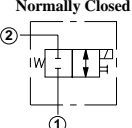
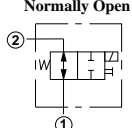
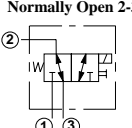
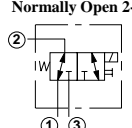
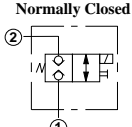
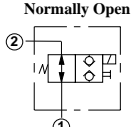
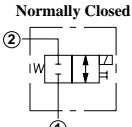
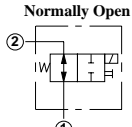
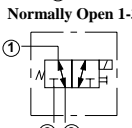
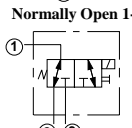
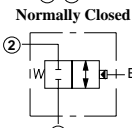
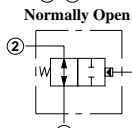
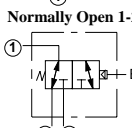
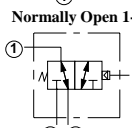
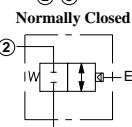
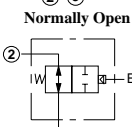
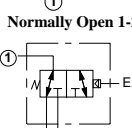
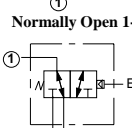
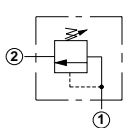
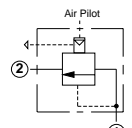
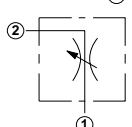
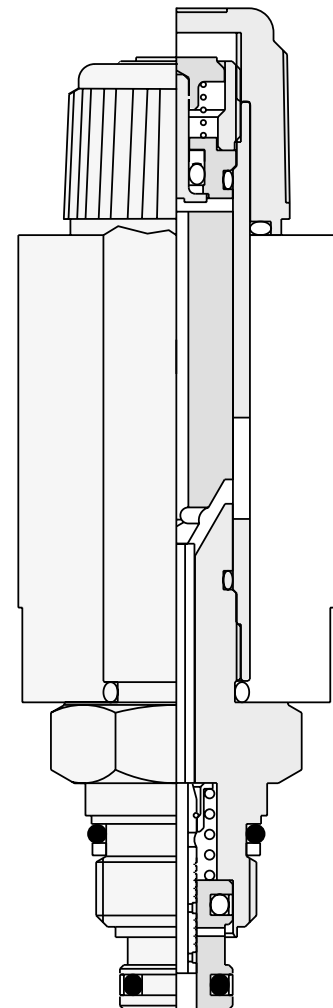


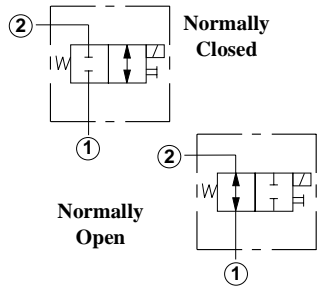
Solenoid Operated and Pilot Control Cartridge Valves

		<i>Cartridge Type</i>	<i>Page</i>
		Solenoid Operated Directional 2 Position 2-Way, Sliding Spool Design	70
		Solenoid Operated Directional 2 Position 3-Way, Sliding Spool Design	70
		Solenoid Operated Directional 2 Position 2-Way, Poppet Design	71
		Pilot Stage Directional, Solenoid Operated 2 Position 2-Way	72
		Pilot Stage Directional, Solenoid Operated 2 Position 3-Way	72
		Pilot Stage Directional, Hydraulically Operated, 2 Position 2-Way	73
		Pilot Stage Directional, Hydraulically Operated, 2 Position 3-Way	73
		Pilot Stage Directional, Air Piloted, 2 Position 2-Way	74
		Pilot Stage Directional, Air Piloted, 2 Position 3-Way	74
		Pilot Stage Relief, Direct Acting, Adjustable	75
		Pilot Stage Relief, Air Controlled, Direct Acting	75
		Pilot Stage, Adjustable Flow Control	76



