

Flow Control, Modulating Spool Cartridges

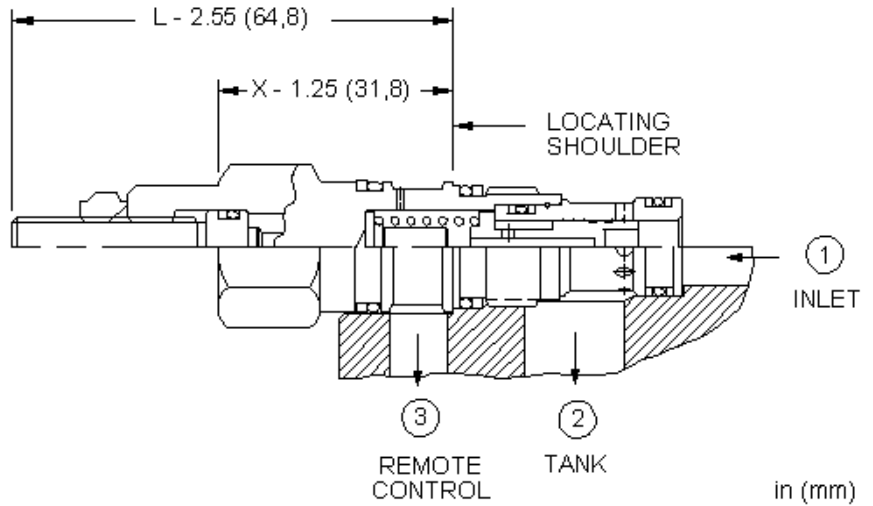
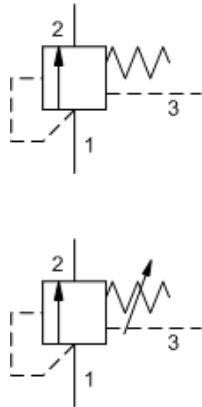
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LRBC	Normally closed, modulating element	1
LRDC	Normally closed, modulating element	2
LRFC	Normally closed, modulating element	3
LRHC	Normally closed, modulating element	4
LRJC	Normally closed, modulating element	5
LRBA	Normally closed, modulating element with pilot source from port 1	6
LRDA	Normally closed, modulating element with pilot source from port 1	7
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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 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 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 31,8 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-63A
Series 4 Cartridges M48 Cartridge Thread 41,3 mm Valve Hex Size 474 - 508 Nm Valve Installation Torque	2-Port 2-Port (Undercut) 3-Port 3-Port (Undercut) 4-Port 4-Port (Undercut) 4-Port 4-Port (Dual path) 6-Port 6-Port	T-18A T-18AU T-19A T-19AU T-24A T-24AU T-34A T-54AD T-54A T-64A



Normally closed modulating elements without an internal orifice act as a bypass compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

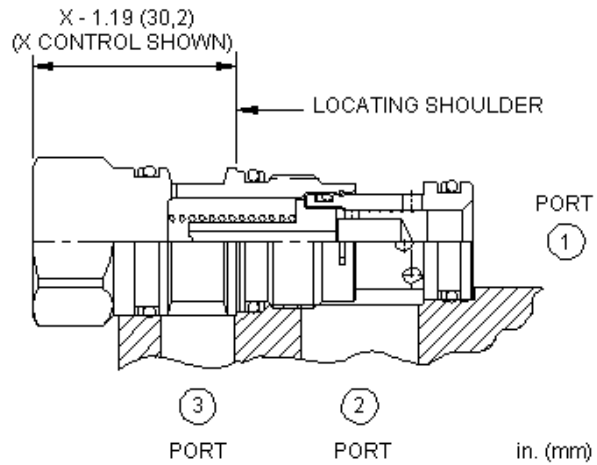
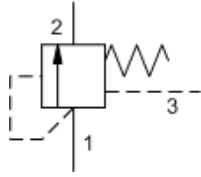
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: LRBCXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	Standard Material/Coating
L Tuning Adjustment	D 50 psi (3,5 bar)	V Viton	/AP Stainless Steel, Passivated
	F 100 psi (7 bar)		



Normally closed modulating elements without an internal orifice act as a bypass compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

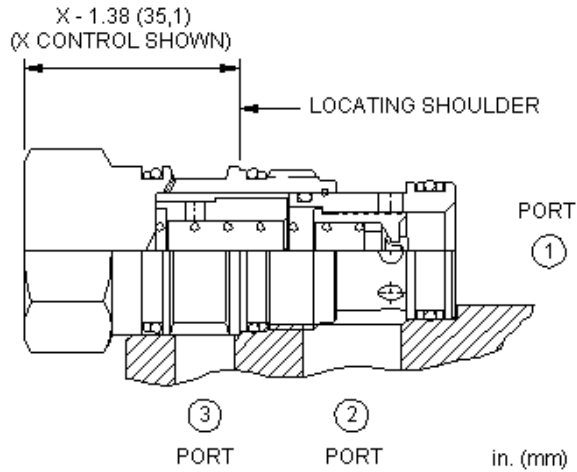
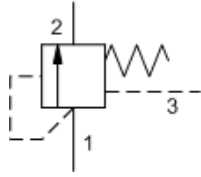
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
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: LRDCXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar) D 50 psi (3,5 bar) F 100 psi (7 bar) G 150 psi (10,5 bar)	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



Normally closed modulating elements without an internal orifice act as a bypass compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

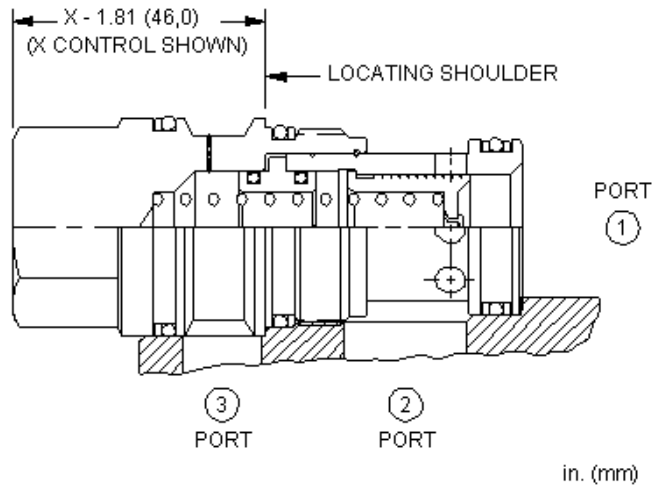
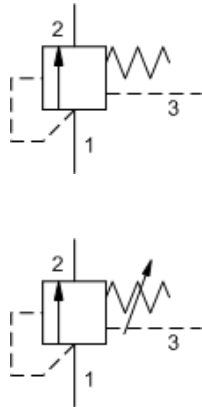
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: LRFCXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar) D 50 psi (3,5 bar) F 100 psi (7 bar) G 150 psi (10,5 bar)	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



Normally closed modulating elements without an internal orifice act as a bypass compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

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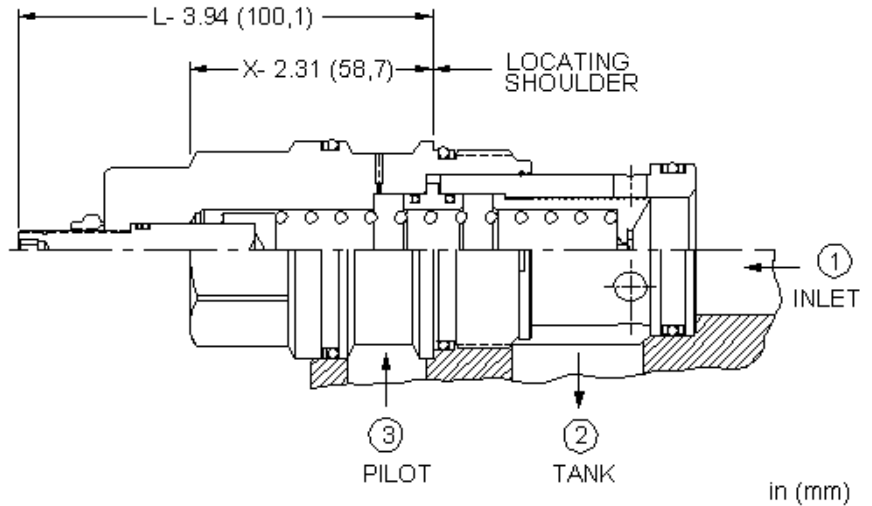
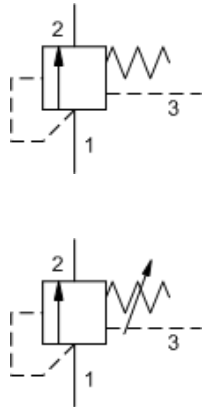
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: LRHCXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	Standard Material/Coating
L Tuning Adjustment	D 50 psi (3,5 bar)	V Viton	/AP Stainless Steel, Passivated
	F 100 psi (7 bar)		
	G 150 psi (10,5 bar)		



Normally closed modulating elements without an internal orifice act as a bypass compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

