2-Way & 3-Way Hydraulic

Direct Acting Valves
1/8" NPT

General Description:

2-Way & 3-Way hydraulic direct acting valves are specifically designed for use in hydraulic systems. These valves are spool type valves that can withstand a static pressure up to 3000 PSI. All internal parts are compatible with most hydraulic fluids.

Installation
Valves can be mounted in any position. Preferred orientation is with the coil vertical and upright.

Standard Materials of Construction
- Body—Stainless Steel (430F)
- Seals—Metal
- Flange Seal—NBR
- Sleeve Tube—Stainless Steel (304)
- Plunger—Stainless Steel (430FR)
- Stop—Stainless Steel (430FR)
- Springs—Stainless Steel (18-8)
- Shading Ring—Copper
- Spool—Stainless Steel (17-4PH)

Compatible Fluids
- Hydraulic Fluids

Specialty

Electrical Characteristics:

Voltages
- AC—24/60
  120/60–110/50
  240/60–220/50
- DC—12, 24 & 120

Power Consumption
- 10, 14, 21 watts

Coil Classification
- Class F Standard
- Class H available (71211, 71221, 71331)
- Class B Coils Standard on (A11, A12, A13, A15, A16)

Agency Approvals
- UL and CSA approvals are available on valves with applicable coil/enclosure combinations. (Models 71211, 71221 and 71331 only)
- Models A11, A12, A13, A15 & A16 do not carry any agency approvals

Maximum Ambient Temperature
- 185°F

Maximum Allowable Leakage
- Maximum Allowable Internal Seat Leakage at 70° F with MIL-H-5606 oil is 80cc/min at 1000 PSI. (Models 71211, 71221 and 71331)
- Maximum Allowable Internal Seat Leakage at 70° F with MIL-H-5606 oil is 295cc/min at 3000 PSI. (Models A11, A12, A13, A15, A16)
- External — None (All models)

Applications:

- Hydraulic Cylinders
- Lift Trucks
- Machine Tools
- Sky Cranes
- Hydraulic Door Openers

Parker Hannifin Corporation
Fluid Control Division
1 800 825 8305 (1 800 Valve05)
www.parker.com/fcd

2-Way High Pressure Hydraulic Valves - Normally Closed - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI					Max. Media Temp. °F	Seal	Pressure Vessel Number	Reference	
			Min.	Max. Static Pressure (PSI)	Max. Diff Pressure (PSI)	Max. Flow (GPM)	Watt				Coil	Valve
AC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	3000	8.5	21	185	Metal	A12LB13002	*	D28
1/8	7/64	0.21	0	1000	900	6.5	10	185	Metal	71211SN1MM00	7	D26
DC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	3000	8.5	14	185	Metal	A126LB13001	*	D28
1/8	7/64	0.21	0	1000	900	6.5	10	185	Metal	71211SN1MM00	7	D26

2-Way High Pressure Hydraulic Valves - Normally Open - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI					Max. Media Temp. °F	Seal	Pressure Vessel Number	Reference	
			Min.	Max. Static Pressure (PSI)	Max. Diff Pressure (PSI)	Max. Flow (GPM)	Watt				Coil	Valve
AC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	3000	9.0	21	185	Metal	A11LB13002	*	D28
1/8	7/64	0.21	0	1000	700	5.7	10	185	Metal	71221SN1MM00	7	D26
DC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	3000	9.0	14	185	Metal	A116LB13001	*	D28
1/8	7/64	0.21	0	1000	700	5.7	10	185	Metal	71221SN1MM00	7	D26

3-Way High Pressure Hydraulic Valves - Normally Closed - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI					Max. Media Temp. °F	Seal	Pressure Vessel Number	Reference	
			Min.	Max. Static Pressure (PSI)	Max. Diff Pressure (PSI)	Max. Flow (GPM)	Watt				Coil	Valve
AC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	1000	5.7	21	185	Metal	A13LB13002	*	D29
1/8	3/32	0.15	0	3000	2000	7.0	21	185	Metal	A13LB13002	*	D29
DC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	1000	5.7	14	185	Metal	A136LB13001	*	D29
1/8	3/32	0.15	0	3000	2000	7.0	14	185	Metal	A136LB13001	*	D29

* For coil information see chart on bottom of the next page.

