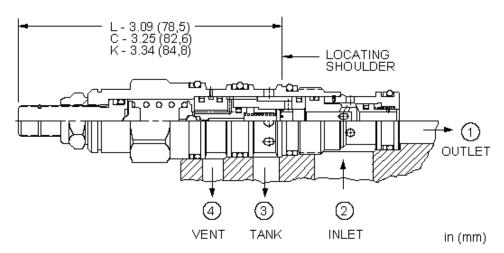
© 2023 Sun Hydraulics 62 of 85 SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A



sunhydraulics.com/model/HVCA







The ventable relief-before-check cartridge is a CavitySaver™ (multi-function) valve incorporating a ventable, pilotoperated, balanced piston relief tee'd in before a check function. When the pressure at the inlet (port 2) reaches the relief valve setting, the valve starts to open to tank (port 3), throttling flow to regulate the pressure. The check valve flow is from the inlet (port 2) to the system port (port1). The valve includes a vent port (port 4) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves.

These valves are accurate, have low pressure rise vs. flow, are smooth, quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Check Cracking Pressure	25 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

(N)

CONFIGURATION OPTIONS

Model Code Example: HVCALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

K Handknob

A 75 - 3000 psi (5 - 210 bar), 1000 psi (70 bar) Standard Setting

B 75 - 1500 psi (5 - 105 bar), 1000 psi (70 bar) Standard Setting

D 75 - 800 psi (5 - 55 bar), 400 psi (28 bar) Standard Setting

W 75 - 4500 psi (5 - 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

© 2023 Sun Hydraulics 63 of 85



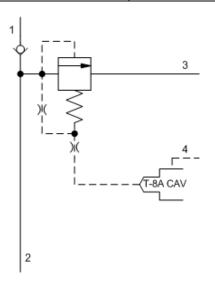


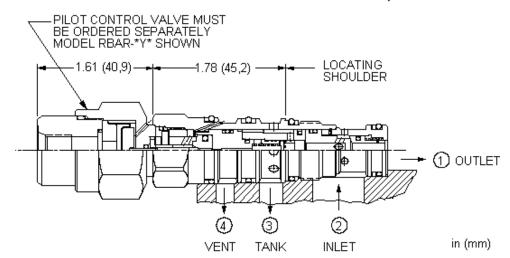
Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity - before check

SERIES 1 / CAPACITY: 10 gpm / CAVITY: T-21A



sunhydraulics.com/model/HVCA8





The relief-before-check cartridge is a CavitySaver™ (multi-function) valve incorporating a normally closed, balanced piston modulating element tee'd in before a check function. The valve incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 2) reaches the pilot control valve setting, the modulating element starts to open to tank (port 3), throttling flow to regulate the pressure. The T-8A pilot section is drained to port 4. The check valve flow is from the inlet (port 2) to the system port (port1).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Check Cracking Pressure	25 psi
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

(D) SEAL MATERIAL

BIAS PRESSURE

Model Code Example: HVCA8DN

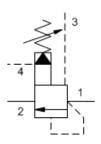
D 75 psi (5 bar)

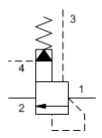
Buna-N **E** EPDM

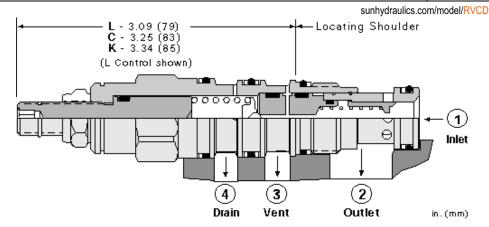
V Viton

© 2023 Sun Hydraulics 64 of 85









Ventable, pilot-operated, balanced piston relief cartridges with external drain are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves and a drain (port 4) that makes them insensitive to back pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	7 - 10 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: RVCDLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- K Handknob