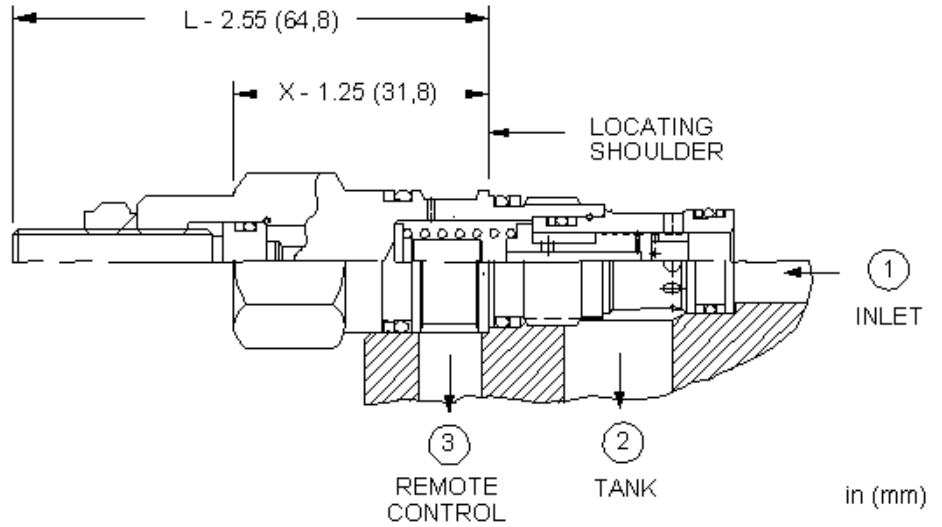
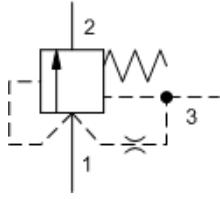
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
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: LRJ CXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	Standard Material/Coating
L Tuning Adjustment	D 50 psi (3,5 bar)	E EPDM	IAP Stainless Steel, Passivated
	F 100 psi (7 bar)	V Viton	
	G 150 psi (10,5 bar)		



Normally closed modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage relief valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

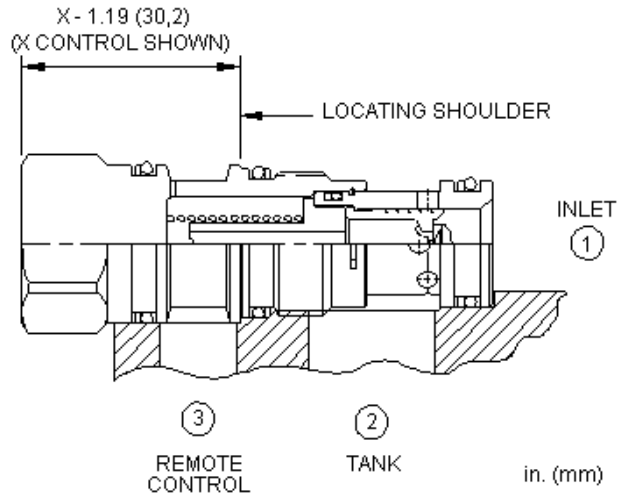
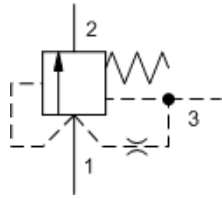
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,16 - 0,25 L/min.
Control Orifice Diameter	0,4 mm
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: LRBALDN

CONTROL	(L) DIFFERENTIAL PRESSURE	(D) SEAL MATERIAL	(N)
L Tuning Adjustment	D 50 psi (3,5 bar) F 100 psi (7 bar) H 200 psi (14 bar)	N Buna-N V Viton	



Normally closed modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage relief valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

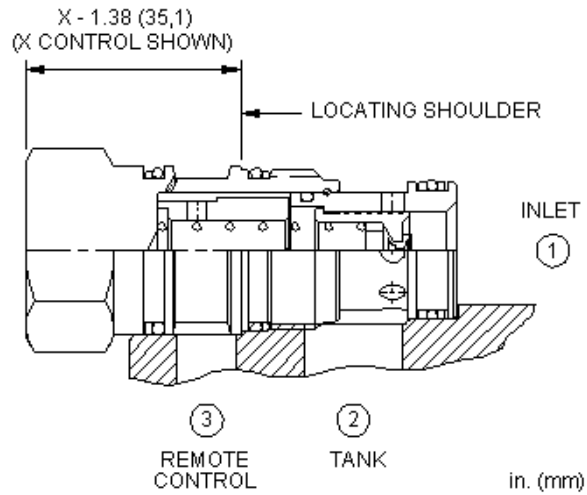
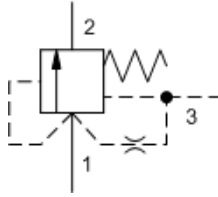
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,16 - 0,25 L/min.
Maximum Valve Leakage at 110 SUS (24 cSt)	15 cc/min.@70 bar
Control Orifice Diameter	0,4 mm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: LRDAXHN

CONTROL	(X) BIAS PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar) D 50 psi (3,5 bar) F 100 psi (7 bar)	N Buna-N V Viton	Standard Material/Coating /AP Stainless Steel, Passivated



Normally closed modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage relief valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

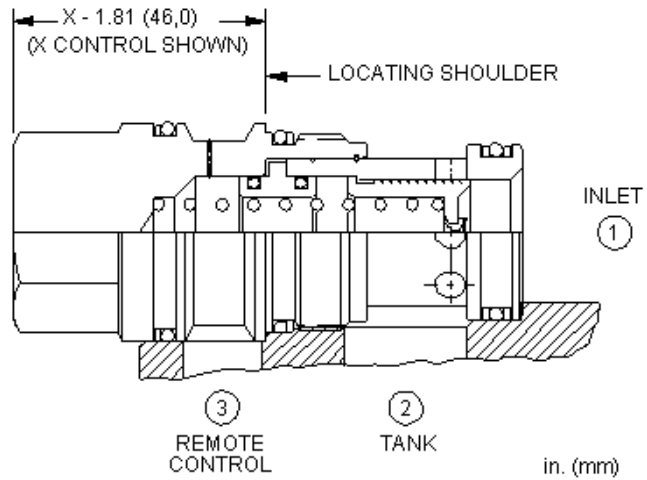
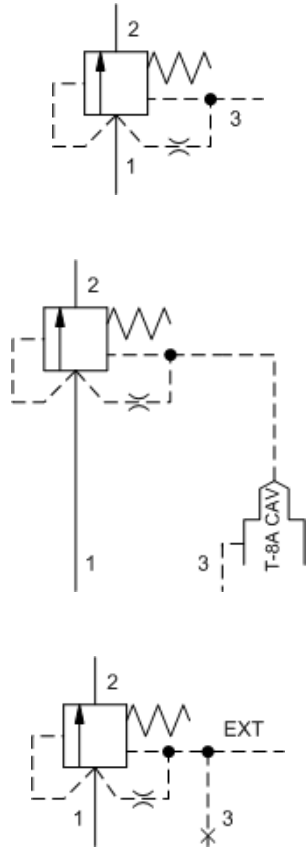
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,16 - 0,25 L/min.
Control Orifice Diameter	0,4 mm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: LRFAXHN

CONTROL	(X) BIAS PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar) D 50 psi (3,5 bar) F 100 psi (7 bar) G 150 psi (10,5 bar)	N Buna-N V Viton	Standard Material/Coating /AP Stainless Steel, Passivated



Normally closed modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage relief valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

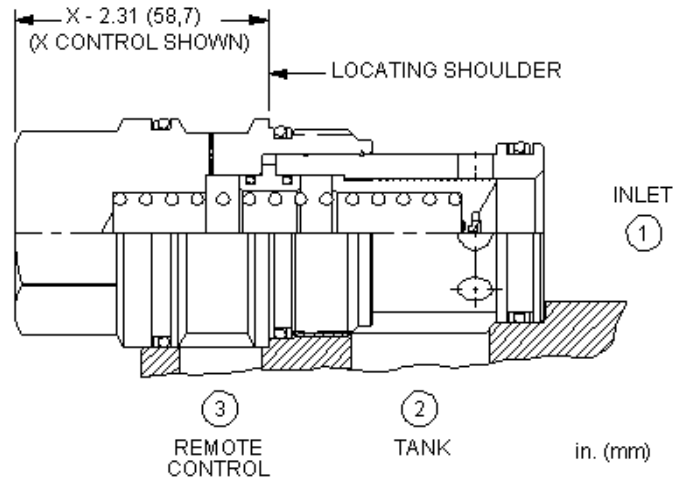
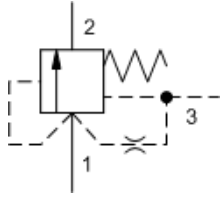
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,25 - 0,50 L/min.
Control Orifice Diameter	0,53 mm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: LRHAXHN

CONTROL	(X) BIAS PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	Standard Material/Coating
E External 4-SAE Port, Port 3 blocked	D 50 psi (3,5 bar)	V Viton	/AP Stainless Steel, Passivated
L Tuning Adjustment	F 100 psi (7 bar)		
	G 150 psi (10,5 bar)		



Normally closed modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage relief valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