Parker Hannifin Corporation
Fluid Control Division
1 800 825 8305 (1 800 Valve05)
www.parker.com/fcd

3-Way High Pressure Hydraulic Valves - Normally Open - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI					Max. Media Temp. °F	Seal	Pressure Vessel Number	Reference	
			Min.	Max. Static Pressure (PSI)	Max. Diff Pressure (PSI)	Max. Flow (GPM)	Watt				Coil	Valve
AC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	3000	9.0	21	185	Metal	A15LB13002	*	D29
1/8	3/32	0.15	0	3000	3000	8.5	21	185	Metal	A15LB13002	*	D29
DC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	3000	9.0	14	185	Metal	A156LB13001	*	D29
1/8	3/32	0.15	0	3000	3000	8.5	14	185	Metal	A156LB13001	*	D29

3-Way High Pressure Hydraulic Valves - Directional Control - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI					Max. Media Temp. °F	Seal	Pressure Vessel Number	Reference	
			Min.	Max. Static Pressure (PSI)	Max. Diff Pressure (PSI)	Max. Flow (GPM)	Watt				Coil	Valve
AC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	2000	7.0	21	185	Metal	A16LB13002	*	D29
1/8	3/32	0.15	0	3000	2000	7.0	21	185	Metal	A16LB13002	*	D29
DC TECHNICAL SPECIFICATIONS												
1/8	3/32	0.15	0	3000	1000	7.0	14	185	Metal	A166LB13001	*	D29
1/8	3/32	0.15	0	3000	2000	7.0	14	185	Metal	A166LB13001	*	D29

3-Way High Pressure Hydraulic Valves - Universal - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI					Max. Media Temp. °F	Seal	Pressure Vessel Number	Reference	
			Min.	Max. Static Pressure (PSI)	Max. Diff. Pressure (PSI)	Max. Flow (GPM)	Watt				Coil	Valve
AC TECHNICAL SPECIFICATIONS												
1/8	7/64	0.21	0	1000	See Table 1 (Top of next page)		10	185	Metal	71331SN1MM00	7	D27
DC TECHNICAL SPECIFICATIONS												
1/8	7/64	0.21	0	1000	See Table 1 (Top of next page)		10	185	Metal	71331SN1MM00	7	D27

Figure 1*

Voltage	**24/60**	**120/60**	**240/60**	**12VDC**	**24VDC**
Coil Code	AB2A44	AB6A46	AB8A48	DC1A22	DC2A23
Coil Part Number*	AB720S24	AB728S24	AB731S24	A7724F24	A7727F24

*When ordering a replacement coil, use Coil Part Number (not Coil Code)

*Select the Series A pressure vessel model number as shown above and follow with the appropriate coil/enclosure part number based or required voltage from Fig. 1
Example A15LB13002 for 120/60 becomes part number A15LB13002AB6A46
Example A166LB13001 for 12VDC becomes part number A166LB13001DC1A22

Table 1:
3-Way High Pressure Hydraulic Valves (Series A)
Maximum Permissible Flow & Pressure Differentials

Valve Function	Flow Path	Maximum Pressure Differential (PSI)	Maximum Flow (GPM)
3-Way Normally Closed	Port 1 to Port 2	1000	5.7
	Port 2 to Port 3	1000	7.0
3-Way Normally Open	Port 3 to Port 2	3000	9.0
	Port 2 to Port 1	3000	8.5
3-Way Universal (Directional)	Port 2 to Port 3	2000	7.0
	Port 2 to Port 1	2000	7.0

Flow Limits
The spool in A10 Series valves will fail to shift when the flow exceeds the maximum rated value. Each catalog listing indicates the flow and pressure drop for which these valves will operate without malfunction.

The static pressure listed for each valve will not adversely affect valve operation as long as the rated flows and pressure differentials are not exceeded. The maximum flows (GPM) and pressure differentials (PSI) are based on Mil-H-5606A hydraulic oil at 80°F.

