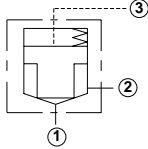
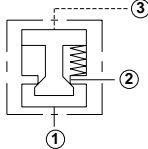
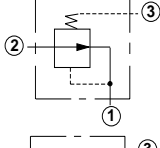
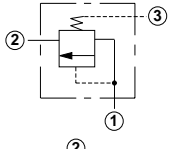
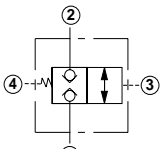
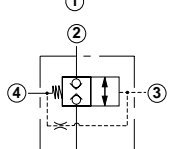
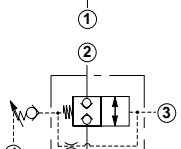
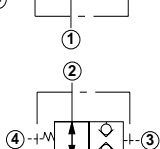
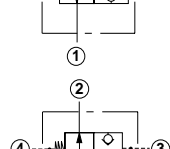
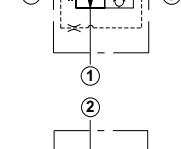
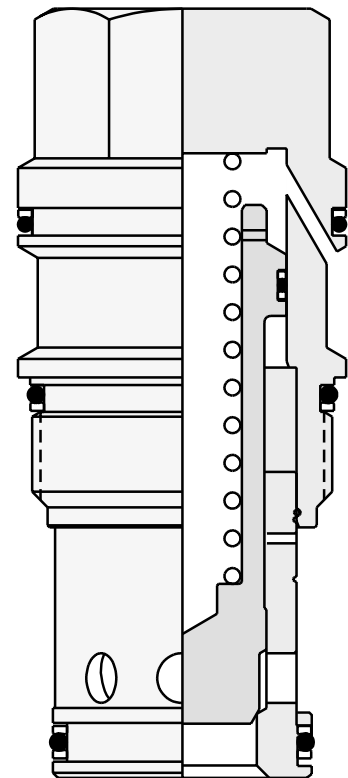
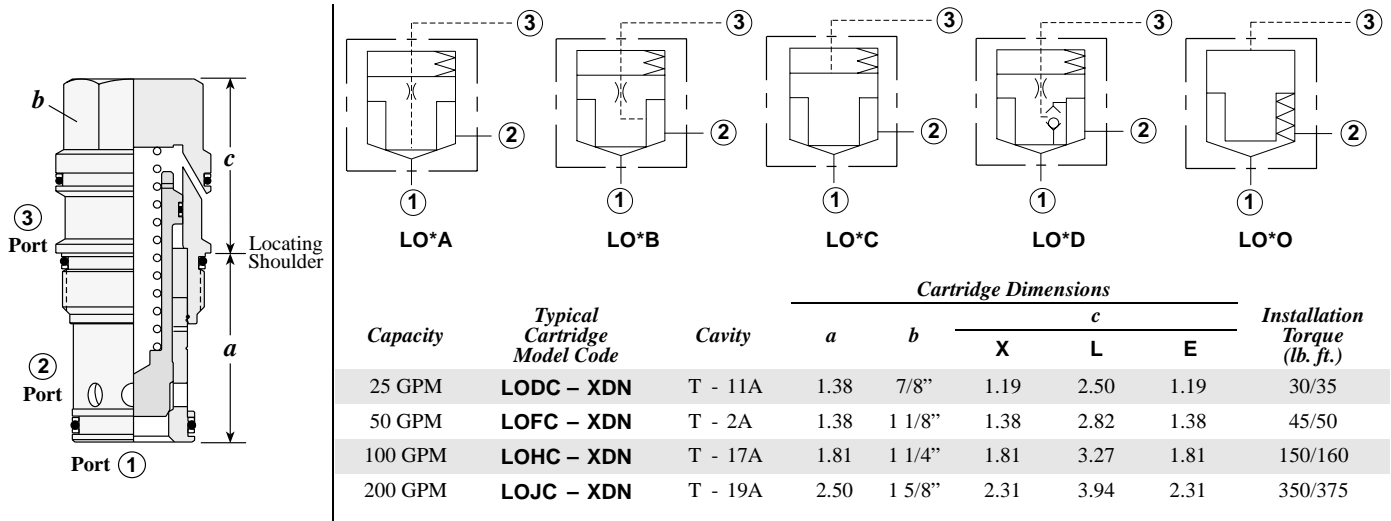