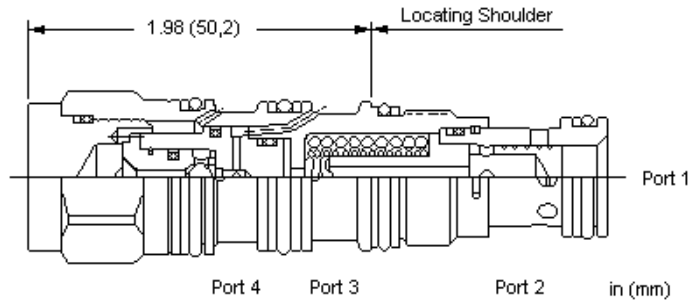
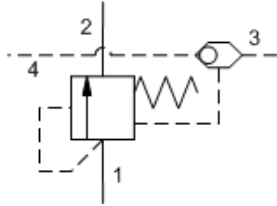
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,25 - 0,50 L/min.
Control Orifice Diameter	0,53 mm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: LRJAXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar) A 12 psi B 20 psi (1,5 bar) C 30 psi (2 bar) D 50 psi (3,5 bar)	N Buna-N V Viton	Standard Material/Coating /AP Stainless Steel, Passivated



A normally closed modulating element, used as a bypass compensator, ensures a constant pressure drop across an external orifice to create a pressure compensated flow control. The resulting flow remains constant regardless of variations in upstream or downstream pressure.

A ball shuttle connects the after orifice signal from the higher of port 3 or 4 to the pilot area.

TECHNICAL DATA

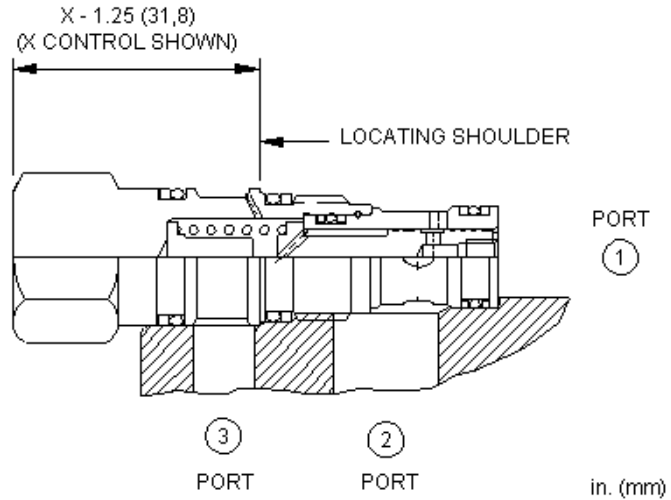
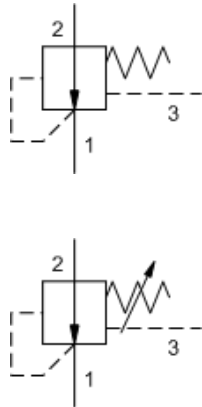
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Nominal Compensating Pressure	14 bar
Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: LRDSXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N)
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	V Viton



Normally open modulating elements without an internal orifice act as a restrictive compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

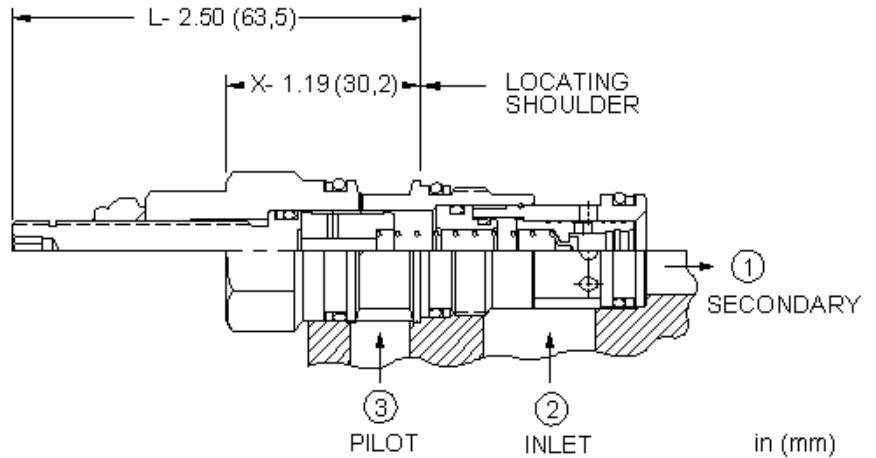
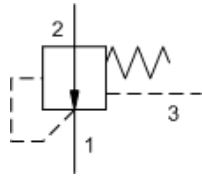
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: LPBCXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N)
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	
L Tuning Adjustment	D 50 psi (3,5 bar)	V Viton	
	F 100 psi (7 bar)		



Normally open modulating elements without an internal orifice act as a restrictive compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

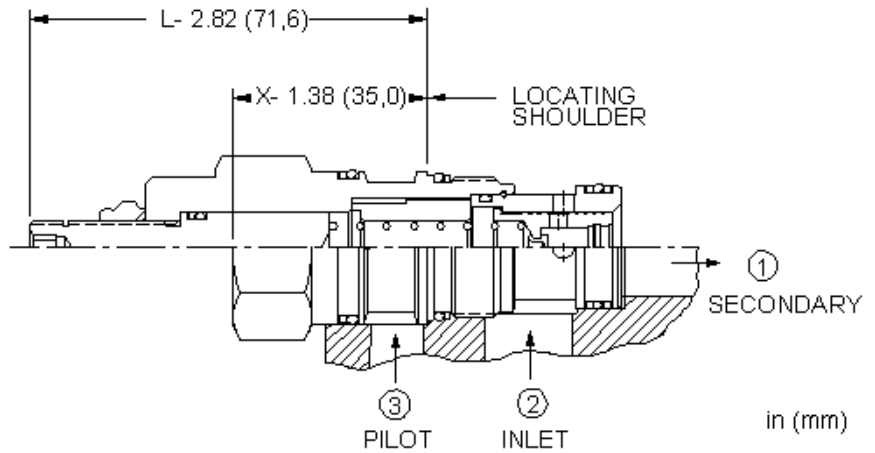
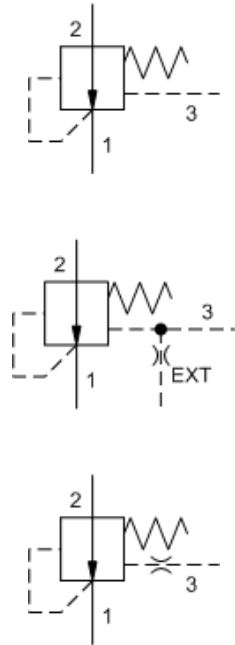
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: LPDCXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar) D 50 psi (3,5 bar) F 100 psi (7 bar) G 150 psi (10,5 bar)	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



Normally open modulating elements without an internal orifice act as a restrictive compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

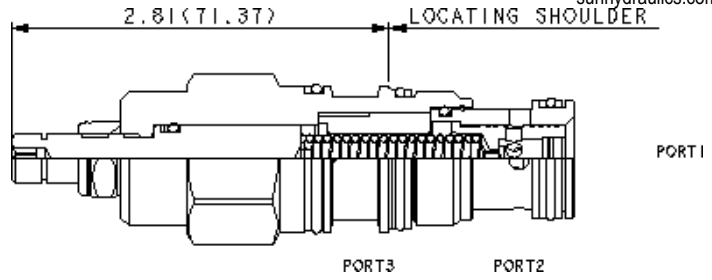
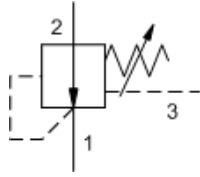
TECHNICAL DATA

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

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS
Model Code Example: LPFCXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar) D 50 psi (3,5 bar) F 100 psi (7 bar) G 150 psi (10,5 bar)	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



Normally open modulating elements without an internal orifice act as a restrictive compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

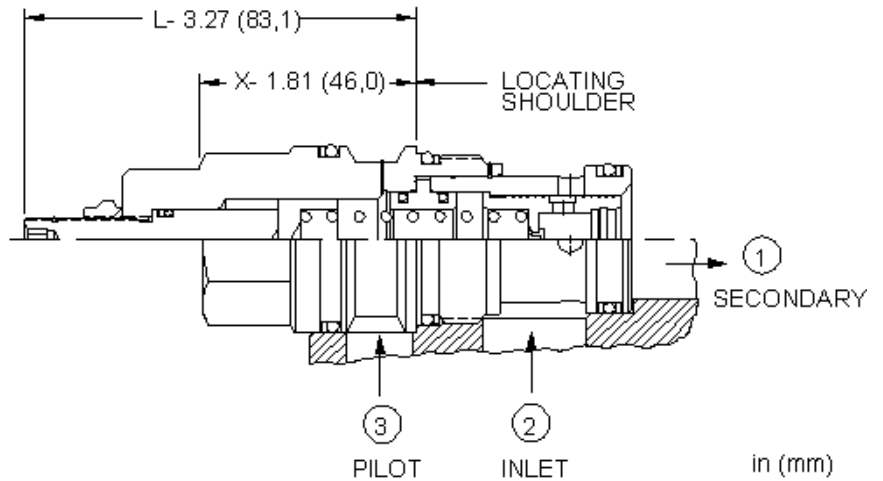
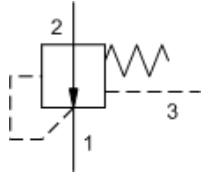
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: LPFCLDN