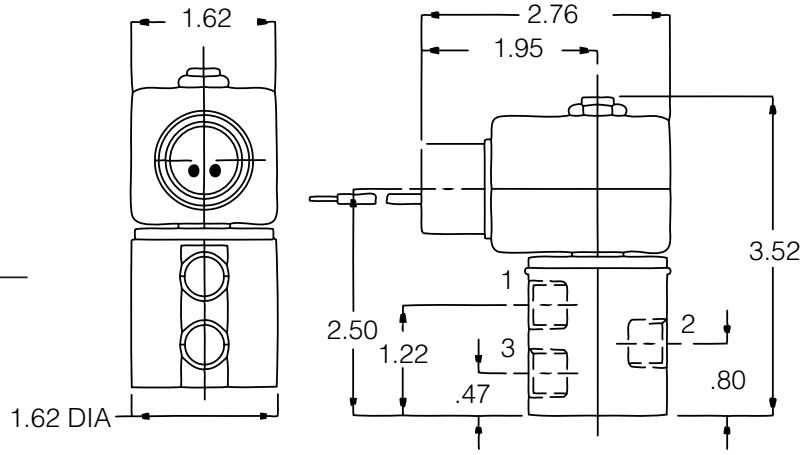
Response Times: AC = Approximately 4-8 ms to open or close
DC = Approximately 15-30 ms to open, 15-25 ms to close.
Operating Speed: Up to 300 cycles per minute

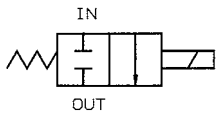
Specialty

Valve Reference D26

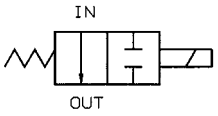
Port Identification:

71211	71221
1-IN	1-Plug
2-OUT	2-OUT
3-Plug	3-IN

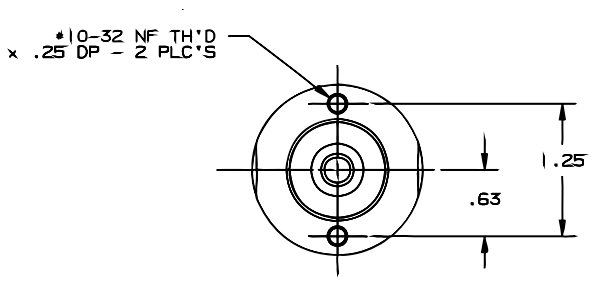




71211
2-Way Normally Closed

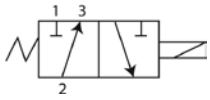


71221
2-Way Normally Open

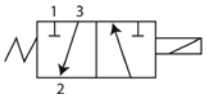


Parker Hannifin Corporation
Fluid Control Division
1 800 825 8305 (1 800 Valve05)
www.parker.com/fcd

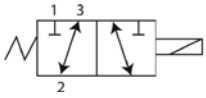
Valve Reference D27



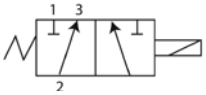
3-Way Normally Closed



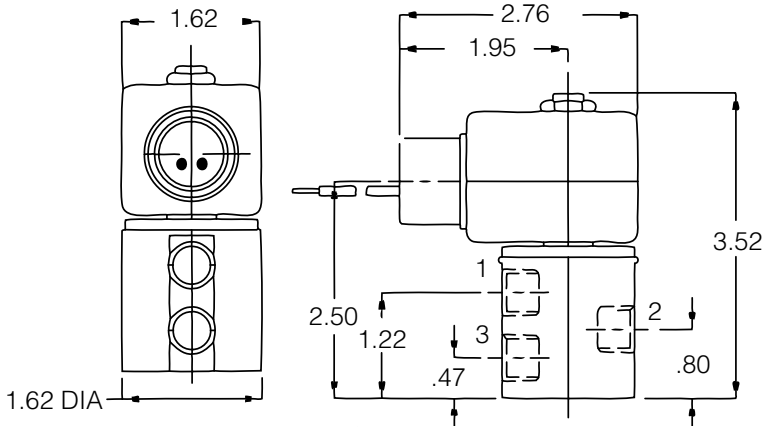
3-Way Normally Open

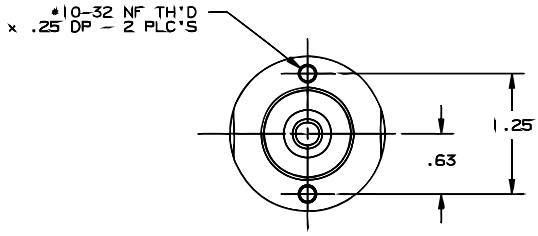


3-Way Universal



3-Way Diverting

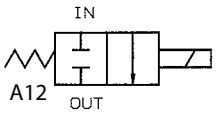




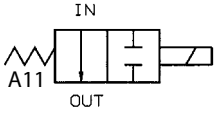
Port Identification:				
	NC	NO	Universal	Directional Control
1	Pressure	Exhaust	NC	NC
2	Cylinder	Cylinder	Cylinder	IN
3	Pressure	Pressure	NO	NO