CONTROL

Y Tri-Grip Handknob

(L) ADJUSTMENT RANGE

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL N Buna-N

E EPDM

V Viton

(N) MATERIAL/COATING

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 65 of 85

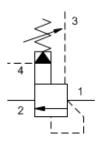


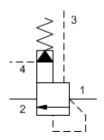


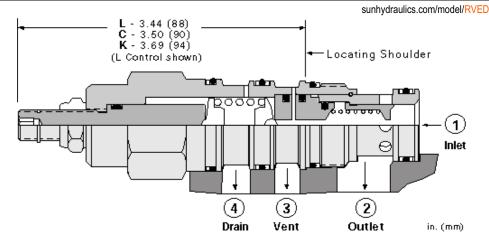
Ventable, pilot-operated, balanced piston relief valve with drain to port 4

SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-22A









Ventable, pilot-operated, balanced piston relief cartridges with external drain are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves and a drain (port 4) that makes them insensitive to back pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 15 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: RVEDLAN

L Standard Screw Adjustment

- C Tamper Resistant Factory Set
- ${\bf K}$ Handknob

CONTROL

- W Hex Wrench Adjustment
- Y Tri-Grip Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi

(L) ADJUSTMENT RANGE

- (70 bar) Standard Setting **B** 50 1500 psi (3,5 105 bar), 1000 psi
- (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

(A) SEAL MATERIAL

N Buna-N

- E EPDM
- **V** Viton

© 2023 Sun Hydraulics 66 of 85

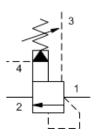


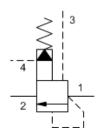
MODEL RVGD

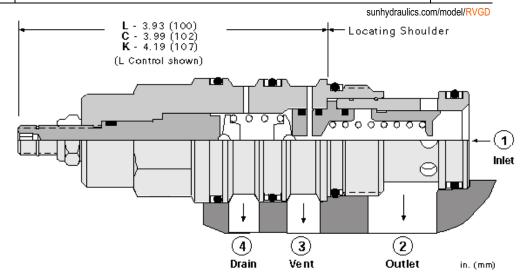
Ventable, pilot-operated, balanced piston relief valve with drain to port 4

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-23A









Ventable, pilot-operated, balanced piston relief cartridges with external drain are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves and a drain (port 4) that makes them insensitive to back pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: RVGDLAN

L Standard Screw Adjustment

CONTROL

C Tamper Resistant - Factory Set

K Handknob

A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting

(L) ADJUSTMENT RANGE

- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- C 150 6000 psi (10,5 420 bar), 1000 psi (70 bar) Standard Setting
- **D** 25 800 psi (1,7 55 bar), 400 psi (28
- E bar) Standard Setting 25 400 psi (1,7 - 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N V Viton

(A) SEAL MATERIAL

(N) MATERIAL/COATING

/AP Stainless Steel, Passivated

© 2023 Sun Hydraulics 67 of 85

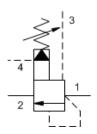


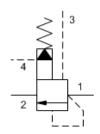


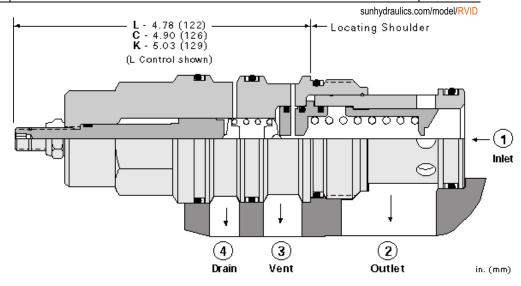
Ventable, pilot-operated, balanced piston relief valve with drain to port 4

SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-24A









Ventable, pilot-operated, balanced piston relief cartridges with external drain are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. They provide a vent port (port 3) that connects between the main piston and pilot stage to provide for remote control by other pilot or 2-way valves and a drain (port 4) that makes them insensitive to back pressure. These valves are accurate, have low pressure rise vs. flow, they are smooth and quiet, and are moderately fast.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	EPDM: 990024014
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: RVIDLAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) MATERIAL/COATING

I Standard Screw Adjustment

- C Tamper Resistant Factory Set
- **K** Handknob

- **A** 100 3000 psi (7 210 bar), 1000 psi (70 bar) Standard Setting
- **B** 50 1500 psi (3,5 105 bar), 1000 psi (70 bar) Standard Setting
- **C** 150 6000 psi (10,5 420 bar), 1000
- psi (70 bar) Standard Setting D 25 - 800 psi (1,7 - 55 bar), 400 psi (28 bar) Standard Setting
- **E** 25 400 psi (1,7 28 bar), 200 psi (14 bar) Standard Setting
- **W** 150 4500 psi (10,5 315 bar), 1000 psi (70 bar) Standard Setting