Logic Elements

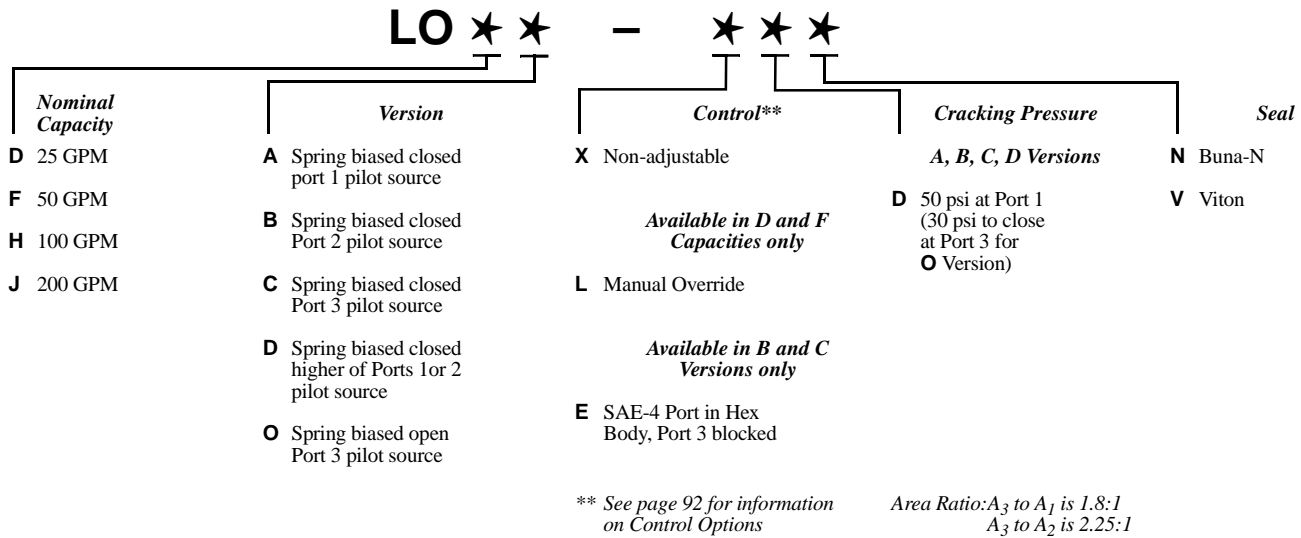
<i>Cartridge Type</i>	<i>Page</i>
	Pilot-to-Close, Unbalanced Switching Element 54
	Pilot-to-Open, Unbalanced Switching Element 55
	Normally Open Modulating Element 56
	Normally Closed Modulating Element 57
	Normally Closed, Balanced Type, Direct Operated 58
	Normally Closed, Balanced Type, Vent-to-Operate 58
	Normally Closed, Balanced Type, Pressure Adjustable 59
	Normally Open, Balanced Type, Direct Operated 59
	Normally Open, Balanced Type, Vent-to-Operate 60
	Normally Open, Balanced Type, Pressure Adjustable 60