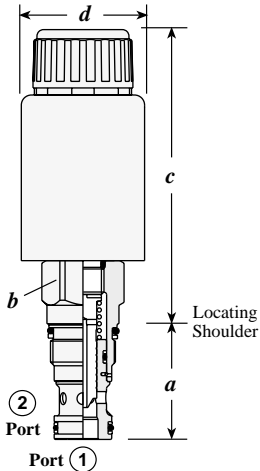
Solenoid Operated and Pilot Control Valves

SOLENOID OPERATED DIRECTIONAL 2 POSITION 2-WAY, SLIDING SPOOL DESIGN



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
10 GPM	DLDA - MHN	T - 13A	1.38	7/8"	3.51	1.47	30/35

OPTION ORDERING INFORMATION



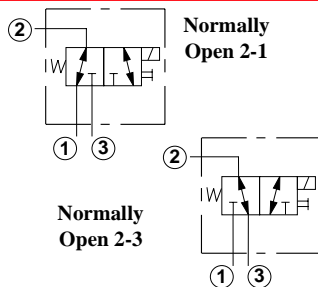
DLDA - M * * - * * *

Nominal Capacity	Control	Spool Configuration	Coil Configuration*
D 10 GPM	M Manual Override	H Normally Open C Normally Closed	ISO/DIN 212 12 VDC 224 24 VDC 211 115 VAC 223 230 VAC
		Seal N Buna-N V Viton	AMP® Junior Timer 612 12 VDC 624 24 VDC Twin Lead 712 12 VDC 724 24 VDC

3600 psi Maximum Continuous Pressure
 Maximum Leakage (in.³/min. at 3600 psi with 150 SUS oil) = 5
 Power (Watts) = 22
 Operating Voltage Tolerance = ± 20%
 Typical response Time (ms) = 50

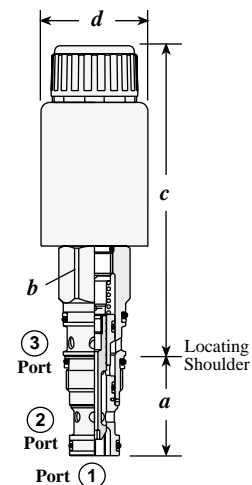
* See page 96 for Solenoid Connector Options

SOLENOID OPERATED DIRECTIONAL 2 POSITION 3-WAY, SLIDING SPOOL DESIGN



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
10 GPM	DMDA - MNN	T - 11A	1.38	7/8"	4.26	1.47	30/35

OPTION ORDERING INFORMATION



DMDA - M * * - * * *

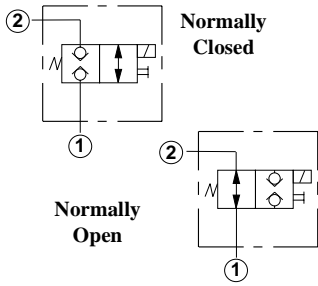
Nominal Capacity	Control	Spool Configuration	Coil Configuration*
D 10 GPM	M Manual Override	A Normally Open Ports 2 to 1 N Normally Open Ports 2 to 3	ISO/DIN 212 12 VDC 224 24 VDC 211 115 VAC 223 230 VAC
		Seal N Buna-N V Viton	AMP® Junior Timer 612 12 VDC 624 24 VDC Twin Lead 712 12 VDC 724 24 VDC

3600 psi Maximum Continuous Pressure
 Maximum Leakage (in.³/min. at 3600 psi with 150 SUS oil) = 5
 Power (Watts) = 22
 Operating Voltage Tolerance = ± 20%
 Typical response Time (ms) = 30-50

* See page 96 for Solenoid Connector Options

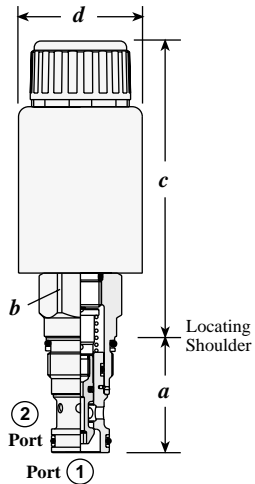
Solenoid Operated and Pilot Control Valves