N Buna-N Standard Material/Coati
E EPDM /AP Stainless Steel, Passiva

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 68 of 85

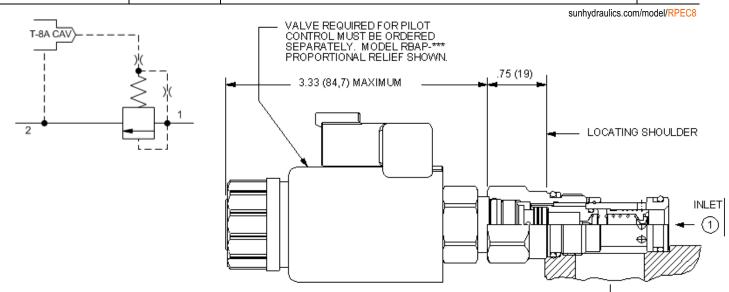




Pilot-operated, balanced piston relief main stage with integral T-8A control cavity

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

② OUTLET

in. (mm)

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990010007
Seal kit - Cartridge	EPDM: 990010014
Seal kit - Cartridge	Polyurethane: 990010002
Seal kit - Cartridge	Viton: 990010006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPEC8WN

 ADJUSTMENT RANGE
 (W)
 SEAL MATERIAL
 (

 W 100 - 5000 psi (7 - 350 bar)
 N Buna-N

D 25 - 3000 psi (1,7 - 210 bar)

E EPDMV Viton

© 2023 Sun Hydraulics 69 of 85

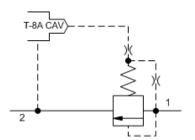


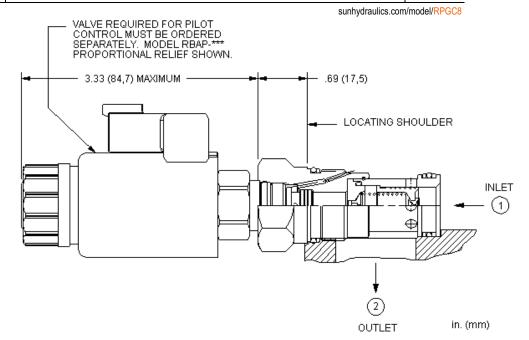


Pilot-operated, balanced piston relief main stage with integral T-8A control cavity

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A







This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Polyurethane: 990003002
Seal kit - Cartridge	Viton: 990203006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPGC8WN

ADJUSTMENT RANGE **W** 100 - 5000 psi (7 - 350 bar) (W) SEAL MATERIAL

N Buna-N **E** EPDM

D 25 - 3000 psi (1,7 - 210 bar)

V Viton

© 2023 Sun Hydraulics 70 of 85



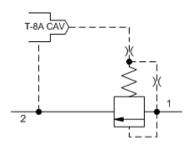
MODEL RPIC8

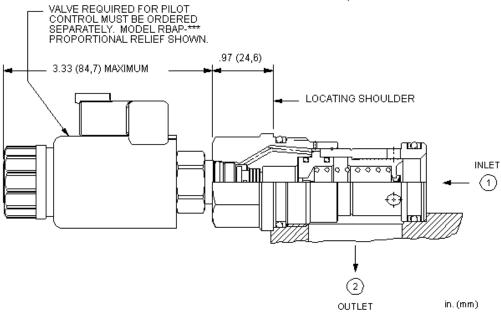
Pilot-operated, balanced piston relief main stage with integral T-8A control cavity

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A



sunhydraulics.com/model/RPIC8





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	EPDM: 990016014
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPIC8WN

ADJUSTMENT RANGE (W) SEAL MATERIAL **W** 100 - 5000 psi (7 - 350 bar) **D** 25 - 3000 psi (1,7 - 210 bar) **E** EPDM V Viton