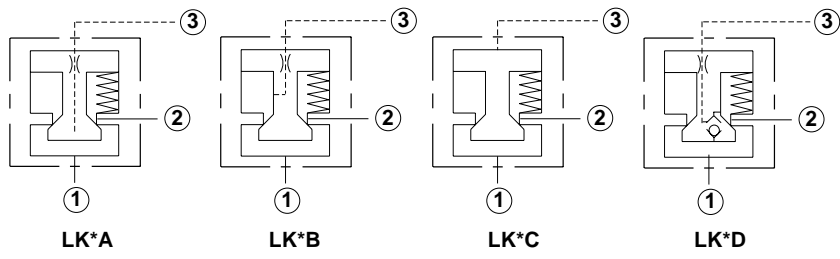
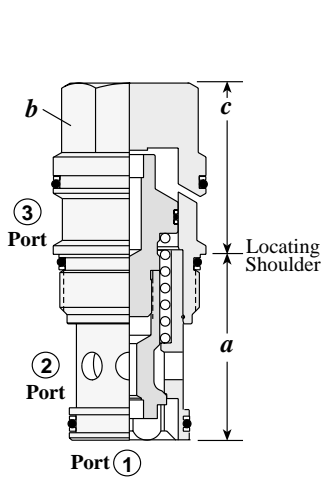
PILOT-TO-CLOSE, UNBALANCED SWITCHING ELEMENT



OPTION ORDERING INFORMATION

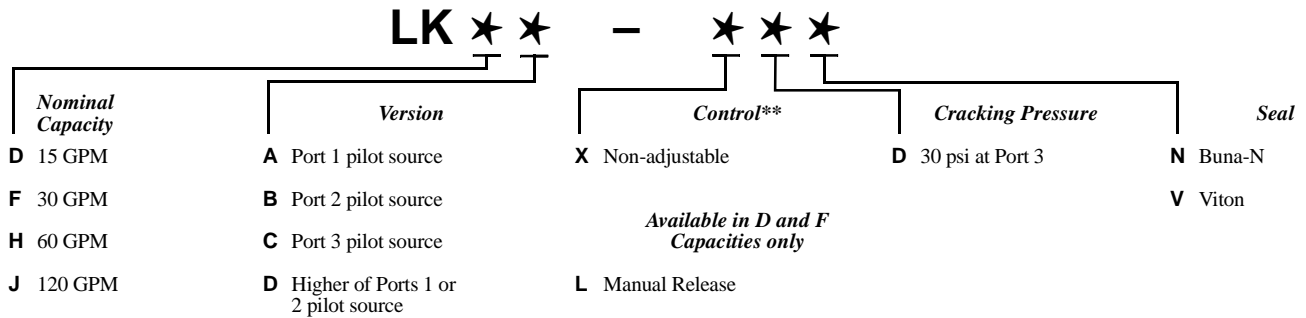


PILOT-TO-OPEN, UNBALANCED SWITCHING ELEMENT



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c		
					X	L	
15 GPM	LKDC - XDN	T - 11A	1.38	7/8"	1.19	2.50	30/35
30 GPM	LKFC - XDN	T - 2A	1.38	1 1/8"	1.38	2.82	45/50
60 GPM	LKHC - XDN	T - 17A	1.81	1 1/4"	1.81	3.27	150/160
120 GPM	LKJC - XDN	T - 19A	2.50	1 5/8"	2.31	3.94	350/375

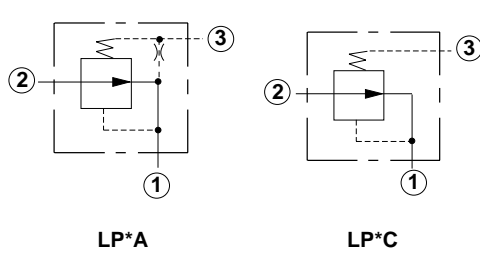
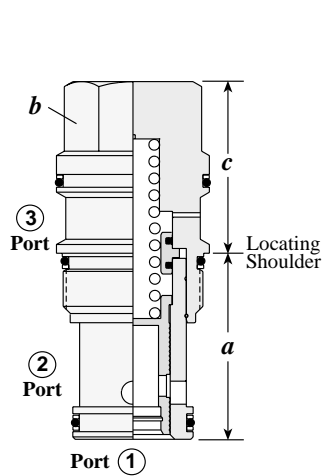
OPTION ORDERING INFORMATION