DIFFERENTIAL PRESSURE	(D) SEAL MATERIAL	(N) MATERIAL/COATING
D 50 psi (3,5 bar)	N Buna-N	Standard Material/Coating
	E EPDM	/LH Mild Steel, Zinc-Nickel
	V Viton	



Normally open modulating elements without an internal orifice act as a restrictive compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

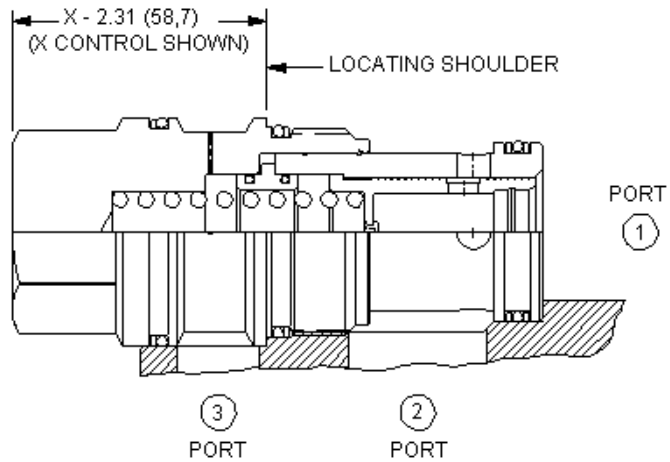
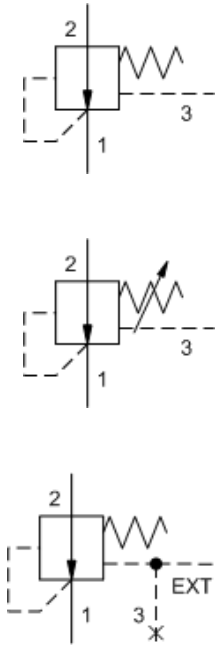
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
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: LPHCXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar) D 50 psi (3,5 bar) F 100 psi (7 bar) G 150 psi (10,5 bar)	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



in. (mm)

Normally open modulating elements without an internal orifice act as a restrictive compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

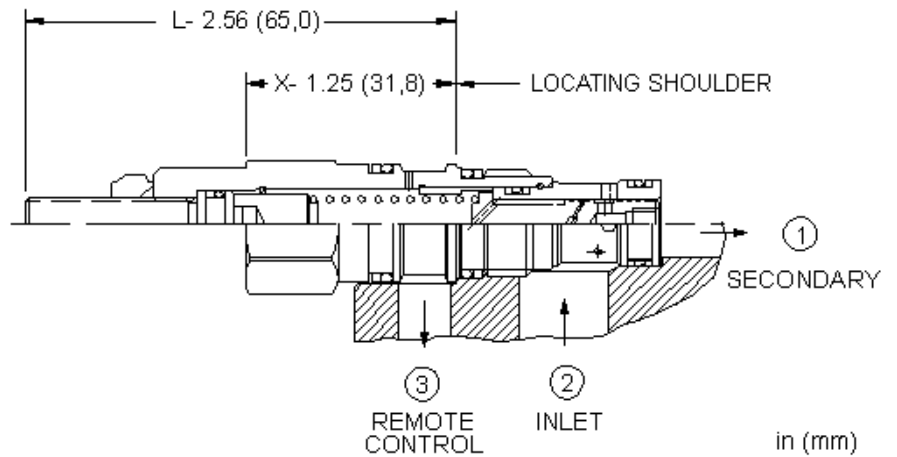
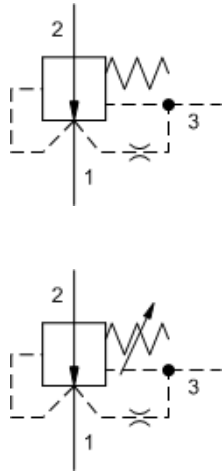
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: LPJCHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	Standard Material/Coating
P External 1/4 NPTF Pilot Port, Port 3 Blocked	D 50 psi (3,5 bar)	V Viton	/AP Stainless Steel, Passivated
	F 100 psi (7 bar)		/LH Mild Steel, Zinc-Nickel
	G 150 psi (10,5 bar)		



These normally open modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage reducing valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

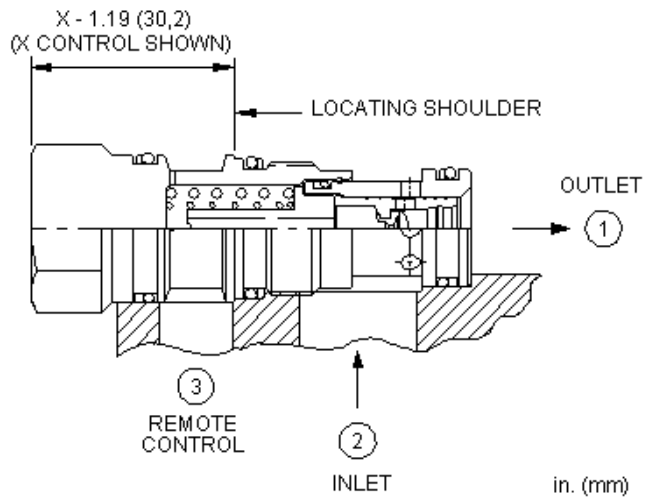
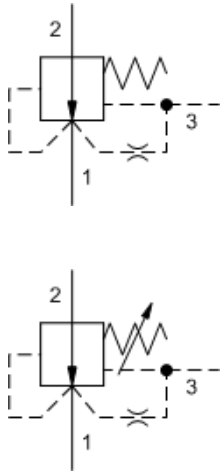
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Orifice Diameter	0,4 mm
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: LPBAXHN

CONTROL	(X) BIAS PRESSURE	(H) SEAL MATERIAL	(N)
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	
L Tuning Adjustment	D 50 psi (3,5 bar)	V Viton	
	F 100 psi (7 bar)		



These normally open modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage reducing valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

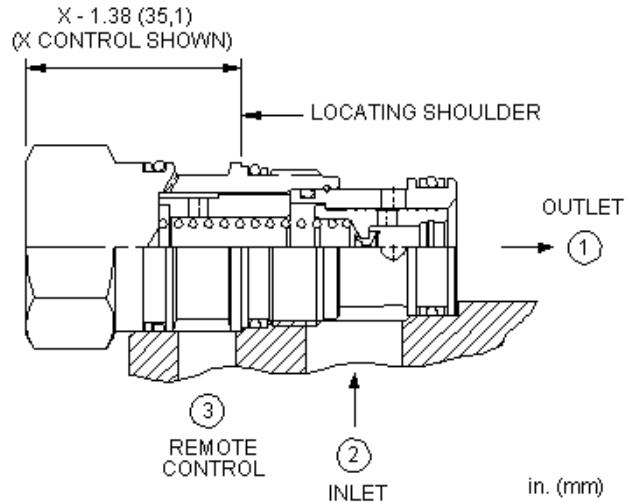
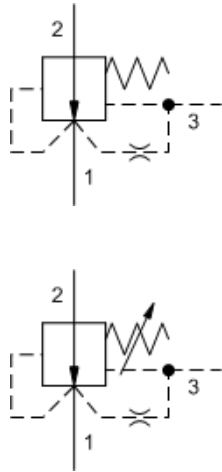
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,16 - 0,25 L/min.
Control Orifice Diameter	0,4 mm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: LPDAXHN

CONTROL	(X) BIAS PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	Standard Material/Coating
L Tuning Adjustment	D 50 psi (3,5 bar)	V Viton	/AP Stainless Steel, Passivated
	F 100 psi (7 bar)		



These normally open modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage reducing valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

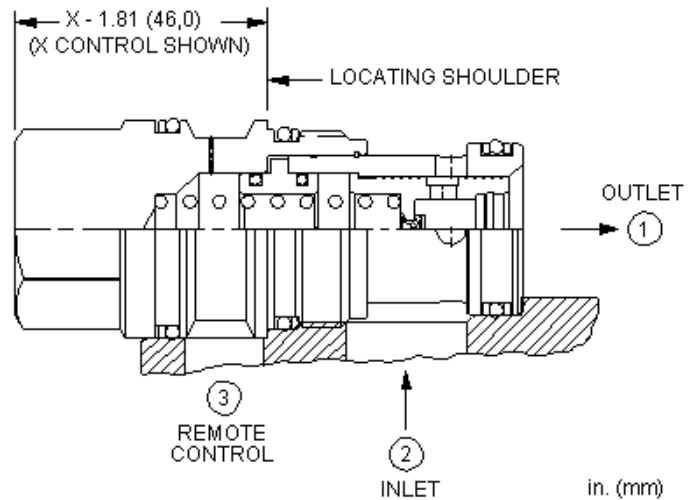
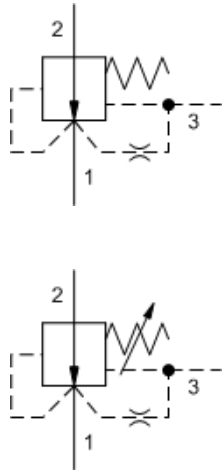
TECHNICAL DATA