SOLENOID OPERATED DIRECTIONAL 2 POSITION 2-WAY, POPPET DESIGN



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
10 GPM	DTDA - MHN	T - 13A	1.38	7/8"	3.51	1.47	30/35

OPTION ORDERING INFORMATION



DTDA - M * * - * * *

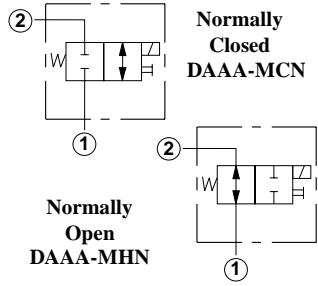
<p>Nominal Capacity</p> <p>D 10 GPM</p>	<p>Control</p> <p>M Manual Override</p>	<p>Spool Configuration</p> <p>H Normally Open</p> <p>C Normally Closed</p>	<p>Coil Configuration*</p> <p>ISO/DIN</p> <p>212 12 VDC</p> <p>224 24 VDC</p> <p>211 115 VAC</p> <p>223 230 VAC</p>
		<p>Seal</p> <p>N Buna-N</p> <p>V Viton</p>	<p>AMP® Junior Timer</p> <p>612 12 VDC</p> <p>624 24 VDC</p>
		<p>Twin Lead</p> <p>712 12 VDC</p> <p>724 24 VDC</p>	

3600 psi Maximum Continuous Pressure
 Maximum Leakage (drops/min. at 3600 psi with 150 SUS oil) = 10
 Power (Watts) = 22
 Operating Voltage Tolerance = ± 20%
 Typical response Time (ms) = 30-50

* See page 96 for Solenoid Connector Options

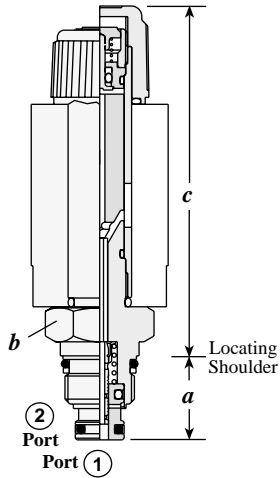
Solenoid Operated and Pilot Control Valves

PILOT STAGE DIRECTIONAL, SOLENOID OPERATED 2 POSITION 2-WAY



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (lb. ft.)
			a	b	M	C	d	
.25 GPM	DAAA – MCN	T - 8A	.75	7/8"	2.94	3.13	1.22	25/30
.25 GPM	DAAA – MHN	T - 8A	.75	7/8"	2.94	3.13	1.22	25/30
.25 GPM	DAAC – MCN	T - 8A	.75	7/8"	2.94	3.13	1.22	25/30
.25 GPM	DAAC – MHN	T - 8A	.75	7/8"	2.94	3.13	1.22	25/30

OPTION ORDERING INFORMATION

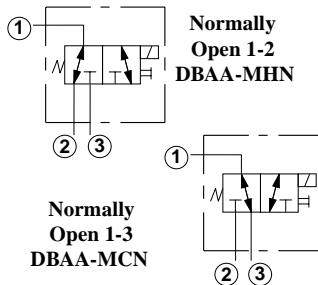


D A A A – M * * – * * *

Nominal Capacity	Control	Spool Configuration	Coil Configuration*
A .25 GPM	M Manual Override	H Normally Open	ISO/DIN
	C Concealed Override	C Normally Closed	206 6 VDC
			212 12 VDC
			224 24 VDC
			211 115 VAC
			223 230 VAC
	Version	Seal	
	A Standard	N Buna-N	SAE J858
	C Canadian Standards Association Certified 3500 psi max.	V Viton	506 6 VDC
			512 12 VDC
			524 24 VDC
			Twin Lead
			706 6 VDC
			712 12 VDC
			724 24 VDC