** See page 92 for information on Control Options

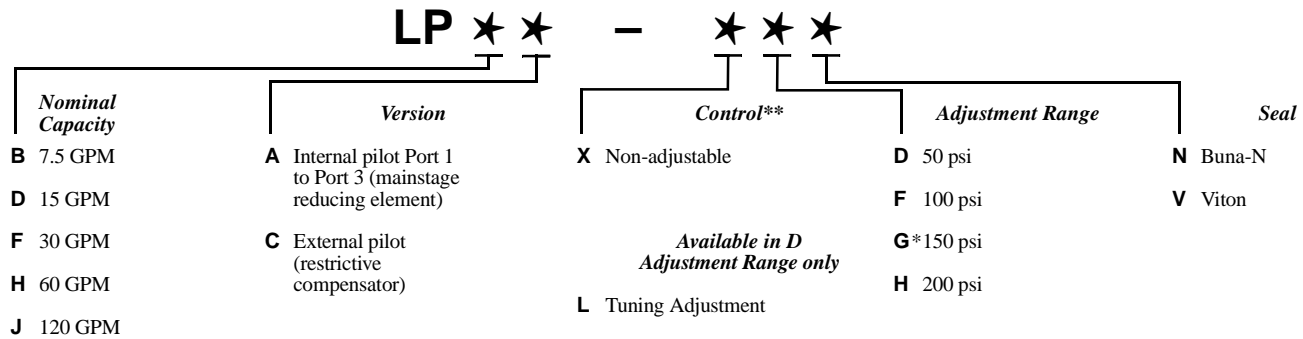
Area Ratio: A₃ to A₁ is 1.8:1
A₃to A₂ is 2.25:1

NORMALLY OPEN MODULATING ELEMENT



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c		
					X	L	
7.5 GPM	LPBA - XHN	T - 163A	1.22	3/4"	1.25	2.55	25/30
15 GPM	LPDA - XHN	T - 11A	1.38	7/8"	1.19	2.50	30/35
30 GPM	LPFA - XHN	T - 2A	1.38	1 1/8"	1.38	2.82	45/50
60 GPM	LPHA - XHN	T - 17A	1.81	1 1/4"	1.81	3.27	150/160
120 GPM	LPJA - XHN	T - 19A	2.50	1 5/8"	2.31	3.94	350/375

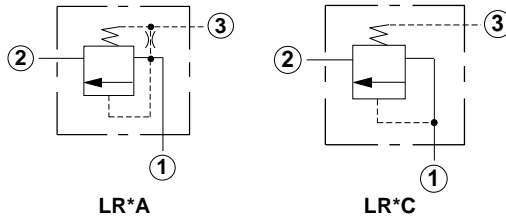
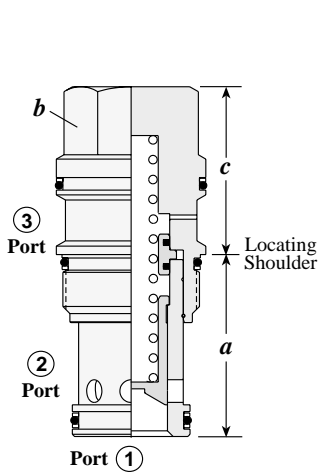
OPTION ORDERING INFORMATION



** See page 92 for information on Control Options

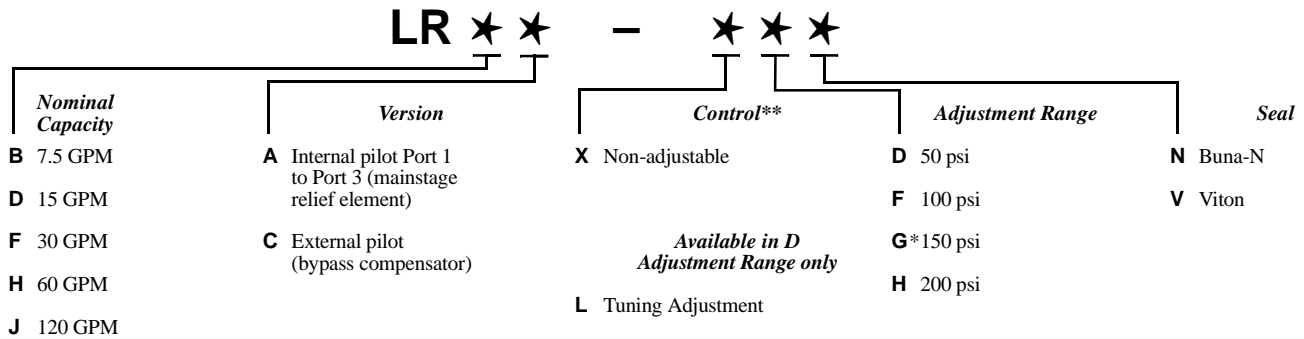
* G Adjustment Range not available in LPBA, LPBC.