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

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,16 - 0,25 L/min.
Control Orifice Diameter	0,4 mm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS
Model Code Example: LPFAXHN

CONTROL	(X) BIAS PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	Standard Material/Coating
L Tuning Adjustment	D 50 psi (3,5 bar)	V Viton	/AP Stainless Steel, Passivated



These normally open modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage reducing valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

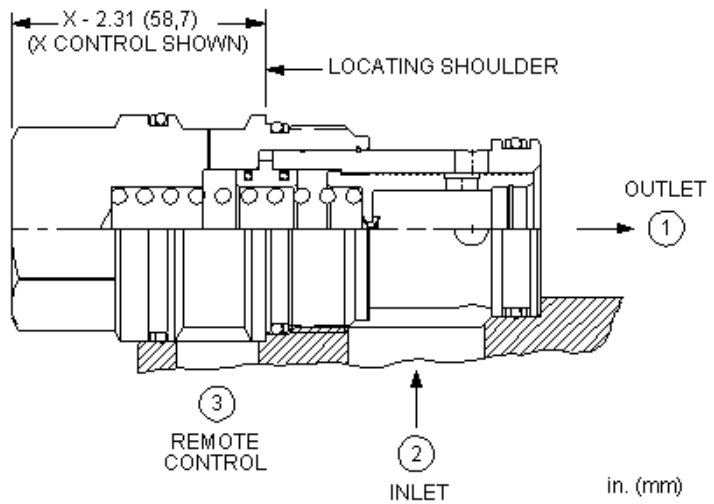
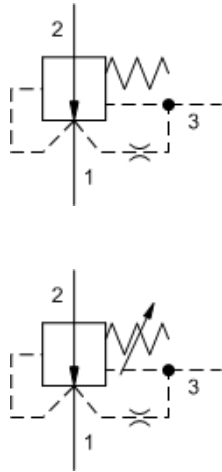
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,25 - 0,50 L/min.
Control Orifice Diameter	0,53 mm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: LPHAXDN

CONTROL	(X) BIAS PRESSURE	(D) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	D 50 psi (3,5 bar)	N Buna-N	Standard Material/Coating
L Tuning Adjustment	F 100 psi (7 bar)	E EPDM	JAP Stainless Steel, Passivated
	G 150 psi (10,5 bar)	V Viton	
	H 200 psi (14 bar)		



These normally open modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage reducing valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

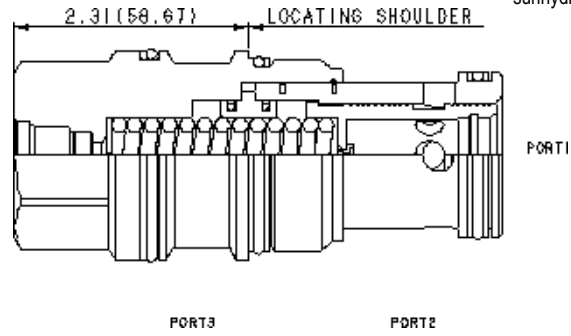
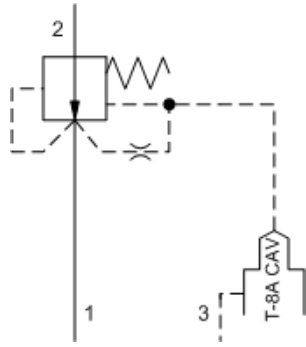
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Control Pilot Flow	0,25 - 0,50 L/min.
Control Orifice Diameter	0,53 mm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: LPJAXHN

CONTROL	(X) BIAS PRESSURE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	Standard Material/Coating
L Tuning Adjustment	D 50 psi (3,5 bar)	E EPDM	IAP Stainless Steel, Passivated
	F 100 psi (7 bar)	V Viton	
	G 150 psi (10,5 bar)		



These normally open modulating elements with an internal orifice between port 1 and port 3 can be used as a main-stage reducing valve. The valve can be controlled remotely using a pilot relief or pilot solenoid valve.

TECHNICAL DATA

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

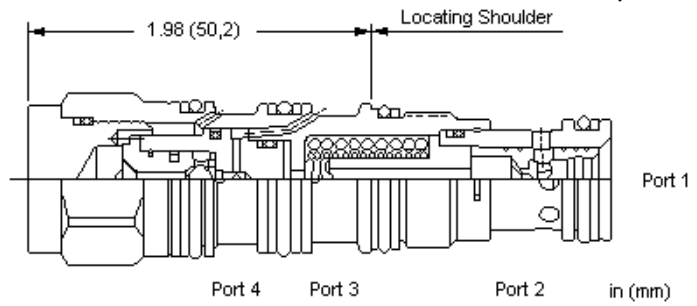
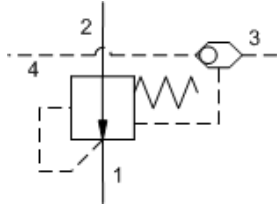
Maximum Operating Pressure	350 bar
Control Pilot Flow	0,25 - 0,50 L/min.
Pilot Control Cavity	T-8A
Control Orifice Diameter	0,53 mm
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

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: LPJA8DN

BIAS PRESSURE	(D)	SEAL MATERIAL	(N)
D 50 psi (3,5 bar)		N Buna-N	
		E EPDM	
		V Viton	



A normally open modulating element, used as a restrictive compensator, ensures a constant pressure drop across an external orifice to create a pressure compensated flow control. The resulting flow remains constant regardless of variations in upstream or downstream pressure.

A ball shuttle connects the after orifice signal from the higher of port 3 or 4 to the pilot area.

TECHNICAL DATA

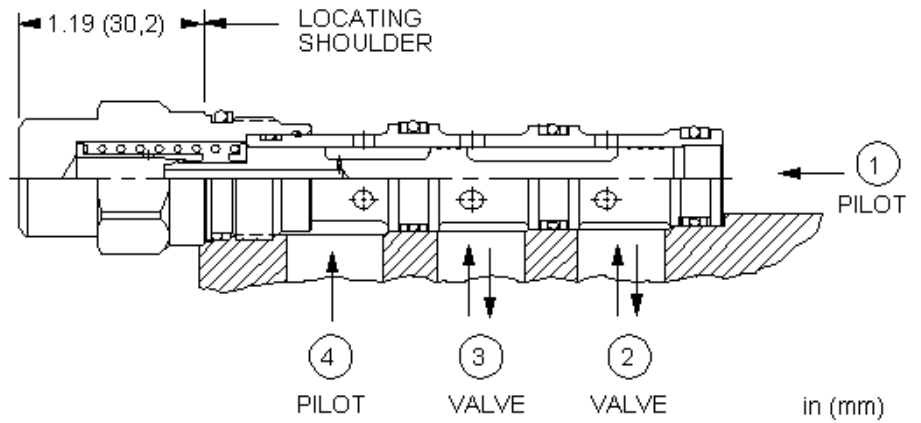
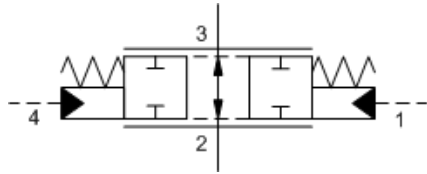
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Nominal Compensating Pressure	14 bar
Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: LPDSXHN

CONTROL	(X) DIFFERENTIAL PRESSURE	(H) SEAL MATERIAL	(N)
X Not Adjustable	H 200 psi (14 bar)	N Buna-N	V Viton



These bi-directional, normally open, modulating elements used with an external orifice, create a bi-directional, pressure compensated flow control.

TECHNICAL DATA

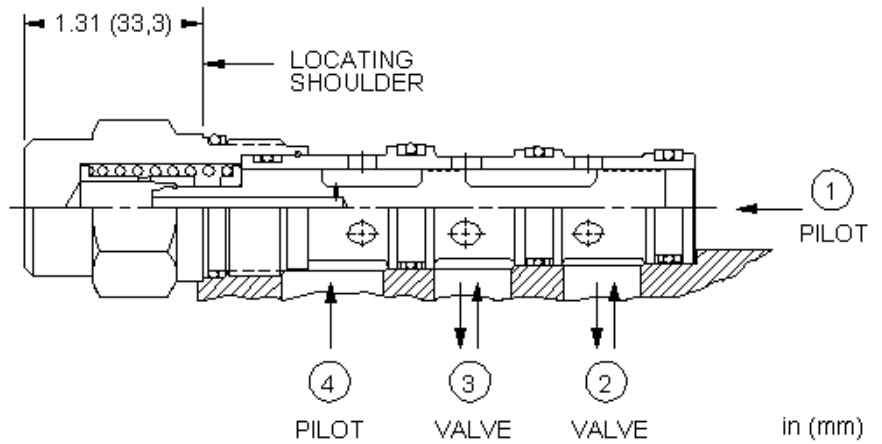
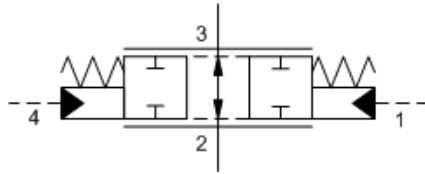
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990031007
Seal kit - Cartridge	EPDM: 990031014
Seal kit - Cartridge	Polyurethane: 990031002
Seal kit - Cartridge	Viton: 990031006

CONFIGURATION OPTIONS

Model Code Example: LHDTXFN

CONTROL	(X) NOMINAL CONTROL PRESSURE (F)	SEAL MATERIAL (N)
X Not Adjustable	F 100 psi (7 bar)	N Buna-N
	D 50 psi (3,5 bar)	E EPDM
	E 75 psi (5 bar)	V Viton



These bi-directional, normally open, modulating elements used with an external orifice, create a bi-directional, pressure compensated flow control.