© 2023 Sun Hydraulics 71 of 85



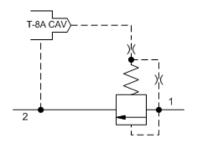


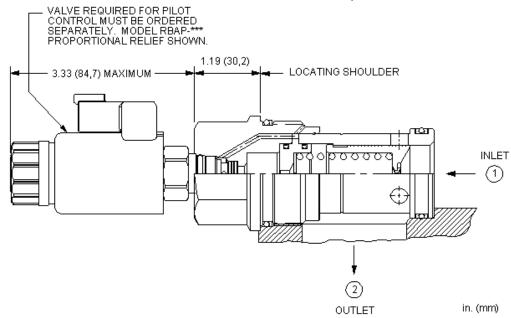
Pilot-operated, balanced piston relief main stage with integral T-8A control cavity

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A



sunhydraulics.com/model/RPKC8





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990018007
Seal kit - Cartridge	EPDM: 990018014
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990018006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

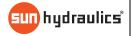
CONFIGURATION OPTIONS

Model Code Example: RPKC8WN

ADJUSTMENT RANGE (W) SEAL MATERIAL (N)
W 100 - 5000 psi (7 - 350 bar)
D 25 - 3000 psi (1,7 - 210 bar)
E EPDM

V Viton

© 2023 Sun Hydraulics 72 of 85

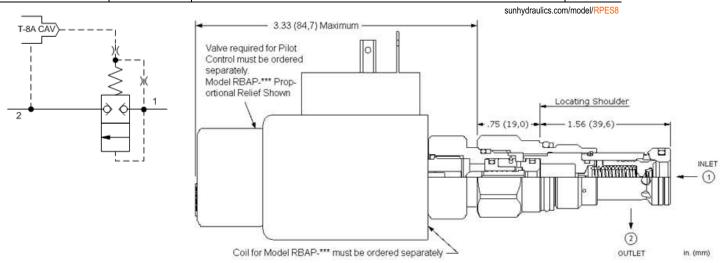


MODEL RPES8

Pilot-operated, balanced poppet relief main stage with integral T-8A control cavity

SERIES 1 / CAPACITY: 25 gpm / CAVITY: T-10A





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	10 - 25 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	7 ms
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	EPDM: 990310014
Seal kit - Cartridge	Viton: 990310006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPES8WN

ADJUSTMENT RANGE

(W) SEAL MATERIAL

(N) MATERIAL/COATING

W 1000 - 5000 psi (70 - 350 bar)
D 50 - 1500 psi (3,5 - 105 bar)

N Buna-N
E EPDM
V Viton

Standard Material/Coating
/LH Mild Steel, Zinc-Nickel

© 2023 Sun Hydraulics 73 of 85



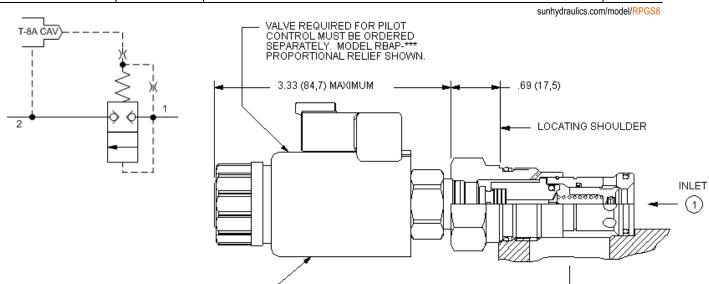


Pilot-operated, balanced poppet relief main stage with integral T-8A control cavity

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-3A



in. (mm)



COIL FOR MODEL RBAP-***
MUST BE ORDERED SEPARATELY

This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990303007
Seal kit - Cartridge	EPDM: 990303014
Seal kit - Cartridge	Polyurethane: 990303002
Seal kit - Cartridge	Viton: 990303006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

Model Code Example: RPGS8N

CONFIGURATION OPTIONS

SEAL MATERIAL

B 50 - 1500 psi (3,5 - 105 bar)

ADJUSTMENT RANGE

E EPDM

W 100 - 5000 psi (7 - 350 bar)