NORMALLY CLOSED MODULATING ELEMENT



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c		
7.5 GPM	LRBA – XHN	T - 163A	1.22	3/4"	X 1.25	L 2.55	25/30
15 GPM	LRDA – XHN	T - 11A	1.38	7/8"	X 1.19	L 2.50	30/35
30 GPM	LRFA – XHN	T - 2A	1.38	1 1/8"	X 1.38	L 2.82	45/50
60 GPM	LRHA – XHN	T - 17A	1.81	1 1/4"	X 1.81	L 3.27	150/160
120 GPM	LRJA – XHN	T - 19A	2.50	1 5/8"	X 2.31	L 3.94	350/375

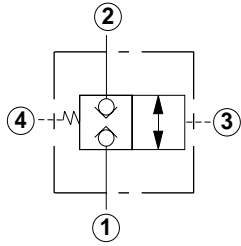
OPTION ORDERING INFORMATION



** See page 92 for information on Control Options

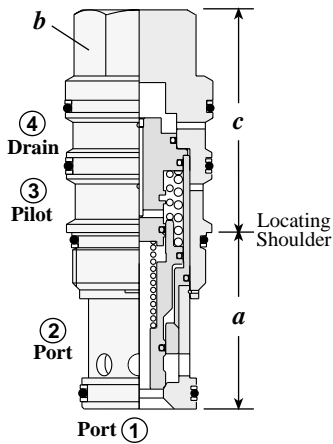
* G Adjustment Range not available in LRBA, LRBC.

NORMALLY CLOSED, BALANCED TYPE, DIRECT OPERATED



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c X	
15 GPM	DKDS - XHN	T - 21A	1.38	7/8"	1.78	30/35
30 GPM	DKFS - XHN	T - 22A	1.38	1 1/8"	2.00	45/50
60 GPM	DKHS - XHN	T - 23A	1.81	1 1/4"	2.47	150/160
120 GPM	DKJS - XHN	T - 24A	2.50	1 5/8"	3.16	350/375

OPTION ORDERING INFORMATION



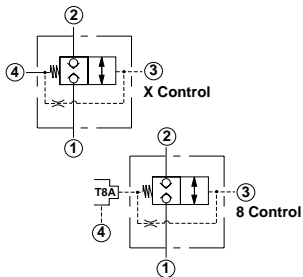
DK * S - * * *

Nominal Capacity	Control**	Adjustment Range	Seal
D 15 GPM	X Non-adjustable	H 200 psi	N Buna-N
F 30 GPM			V Viton
H 60 GPM			
J 120 GPM			

Differential from port 3 to 4. Switching pilot pressure is 200 psi independent of pressure in port 1 and 2.