TECHNICAL DATA

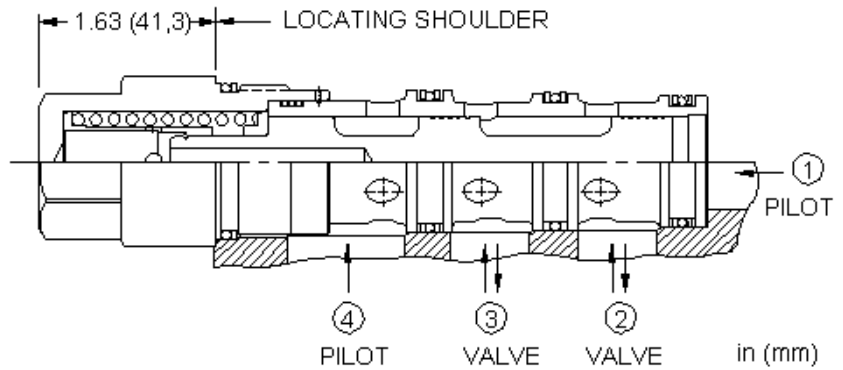
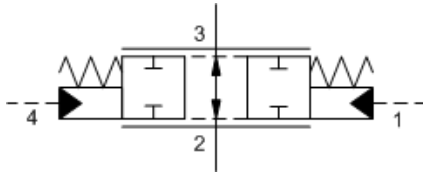
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990032007
Seal kit - Cartridge	EPDM: 990032014
Seal kit - Cartridge	Polyurethane: 990032002
Seal kit - Cartridge	Viton: 990032006

CONFIGURATION OPTIONS

Model Code Example: LHFTXFN

CONTROL	(X) NOMINAL CONTROL PRESSURE (F)	SEAL MATERIAL (N)
X Not Adjustable	F 100 psi (7 bar)	N Buna-N
	D 50 psi (3,5 bar)	E EPDM
	E 75 psi (5 bar)	V Viton



These bi-directional, normally open, modulating elements used with an external orifice, create a bi-directional, pressure compensated flow control.

TECHNICAL DATA

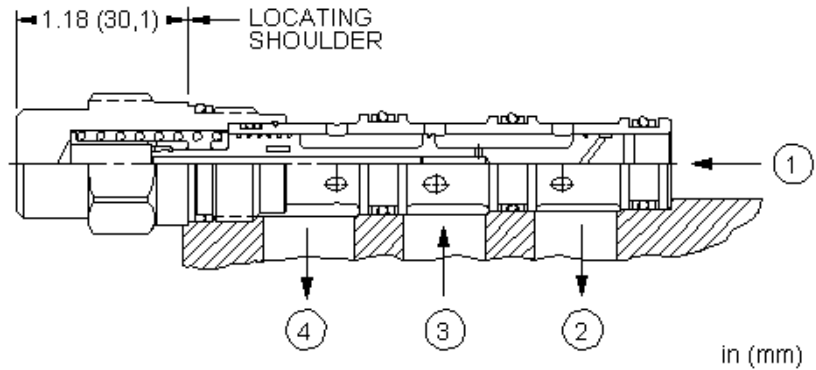
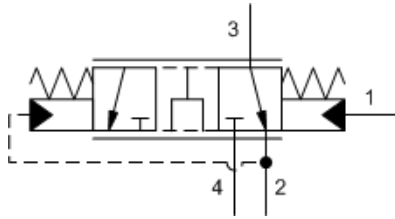
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990033007
Seal kit - Cartridge	EPDM: 990033014
Seal kit - Cartridge	Polyurethane: 990033002
Seal kit - Cartridge	Viton: 990033006

CONFIGURATION OPTIONS

Model Code Example: LHHTXFN

CONTROL	(X) DIFFERENTIAL PRESSURE	(F) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	F 100 psi (7 bar) D 50 psi (3,5 bar) E 75 psi (5 bar)	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated



Bypass/restrictive modulating elements, when combined with an external orifice, create a bypass/restrictive flow control. Input flow (port 3) is directed to the priority or control flow at port 2. Once the priority requirements are met, excess flow is bypassed out port 4. The after-orifice signal is connected to port 1. The before-orifice design allows both pressure and flow to be controlled on the priority side of the circuit regardless of pressure in the bypass circuit. These valves work equally well in either closed or open center systems. Their main use is to allow after-market accessories to be driven off the host machine's hydraulic system without adding an additional pump.

TECHNICAL DATA

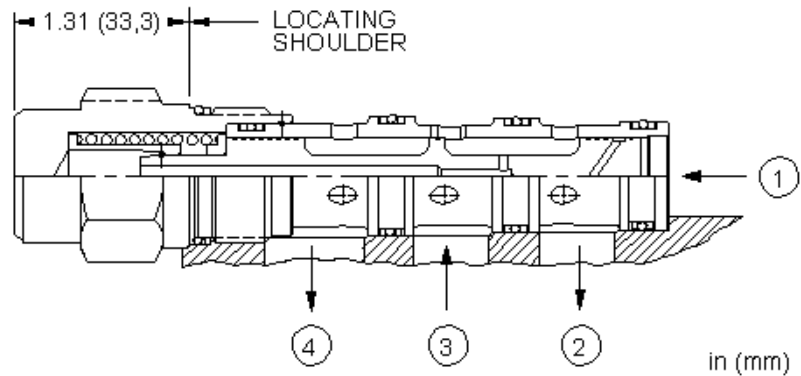
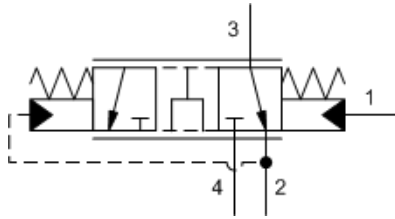
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990031007
Seal kit - Cartridge	Polyurethane: 990031002
Seal kit - Cartridge	Viton: 990031006

CONFIGURATION OPTIONS

Model Code Example: LHDAXFN

CONTROL	(X) DIFFERENTIAL PRESSURE	(F) SEAL MATERIAL	(N)
X Not Adjustable	F 100 psi (7 bar) E 75 psi (5 bar)	N Buna-N E EPDM V Viton	



Bypass/restrictive modulating elements, when combined with an external orifice, create a bypass/restrictive flow control. Input flow (port 3) is directed to the priority or control flow at port 2. Once the priority requirements are met, excess flow is bypassed out port 4. The after-orifice signal is connected to port 1. The before-orifice design allows both pressure and flow to be controlled on the priority side of the circuit regardless of pressure in the bypass circuit. These valves work equally well in either closed or open center systems. Their main use is to allow after-market accessories to be driven off the host machine's hydraulic system without adding an additional pump.

TECHNICAL DATA

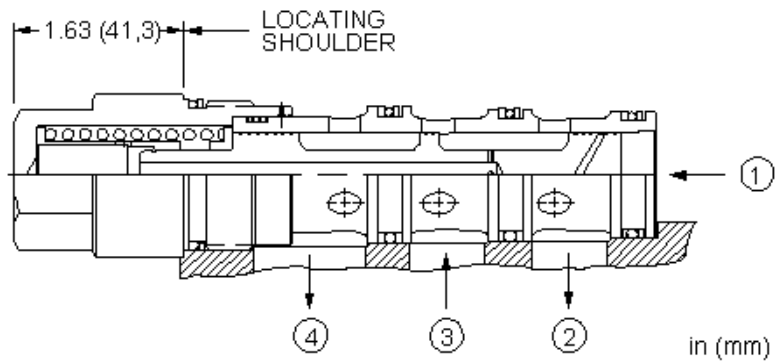
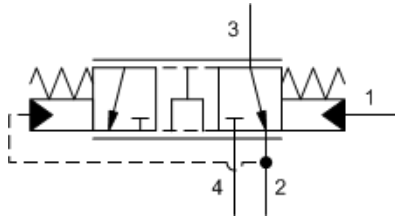
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990032007
Seal kit - Cartridge	EPDM: 990032014
Seal kit - Cartridge	Polyurethane: 990032002
Seal kit - Cartridge	Viton: 990032006

CONFIGURATION OPTIONS

Model Code Example: LHFAXFN

CONTROL	(X) DIFFERENTIAL PRESSURE	(F) SEAL MATERIAL	(N)
X Not Adjustable	F 100 psi (7 bar) E 75 psi (5 bar)	N Buna-N E EPDM V Viton	



Bypass/restrictive modulating elements, when combined with an external orifice, create a bypass/restrictive flow control. Input flow (port 3) is directed to the priority or control flow at port 2. Once the priority requirements are met, excess flow is bypassed out port 4. The after-orifice signal is connected to port 1. The before-orifice design allows both pressure and flow to be controlled on the priority side of the circuit regardless of pressure in the bypass circuit. These valves work equally well in either closed or open center systems. Their main use is to allow after-market accessories to be driven off the host machine's hydraulic system without adding an additional pump.