N Buna-N

V Viton

© 2023 Sun Hydraulics 74 of 85



MODEL

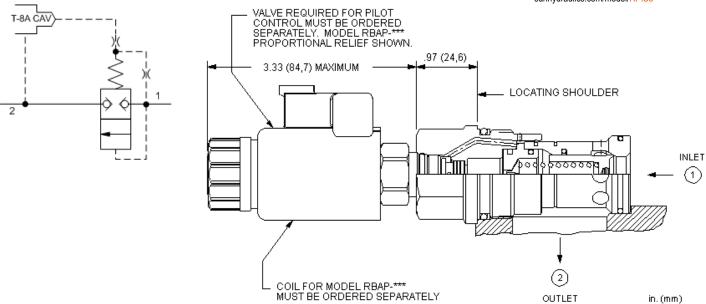
Pilot-operated, balanced poppet relief main stage with integral T-8A control cavity

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-16A



in. (mm)





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and port 2.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990316007
Seal kit - Cartridge	EPDM: 990316014
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990316006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPIS8N

ADJUSTMENT RANGE

SEAL MATERIAL

B 50 - 1500 psi (3,5 - 105 bar)

E EPDM

W 100 - 5000 psi (7 - 350 bar)

N Buna-N

V Viton

© 2023 Sun Hydraulics 75 of 85



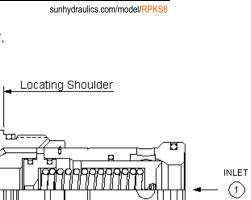


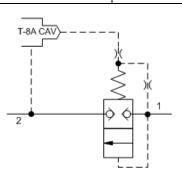
Pilot-operated, balanced poppet relief main stage with integral T-8A control cavity

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-18A

Valve required for pilot control







must be ordered separately. Model RBAP-***, Proportional Relief shown 3.33 (84,7) MAXIMUM 1.18 (30,0) ◌█ Coil for model RBAP-*** (2) Must be ordered separately OUTLET in. (mm)

This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is a balanced poppet design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge's setting, the poppet element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between port 1 and

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Factory Pressure Settings Established at	4 gpm
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at reseat	10 drops/min.
Response Time - Typical	2 ms
Seal kit - Cartridge	Buna: 990318007
Seal kit - Cartridge	Polyurethane: 990018002
Seal kit - Cartridge	Viton: 990318006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RPKS8N

ADJUSTMENT RANGE	SEAL MATERIAL	
B 50 - 1500 psi (3,5 - 105 bar)	N Buna-N	
W 100 - 5000 psi (7 - 350 bar)	V Viton	

© 2023 Sun Hydraulics 76 of 85

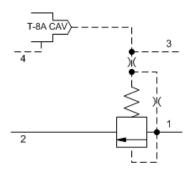


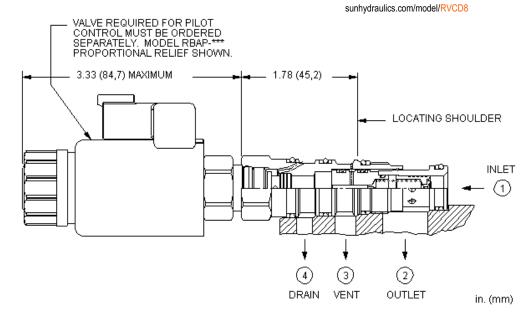
MODEL RVCD8

Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity and drain to port 4

SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-21A







This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is ventable, externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 4). The vent port (port 3) that tees in between the main piston and pilot control cartridge, allows the modulating element to also be controlled by remote pilot or 2-way valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	7 - 10 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RVCD8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL (N)
W 100 psi (7 bar) N Buna-N

D 25 psi (1,7 bar)

₹ FRDM

© 2023 Sun Hydraulics 77 of 85

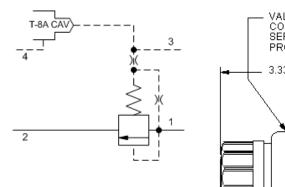


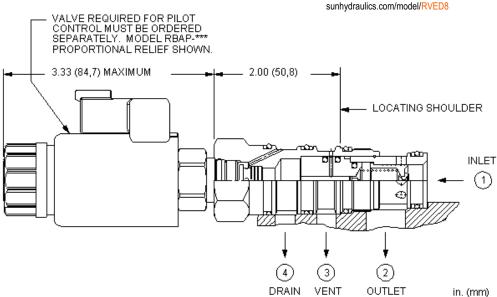


Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity and drain to port 4

SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-22A







This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is ventable, externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 4). The vent port (port 3) that tees in between the main piston and pilot control cartridge, allows the modulating element to also be controlled by remote pilot or 2-way valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Control Pilot Flow	10 - 15 in³/min.
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at 110 SUS (24 cSt)	3 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	EPDM: 990022014
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RVED8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL