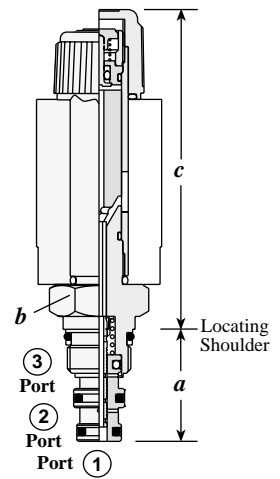
* See page 96 for Solenoid Connector Options
 Maximum Leakage (drops/min. at 5000 psi with 150 SUS oil) = 10
 Diameter Effective Orifice (inches) = .045
 Operating Voltage Tolerance = ± 20%
 Power (Watts) = 12
 Typical response Time (ms) = 30

PILOT STAGE DIRECTIONAL, SOLENOID OPERATED 2 POSITION 3-WAY



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (lb. ft.)
			a	b	M	C	d	
.25 GPM	DBAA – MCN	T - 9A	1.09	7/8"	2.94	3.13	1.22	25/30
.25 GPM	DBAA – MHN	T - 9A	1.09	7/8"	2.94	3.13	1.22	25/30
.25 GPM	DBAC – MCN	T - 9A	1.09	7/8"	2.94	3.13	1.22	25/30
.25 GPM	DBAC – MHN	T - 9A	1.09	7/8"	2.94	3.13	1.22	25/30

OPTION ORDERING INFORMATION



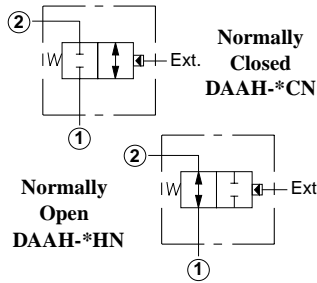
D B A A – M * * – * * *

Nominal Capacity	Control	Spool Configuration	Coil Configuration*
A .25 GPM	M Manual Override	H Normally Open Ports 1 to 2	ISO/DIN
	C Concealed Override	C Normally Open Ports 1 to 3	206 6 VDC
			212 12 VDC
			224 24 VDC
			211 115 VAC
			223 230 VAC
	Version	Seal	
	A Standard	N Buna-N	SAE J858
	C Canadian Standards Association Certified 3500 psi max.	V Viton	506 6 VDC
			512 12 VDC
			524 24 VDC
			Twin Lead
			706 6 VDC
			712 12 VDC
			724 24 VDC

* See page 96 for Solenoid Connector Options
 Maximum Leakage (drops/min. at 5000 psi with 150 SUS oil) = 10
 Diameter Effective Orifice (inches) = .045
 Operating Voltage Tolerance = ± 20%
 Power (Watts) = 12
 Typical response Time (ms) = 30

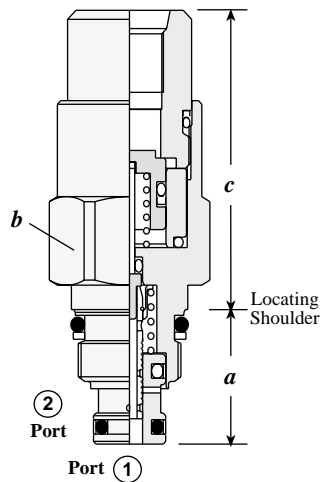
Solenoid Operated and Pilot Control Valves

PILOT STAGE DIRECTIONAL, HYDRAULICALLY OPERATED, 2 POSITION 2-WAY



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c	
.25 GPM	DAAH - BCN	T - 8A	.75	7/8"	1.66	25/30