TECHNICAL DATA

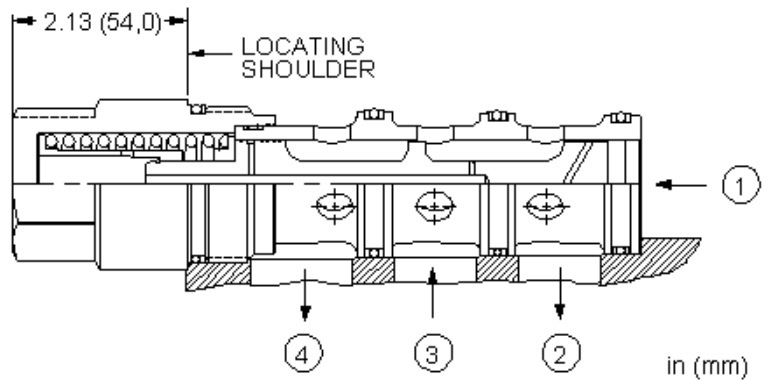
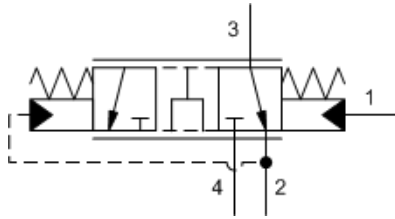
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990033007
Seal kit - Cartridge	EPDM: 990033014
Seal kit - Cartridge	Polyurethane: 990033002
Seal kit - Cartridge	Viton: 990033006

CONFIGURATION OPTIONS

Model Code Example: LHHAXFN

CONTROL	(X) DIFFERENTIAL PRESSURE	(F) SEAL MATERIAL	(N)
X Not Adjustable	F 100 psi (7 bar) E 75 psi (5 bar)	N Buna-N E EPDM V Viton	



Bypass/restrictive modulating elements, when combined with an external orifice, create a bypass/restrictive flow control. Input flow (port 3) is directed to the priority or control flow at port 2. Once the priority requirements are met, excess flow is bypassed out port 4. The after-orifice signal is connected to port 1. The before-orifice design allows both pressure and flow to be controlled on the priority side of the circuit regardless of pressure in the bypass circuit. These valves work equally well in either closed or open center systems. Their main use is to allow after-market accessories to be driven off the host machine's hydraulic system without adding an additional pump.

TECHNICAL DATA

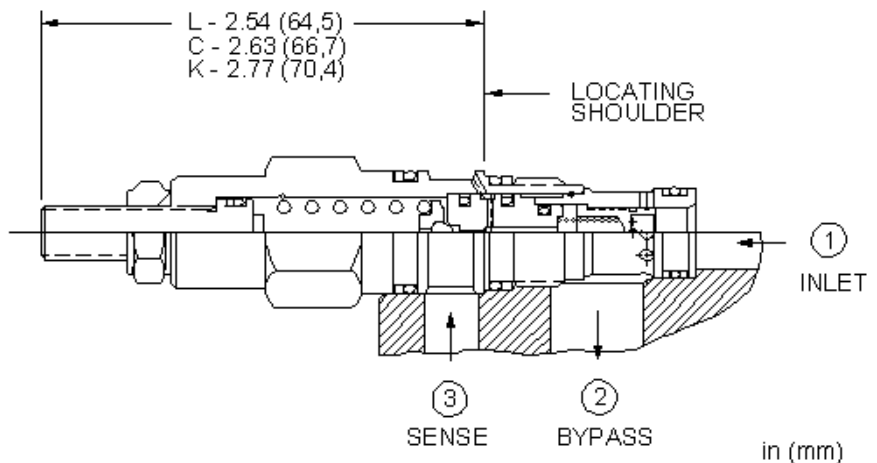
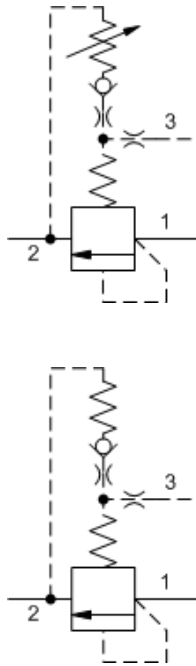
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990034007
Seal kit - Cartridge	EPDM: 990034014
Seal kit - Cartridge	Polyurethane: 990034002
Seal kit - Cartridge	Viton: 990034006

CONFIGURATION OPTIONS

Model Code Example: LHJAXFN

CONTROL	(X) DIFFERENTIAL PRESSURE	(F) SEAL MATERIAL	(N)
X Not Adjustable	F 100 psi (7 bar) E 75 psi (5 bar)	N Buna-N E EPDM V Viton	



Three-port normally closed modulating elements with relief provide two functions when combined with an external orifice. The mainstage is a bypass compensator that controls a priority flow into the circuit, determined by the external orifice. Input flow in excess of the priority flow is bypassed to tank (port 2). If the inlet (port 1) pressure rises to the valve setting, the valve operates as a normal relief valve.

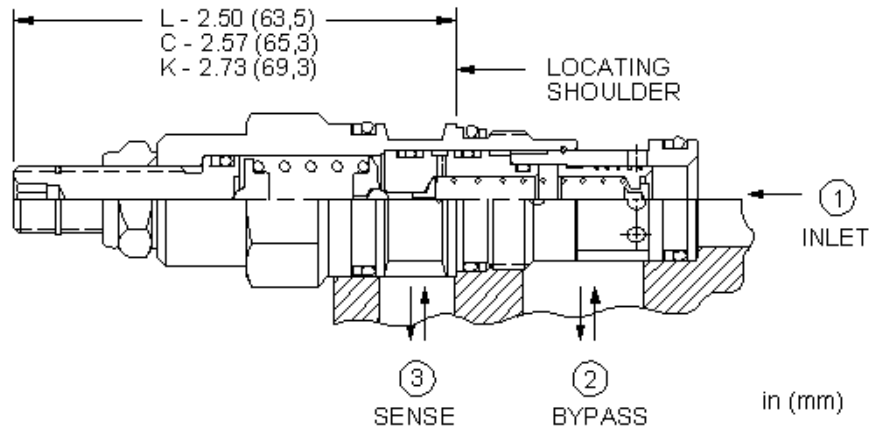
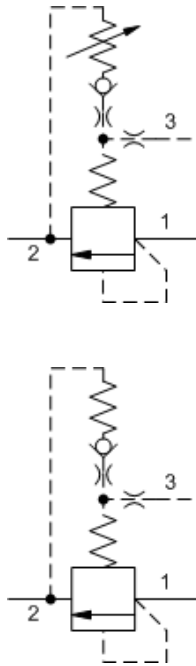
TECHNICAL DATA

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

Factory Pressure Settings Established at	15 L/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS
Model Code Example: RVBBLAN

CONTROL	(L) ADJUSTMENT RANGE	(A) SEAL MATERIAL	(N)
L Standard Screw Adjustment	A 75 - 3000 psi (5 - 210 bar), 1000 psi (70 bar) Standard Setting	N Buna-N	
C Tamper Resistant - Factory Set	B 75 - 1500 psi (5 - 105 bar), 1000 psi (70 bar) Standard Setting	V Viton	
K Handknob	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		



Three-port normally closed modulating elements with relief provide two functions when combined with an external orifice. The mainstage is a bypass compensator that controls a priority flow into the circuit, determined by the external orifice. Input flow in excess of the priority flow is bypassed to tank (port 2). If the inlet (port 1) pressure rises to the valve setting, the valve operates as a normal relief valve.