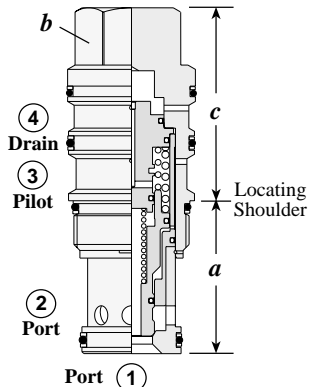
** See page 92 for information on Control Options

NORMALLY CLOSED, BALANCED TYPE, VENT-TO-OPERATE



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c X,8	
15 GPM	DKDR - XHN	T - 21A	1.38	7/8"	1.78	30/35
30 GPM	DKFR - XHN	T - 22A	1.38	1 1/8"	2.00	45/50
60 GPM	DKHR - XHN	T - 23A	1.81	1 1/4"	2.47	150/160
120 GPM	DKJR - XHN	T - 24A	2.50	1 5/8"	3.16	350/375

OPTION ORDERING INFORMATION



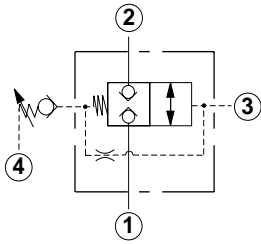
DK * R - * * *

Nominal Capacity	Control**	Adjustment Range	Seal
D 15 GPM	X Non-adjustable	H 200 psi	N Buna-N
F 30 GPM	8 with T-8A cavity in hex body for pilot operation (see pilot control section for alternate options)		V Viton
H 60 GPM			
J 120 GPM			

Differential from port 3 to 4. Switching pilot pressure is 200 psi independent of pressure in port 1 and 2.

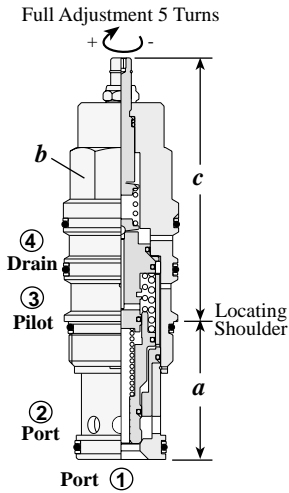
** See page 92 for information on Control Options

NORMALLY CLOSED, BALANCED TYPE, PRESSURE ADJUSTABLE



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)		
			a	b	c			
15 GPM	DKDP – LAN	T - 21A	1.38	7/8"	3.11	3.15	3.35	30/35
30 GPM	DKFP – LAN	T - 22A	1.38	1 1/8"	3.43	3.50	3.70	45/50
60 GPM	DKHP – LAN	T - 23A	1.81	1 1/4"	3.94	3.98	4.17	150/160
120 GPM	DKJP – LAN	T - 24A	2.50	1 5/8"	4.76	4.92	5.04	350/375

OPTION ORDERING INFORMATION



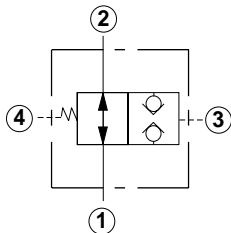
DK * P - * * *

Nominal Capacity	Control**	Adjustment Range	Seal
D 15 GPM	L Standard Screw	A 200 - 3000 psi	N Buna-N
F 30 GPM	C Tamper Resistant	B 200 - 1500 psi	V Viton
H 60 GPM	K Handknob	W 200 - 4500 psi	
J 120 GPM			

Adjustment Range Options:
A, B, and W are standard set at 1000 psi.
Customer may specify pressure setting.

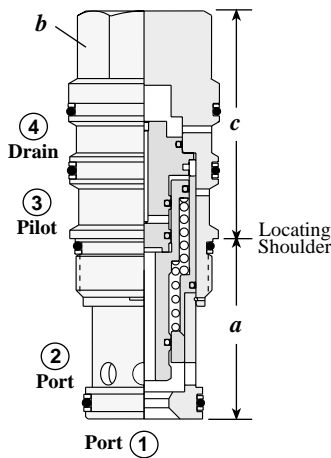
** See page 92 for information on Control Options

NORMALLY OPEN, BALANCED TYPE, DIRECT OPERATED



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c	
15 GPM	DODS – XHN	T - 21A	1.38	7/8"	1.78	30/35
30 GPM	DOFS – XHN	T - 22A	1.38	1 1/8"	2.00	45/50
60 GPM	DOHS – XHN	T - 23A	1.81	1 1/4"	2.47	150/160
120 GPM	DOJS – XHN	T - 24A	2.50	1 5/8"	3.16	350/375