OPTION ORDERING INFORMATION

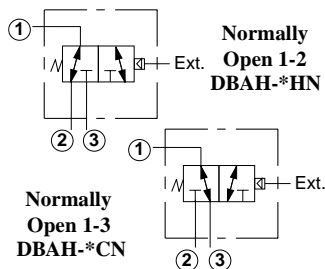


DA A H - * * *

Nominal Capacity	Pilot Port	Spool Configuration	Seal
A .25 GPM	A 1/8-27 NPTF B SAE-4 D 1/8-28 BSPP	H Normally Open C Normally Closed	N Buna-N V Viton

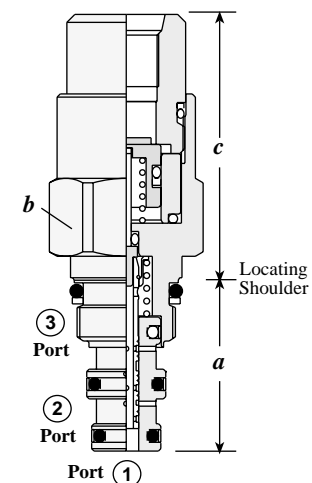
Minimum pilot pressure to operate = 200 psi.

PILOT STAGE DIRECTIONAL, HYDRAULICALLY OPERATED, 2 POSITION 3-WAY



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c	
.25 GPM	DBAH - BCN	T - 9A	1.09	7/8"	1.66	25/30

OPTION ORDERING INFORMATION



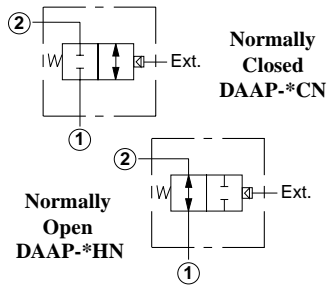
DB A H - * * *

Nominal Capacity	Pilot Port	Spool Configuration	Seal
A .25 GPM	A 1/8-27 NPTF B SAE-4 D 1/8-28 BSPP	H Normally Open Ports 1 to 2 C Normally Open Ports 1 to 3	N Buna-N V Viton

Minimum pilot pressure to operate = 200 psi.

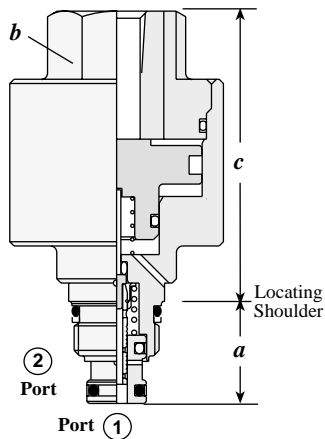
Solenoid Operated and Pilot Control Valves

PILOT STAGE DIRECTIONAL, AIR PILOTED, 2 POSITION 2-WAY



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
.25 GPM	DAAP - FCN	T - 8A	.75	7/8"	2.12	1.56	25/30

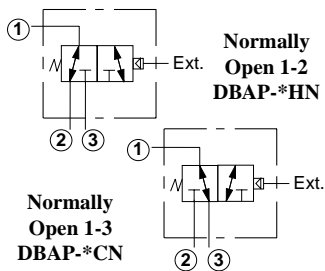
OPTION ORDERING INFORMATION



Nominal Capacity	Pilot Port	Spool Configuration	Seal				
				A	E	F	P
.25 GPM	SAE-4	Normally Open	Buna-N				
	1/8-27 NPTF	Normally Closed	Viton				
	1/8-28 BSPP						

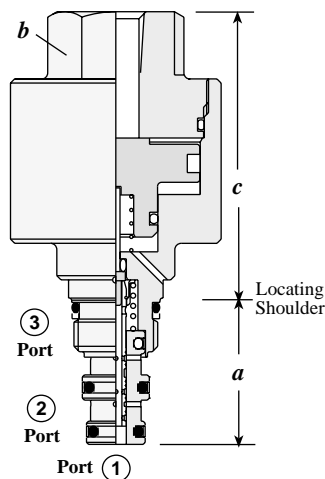
All ports may be pressurized to 500 psi, except pilot port (500 psi).
Pilot pressure required shift = 20 psi + Port 1 psi / 100.