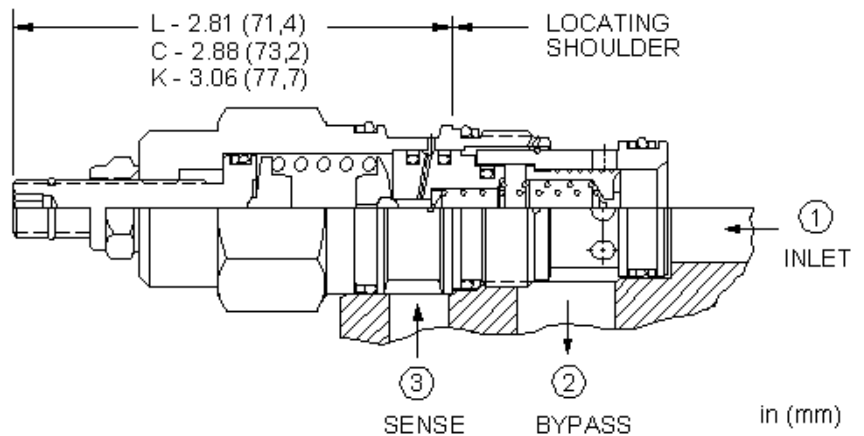
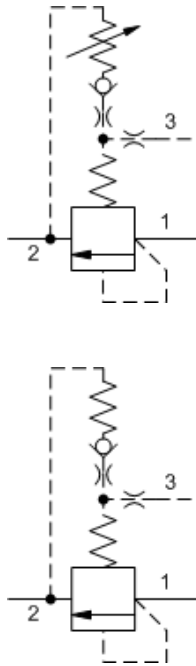
TECHNICAL DATA

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

Factory Pressure Settings Established at	15 L/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS
Model Code Example: RVCBLAN

CONTROL	(L) ADJUSTMENT RANGE	(A) SEAL MATERIAL	(N) MATERIAL/COATING
L Standard Screw Adjustment	A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting	N Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	B 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting	V Viton	/AP Stainless Steel, Passivated
K Handknob	C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting		/LH Mild Steel, Zinc-Nickel



Three-port normally closed modulating elements with relief provide two functions when combined with an external orifice. The mainstage is a bypass compensator that controls a priority flow into the circuit, determined by the external orifice. Input flow in excess of the priority flow is bypassed to tank (port 2). If the inlet (port 1) pressure rises to the valve setting, the valve operates as a normal relief valve.

TECHNICAL DATA

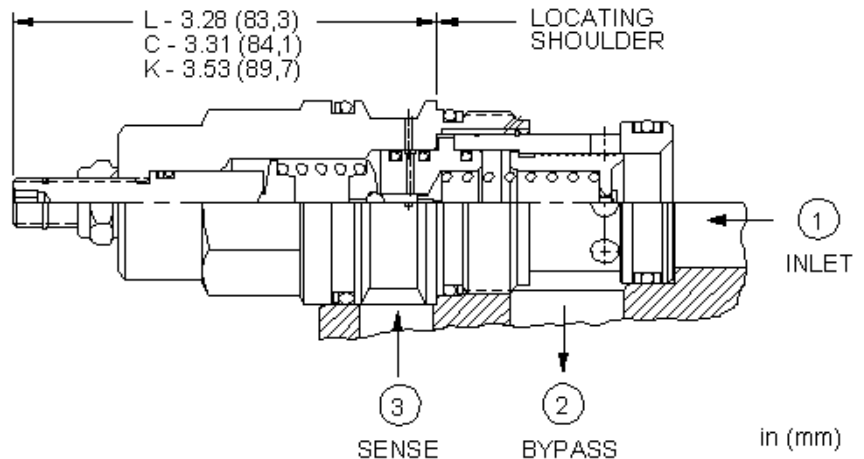
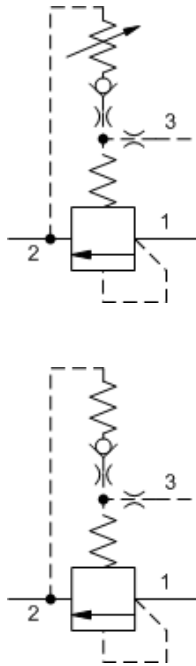
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Factory Pressure Settings Established at	15 L/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	50 cc/min.@70 bar
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: RVEBLAN

CONTROL	(L) ADJUSTMENT RANGE	(A) SEAL MATERIAL	(N) MATERIAL/COATING
L Standard Screw Adjustment	A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting	N Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	B 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting	V Viton	JAP Stainless Steel, Passivated
K Handknob	C 100 - 6000 psi (7 - 420 bar), 1000 psi (70 bar) Standard Setting		
W Hex Wrench Adjustment	W 100 - 4500 psi (7 - 315 bar), 1000 psi (70 bar) Standard Setting		
Y Tri-Grip Handknob			



Three-port normally closed modulating elements with relief provide two functions when combined with an external orifice. The mainstage is a bypass compensator that controls a priority flow into the circuit, determined by the external orifice. Input flow in excess of the priority flow is bypassed to tank (port 2). If the inlet (port 1) pressure rises to the valve setting, the valve operates as a normal relief valve.

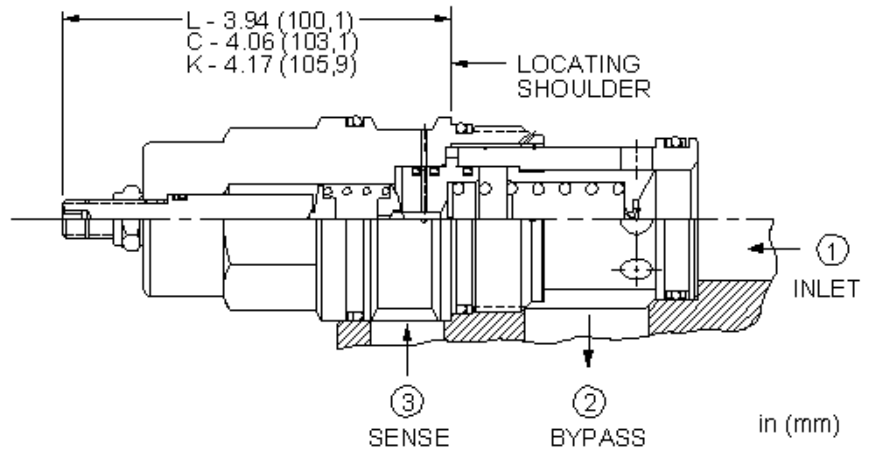
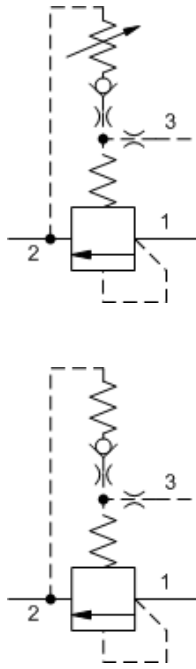
TECHNICAL DATA

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

Factory Pressure Settings Established at	15 L/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	65 cc/min.@70 bar
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS
Model Code Example: RVGBLAN

CONTROL	(L) ADJUSTMENT RANGE	(A) SEAL MATERIAL	(N) MATERIAL/COATING
L Standard Screw Adjustment	A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting	N Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	B 150 - 1500 psi (10,5 - 105 bar), 1000 psi (70 bar) Standard Setting	V Viton	JAP Stainless Steel, Passivated
K Handknob	C 100 - 6000 psi (7 - 420 bar), 1000 psi (70 bar) Standard Setting		



Three-port normally closed modulating elements with relief provide two functions when combined with an external orifice. The mainstage is a bypass compensator that controls a priority flow into the circuit, determined by the external orifice. Input flow in excess of the priority flow is bypassed to tank (port 2). If the inlet (port 1) pressure rises to the valve setting, the valve operates as a normal relief valve.

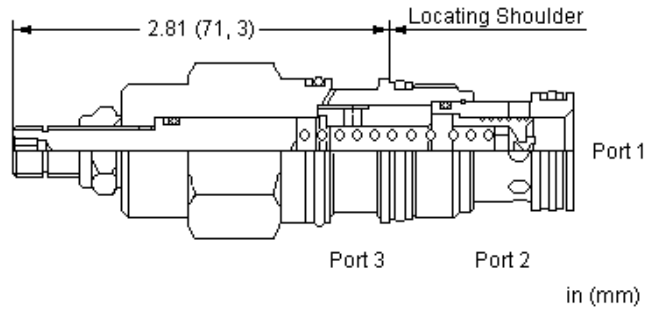
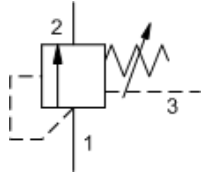
TECHNICAL DATA

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

Factory Pressure Settings Established at	15 L/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	80 cc/min.@70 bar
Response Time - Typical	10 ms
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
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: RVIBLAN

CONTROL	(L)	ADJUSTMENT RANGE	(A)	SEAL MATERIAL	(N)
L Standard Screw Adjustment		A 100 - 3000 psi (7 - 210 bar), 1000 psi (70 bar) Standard Setting		N Buna-N	
C Tamper Resistant - Factory Set		B 50 - 1500 psi (3,5 - 105 bar), 1000 psi (70 bar) Standard Setting		E EPDM	
K Handknob		C 150 - 6000 psi (10,5 - 420 bar), 1000 psi (70 bar) Standard Setting		V Viton	



Normally closed modulating elements without an internal orifice act as a bypass compensator to maintain a constant pressure drop across an orifice, regardless of variations in upstream or downstream pressure.

TECHNICAL DATA

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

Maximum Operating Pressure	350 bar
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: LRFCLDN

DIFFERENTIAL PRESSURE	(D) SEAL MATERIAL	(N) MATERIAL/COATING
D 50 psi (3,5 bar)	N Buna-N	Standard Material/Coating
F 100 psi (7 bar)	E EPDM	/AP Stainless Steel, Passivated
	V Viton	/LH Mild Steel, Zinc-Nickel

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