OPTION ORDERING INFORMATION



DO * S - * * *

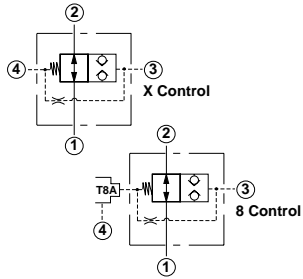
Nominal Capacity	Control**	Adjustment Range	Seal
D 15 GPM	X Non-adjustable	H 200 psi	N Buna-N
F 30 GPM			V Viton
H 60 GPM			
J 120 GPM			

Switching pilot pressure is 200 psi independent of pressure in port 1 and 2.

** See page 92 for information on Control Options

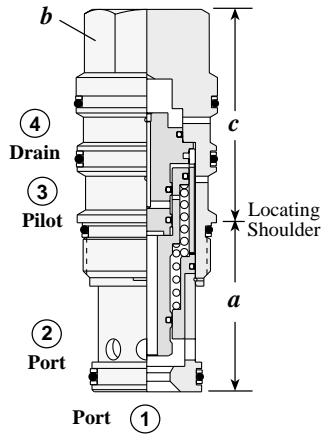


NORMALLY OPEN, BALANCED TYPE, VENT-TO-OPERATE



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c	
15 GPM	DODR – XHN	T - 21A	1.38	7/8"	1.78	30/35
30 GPM	DOFR – XHN	T - 22A	1.38	1 1/8"	2.00	45/50
60 GPM	DOHR – XHN	T - 23A	1.81	1 1/4"	2.47	150/160
120 GPM	DOJR – XHN	T - 24A	2.50	1 5/8"	3.16	350/375

OPTION ORDERING INFORMATION



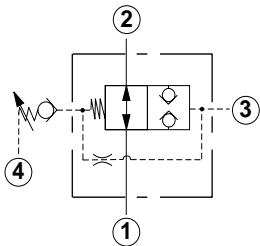
DO * R - * * *

Nominal Capacity	Control**	Adjustment Range	Seal
D 15 GPM	X Non-adjustable	H 200 psi	N Buna-N
F 30 GPM	8 with T-8A cavity in hex body for pilot operation (see pilot control section for alternate options)		V Viton
H 60 GPM			
J 120 GPM			

** See page 92 for information on Control Options

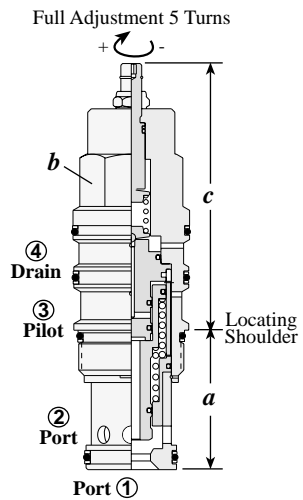
Switching pilot pressure is 200 psi independent of pressure in port 1 and 2.

NORMALLY OPEN, BALANCED TYPE, PRESSURE ADJUSTABLE



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	L C K	
15 GPM	DODP – LAN	T - 21A	1.38	7/8"	3.11 3.15 3.35	30/35
30 GPM	DOFP – LAN	T - 22A	1.38	1 1/8"	3.43 3.50 3.70	45/50
60 GPM	DOHP – LAN	T - 23A	1.81	1 1/4"	3.94 3.98 4.17	150/160
120 GPM	DOJP – LAN	T - 24A	2.50	1 5/8"	4.76 4.92 5.04	350/375

OPTION ORDERING INFORMATION



DO * P - * * *

Nominal Capacity	Control**	Adjustment Range	Seal
D 15 GPM	L Standard Screw	A 200 - 3000 psi	N Buna-N
F 30 GPM	C Tamper Resistant	B 200 - 1500 psi	V Viton
H 60 GPM	K Handknob	W 200 - 4500 psi	
J 120 GPM			

** See page 92 for information on Control Options

Adjustment Range Options:
A, B, and W are standard set at 1000 psi.
Customer may specify pressure setting.