(N)

W 100 psi (7 bar)

N Buna-N

D 25 psi (1,7 bar)

E EPDMV Viton

© 2023 Sun Hydraulics 78 of 85

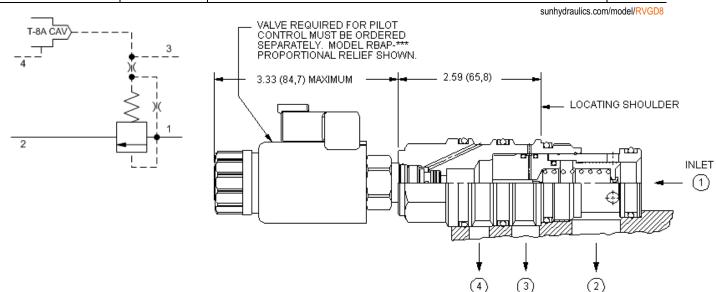




Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity and drain to port 4

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-23A





This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is ventable, externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 4). The vent port (port 3) that tees in between the main piston and pilot control cartridge, allows the modulating element to also be controlled by remote pilot or 2-way valves.

DRAIN

TECHNICAL DATA

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

VENT

OUTLET

in. (mm)

Maximum Operating Pressure	5000 psi
Control Pilot Flow	15 - 20 in³/min.
Pilot Control Cavity	T-8A
Main stage leakage at 110 SUS (24 cSt)	4 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	EPDM: 990023014
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RVGD8WN

MINIMUM CONTROL PRESSURE (W) SEAL MATERIAL (N
W 100 psi (7 bar) N Buna-N

D 25 psi (1,7 bar)

E EPDM V Viton

© 2023 Sun Hydraulics 79 of 85

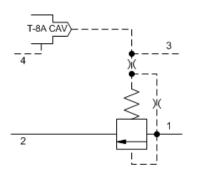


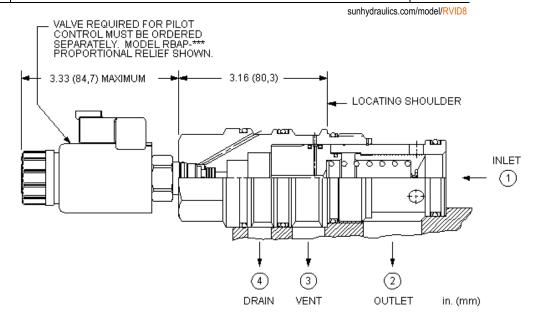


Ventable, pilot-operated, balanced piston relief main stage with integral T-8A control cavity and drain to port 4

SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-24A







This valve is a normally closed modulating element that incorporates an integral pilot control cavity. It is ventable, externally drained, and is a balanced piston design. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 1) reaches the pilot control cartridge setting, the modulating element starts to open to tank (port 2), throttling flow to regulate the pressure. The pilot cartridge's setting determines the difference in pressure between the inlet (port 1) and the drain (port 4). The vent port (port 3) that tees in between the main piston and pilot control cartridge, allows the modulating element to also be controlled by remote pilot or 2-way valves.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Pilot Control Valve Hex Size	7/8 in.
Main stage leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Response Time - Typical	10 ms
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

NOTES

Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

CONFIGURATION OPTIONS

Model Code Example: RVID8WN

 MINIMUM CONTROL PRESSURE
 (W)
 SEAL MATERIAL
 (N)