PILOT STAGE DIRECTIONAL, AIR PILOTED, 2 POSITION 3-WAY



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
.25 GPM	DBAP - FCN	T - 9A	1.09	7/8"	2.12	1.56	25/30

OPTION ORDERING INFORMATION

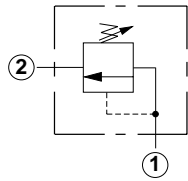


Nominal Capacity	Pilot Port	Spool Configuration	Seal				
				A	E	F	P
.25 GPM	SAE-4	Normally Open Ports 1 to 3	Buna-N				
	1/8-27 NPTF	Normally Closed Ports 1 to 3	Viton				
	1/8-28 BSPP						

All ports may be pressurized to 500 psi, except pilot port (500 psi).
Pilot pressure required shift = 20 psi + Port 1 psi / 100.

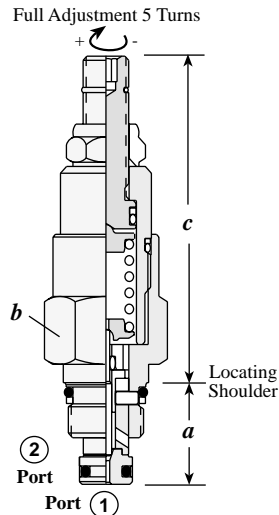
Solenoid Operated and Pilot Control Valves

PILOT STAGE RELIEF, DIRECT ACTING, ADJUSTABLE



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c	
2.5 GPM	RBAE - LAN	T - 8A	.75	7/8"	L: 2.38 C: 2.47 K: 2.66	25/30

OPTION ORDERING INFORMATION



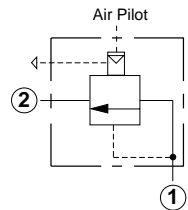
RB A E - * * *

Nominal Capacity	Control**	Adjustment Range	Seal
A 2.5 GPM	L Standard Screw C Concealed K Handknob	A 25 - 3000 psi B 25 - 1500 psi C 25 - 6000 psi D 25 - 800 psi E 25 - 400 psi W 25 - 4500 psi	N Buna-N V Viton

Adjustment Range Options:
 A, B, C, and W are standard set at 1000 psi.
 D Option is standard set at 400 psi.
 E Option is standard set at 200 psi.
 Customer may specify pressure setting.

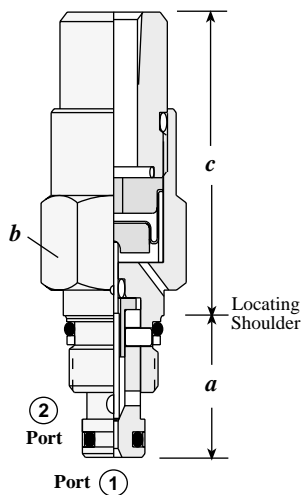
** See page 92 for information on Control Options

PILOT STAGE RELIEF, AIR CONTROLLED, DIRECT ACTING



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c	
2.5 GPM	RBAR - AWN	T - 8A	.75	7/8"	1.60	25/30

OPTION ORDERING INFORMATION



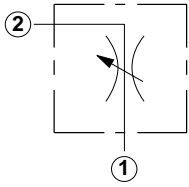
RB A R - * * *

Nominal Capacity	Port	Air Pilot Ratio	Seal
A 2.5 GPM	A 1/8-27 NPTF Pilot Port B SAE-4 Pilot Port D 1/8-28 BSPP Port	W 50:1 Y 75:1	N Buna-N V Viton

Maximum air pilot pressure should not exceed 150 psi.

Solenoid Operated and Pilot Control Valves

PILOT STAGE, ADJUSTABLE FLOW CONTROL



Maximum Orifice	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (lb. ft.)
			a	b	c	
.04 in.	NFAB - KXN	T - 8A	.75	7/8"	1.10	25/30

OPTION ORDERING INFORMATION