Specialty

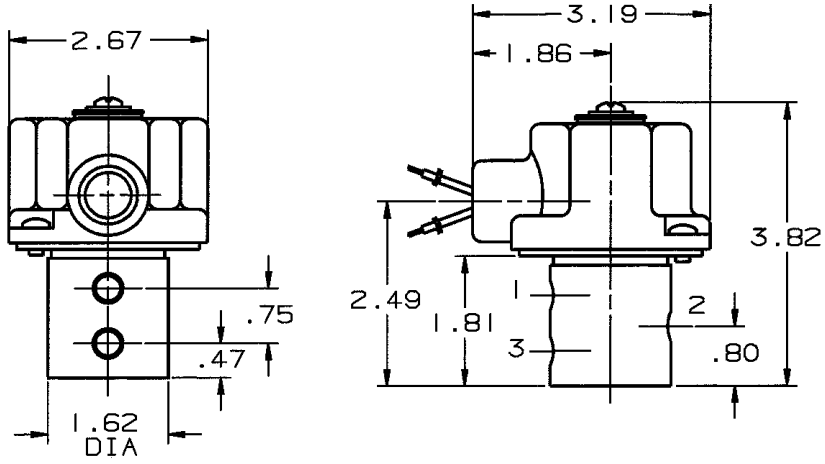
Valve Reference D28

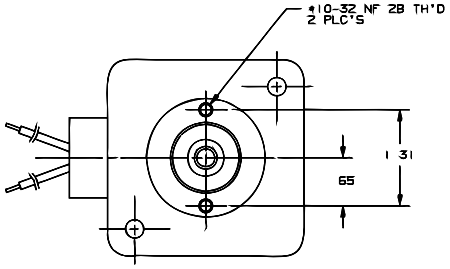


2-Way Normally Closed



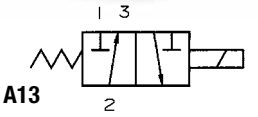
2-Way Normally Open



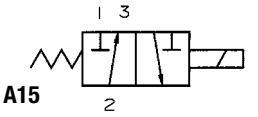


Port Identification	
A11	A12
1-plugged	1-IN
2-OUT	2-OUT
3-IN	3-Plugged

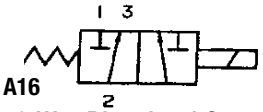
Valve Reference D29



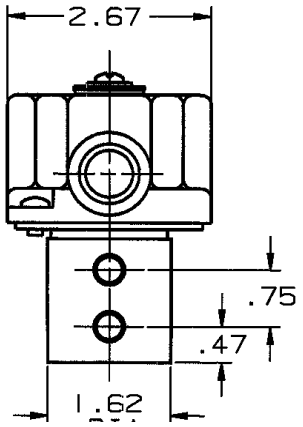
A13
3-Way Normally Closed

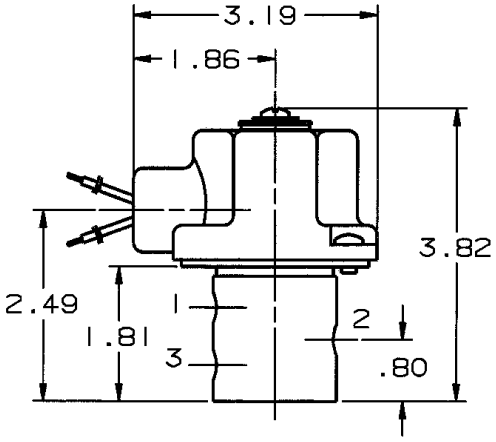


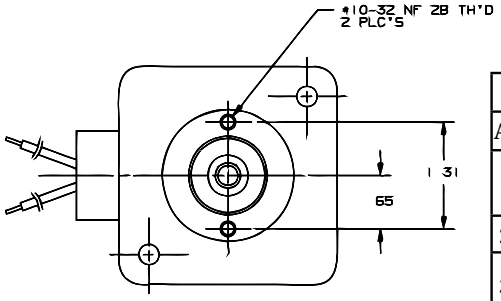
A15
3-Way Normally Open



A16
3-Way Directional Control







Port Identification		
A13	**A15**	**A16**
1-IN	**1-Exhaust**	**1-Normally Closed**
2-Cylinder	**2-Cylinder**	**2-In**
3-Exhaust	**3-IN**	**3-Normally Open**

Notes

Parker Hannifin Corporation
Fluid Control Division
1 800 825 8305 (1 800 Valve05)
www.parker.com/fcd