 W 100 psi (7 bar)
 N Buna-N

 D 25 psi (1,7 bar)
 V Viton

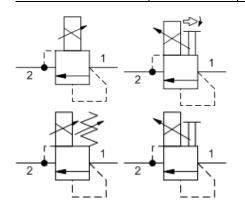
© 2023 Sun Hydraulics 80 of 85

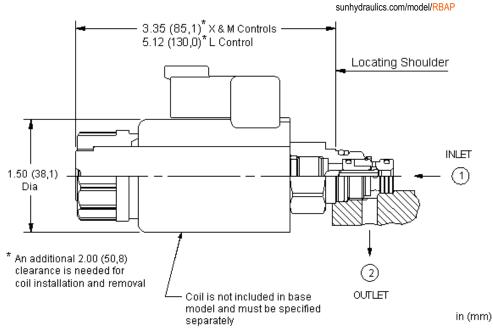




Electro-proportional relief valve - pilot capacity SERIES P / CAPACITY: .25 gpm / CAVITY: T-8A







This 2-port, pilot-stage, direct-acting relief cartridge is an electro-proportionally controlled, pressure regulating valve. The proportional control allows for infinite, step-less adjustability within the selected pressure range. When the pressure at port 1 (inlet) is sufficient to overcome the solenoid forces, as determined by the analog input signal, the poppet lifts and allows flow from port 1 to port 2 (outlet). This pilot control cartridge utilizes the T-8A cavity so it can be used in conjunction with Sun's main stage, pressure control elements.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	1.5 in ³ /min.
Manual Override Force Requirement	10 lbs/1000 psi @ Port 1
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990208007
Seal kit - Cartridge	EPDM: 990008014
Seal kit - Cartridge	Viton: 990208006

NOTES

Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.

CONFIGURATION OPTIONS

Model Code Example: RBAPXAN

С	ONTROL	(X)	ADJUSTMENT RANGE	(A)	SEAL MATERIAL	(N)	COIL *	
Į	X No Manual Override		A 300 - 3000 psi (20 - 210 bar)		N Buna-N			No coil
Ī	E Twist (Extended) Manual Override		B 150 - 1500 psi (10,5 - 105 bar)		E EPDM		212	DIN 43650-Form A, 12 VDC
- 1	L Manual Override - Adjustable		D 50 - 750 psi (3,5 - 50 bar)		V Viton		224	DIN 43650-Form A, 24 VDC
	T Tuning Adjustment		W 500 - 5000 psi (35 - 350 bar)				224N)	(01 DIN 43650-Form A, 24 VDC, no

224NX02 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

912 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

912NX02 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

driver

transient voltage suppression (TVS) diodes, with XMD-01

912NX02 Deutsch DT04-2P, 12 VDC, not transient voltage suppression (TVS) diodes, with XMD-02 driver

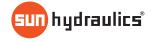
© 2023 Sun Hydraulics 81 of 85

924 Deutsch DT04-2P, 24 VDC
924NX01 Deutsch DT04-2P, 24 VDC, no
transient voltage suppression
(TVS) diodes, with XMD-01
driver

924NX02 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

* Additional coil options are available

© 2023 Sun Hydraulics 82 of 85



MODEL

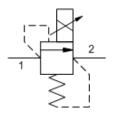
Electro-proportional relief valve - pilot capacity, high pressure setting with no command

SERIES P / CAPACITY: .25 gpm / CAVITY: T-8A

An additional 2.00 (50,8) clearance is needed for



sunhydraulics.com/model/RBAN



coil installation and removal Locating Shoulder 4.26 (108.2) INLET 1.50 (38,1) (1) Dia 2 Coil is not included in base OUTLET model and must be specified in (mm)

This 2-port, pilot-stage, direct-acting relief cartridge is an electro-proportionally controlled, normally-closed pressure regulating valve. The valve is spring biased closed to its highest setting (customer specified). Increasing current to the coil will proportionally decrease the pressure setting. When the pressure at port 1 (inlet) is sufficient to overcome the spring force minus the solenoid force, as determined by the analog input signal, the poppet lifts and allows flow from port 1 to port 2 (outlet). This pilot control cartridge utilizes the T-8A cavity so it can be used in conjunction with Sun's main stage, pressure control elements.

TECHNICAL DATA

separately

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

Maximum Operating Pressure	5000 psi		
Maximum Valve Leakage at Reseat	1.5 in³/min.		
Reseat	>85% of setting		
Seal kit - Cartridge	Buna: 990208007		
Seal kit - Cartridge	Viton: 990208006		

CONFIGURATION OPTIONS

Model Code Example: RBANXAN

(X) ADJUSTMENT RANGE (A) SEAL MATERIAL (N) COIL * CONTROL

A 3000 - 1500 psi (105 - 210 bar **B** 1500 - 800 psi (55 - 105 bar)

D 800 - 300 psi (20 - 55 bar)

W 5000 - 3000 psi (210 - 350 bar)

V Viton

212 DIN 43650-Form A, 12 VDC 224 DIN 43650-Form A, 24 VDC 224NX01 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01

driver

224NX02 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

Deutsch DT04-2P, 12 VDC 912NX01 Deutsch DT04-2P, 12 VDC, no

transient voltage suppression (TVS) diodes, with XMD-01 driver

912NX02 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

924 Deutsch DT04-2P, 24 VDC 924NX01 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver

924NX02 Deutsch DT04-2P, 24 VDC, no

transient voltage suppression 83 of 85 © 2023 Sun Hydraulics

(TVS) diodes, with XMD-02 driver

* Additional coil options are available

© 2023 Sun Hydraulics 84 of 85



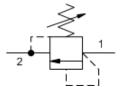
MODEL RDUA

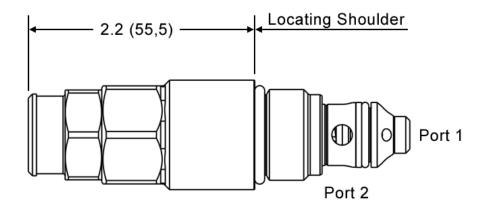
Direct-acting relief valve, 6000 psi (420 bar) - common cavity

SERIES 1C / CAPACITY: 10 gpm / CAVITY: SC-10-02



sunhydraulics.com/model/RDUA





in (mm)

This direct-acting relief cartridge is a normally closed, pressure-limiting device used to protect hydraulic systems from over pressurization. When the pressure at the inlet (Port 1) reaches the valve setting, the valve opens to tank (Port 2) to prevent over pressurization. This valve is dirt-tolerant and is designed to be very fast-acting with a low rate of pressure rise, but at the expense of smoothness.

TECHNICAL DATA

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

Maximum Operating Pressure	6000 psi
Factory Pressure Settings Established at	1 gpm
Typical valve leakage at 110 SUS (24cSt) at 90% of valve setting	.6 in³/min.
Cap Hex Size	22 mm
Cap Torque	31 - 35 lbf ft
Response Time - Typical	2 ms

CONFIGURATION OPTIONS

Model Code Example: RDUALAN

CONTROL (L) ADJUSTMENT RANGE (A) SEAL MATERIAL

L Tamper Resistant - Factory Set

A 1750 - 3625 psi (120-250 bar), 2200 psi

N Buna-N

A 1750 - 3625 psi (120-250 bar), 2200 psi (152 bar) Standard Setting

psi (50

- **B** 580 2030 psi (40-140 bar), 725 psi (50 bar) Standard Setting
- **C** 3200 5950 psi (220-410 bar), 3600 psi (250 bar) Standard Setting

© 2023 Sun Hydraulics 85 of 85

driving fluid power innovation since 1970



www.sunhydraulics.com



Sun Hydraulics Headquarters Sarasota, Florida USA +1 941 362 1200

Custom Fluidpower Pty Ltd (A Sun Hydraulics Company) Newcastle, Australia +61 02 4953 5777 sales@custom.com.au Sun Hydraulics Limited Coventry, England +44 2476 217 400 sales@sunuk.com

Sun Hydraulics Korea Corp. Incheon, Korea +82 3281 31350 sales@sunhydraulics.co.kr Sun Hydraulik GmbH Erkelenz, Germany +49 2431 80910 sales@sunhydraulik.de

Sun Hydraulics China Co. Ltd. Shanghai, P.R. China +86 2162 375885 sunchinainfo@sunhydraulics.com Sun Hydraulics Corp. (India) Bangalore, India +91 8028 456325 sunindiainfo@sunhydraulics.com

Sun Hydraulics Corp. (S.America) Rosario, Argentina +54 9 341 584 3075 ventas@sunhydraulics.com