

# Valves

## High Pressure OEM Manipulator Valves

Series 6900, 6940

Patent# 3,014,499

### Features

- ▶ Original Shear-Seal® technology
- ▶ Low pressure drop
- ▶ Tolerates contaminants
- ▶ Spring return option
- ▶ Special flow pattern for OEM designs

### Applications

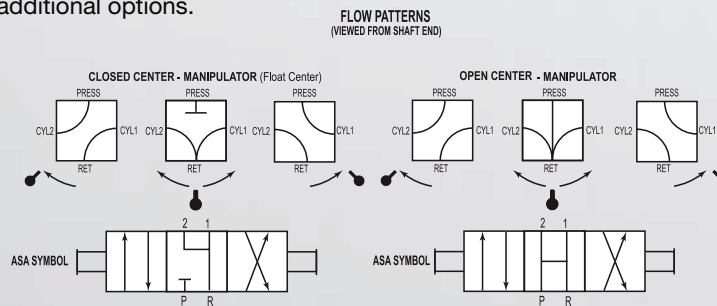
- ▶ Hydraulic presses
- ▶ Military equipment
- ▶ Paper mill controls
- ▶ Pipe forming
- ▶ Railroad maintenance equipment



### General Specifications\*

<b>Working Pressure:</b>	Hydraulic fluid up to 3000 psi (206 bar)	<b>Media Temperature Range:</b>	-40° to +250°F (-40° to +121°C)
<b>Flow Capacity, Cv:</b>	See table	<b>Wetted Material:</b>	
<b>Back Pressure:</b>	Must not exceed 250 psi (17.2 Bar) at return port for satisfactory operation	<b>Rotor:</b>	Hard anodized aluminum
<b>Pressure Drop:</b>	14 psi (0.96 bar) at 20 ft/sec See Supplemental Guide for more detailed information	<b>Pressure Seals:</b>	Brass
<b>Proof Pressure:</b>	1-1/2 times working pressure except at return port	<b>Shaft:</b>	Stainless steel
<b>Burst Pressure:</b>	2-1/2 times working pressure except at return port (3000 psi [206 bar])	<b>Body Housing:</b>	Anodized aluminum
		<b>Bearings:</b>	Carbon steel
		<b>Standard O-rings:</b>	Buna N, others available
		<b>Back-up Rings:</b>	Teflon®

\* See product configurator for additional options.



Main Valve Port Size	Flow Capacity (Approx.) Service: Oil			Min. Flow Passage Dia.	Cv Factor	Approx. Shipping Weight lbs (kgs)
	20 ft/sec gpm (l/min)	40 ft/sec gpm (l/min)	60 ft/sec gpm (l/min)			
1/4" & 3/8"	5 (19)	10 (38)	Use	5/16"	1.56	1 1/2 (0.7)
1/2" & 3/4"	14 (53)	28 (106)		17/32"	4.80	3 (1.4)
1"	25 (95)	51 (190)	Duty	23/32"	9.20	10 1/2 (4.6)
1-1/2"	62 (235)	124 (471)	Valve	1-1/8"	24.0	20 (9.1)

**Barksdale**

CONTROL PRODUCTS

Barksdale, Inc./Barksdale GmbH  
A Subsidiary of Crane Co.

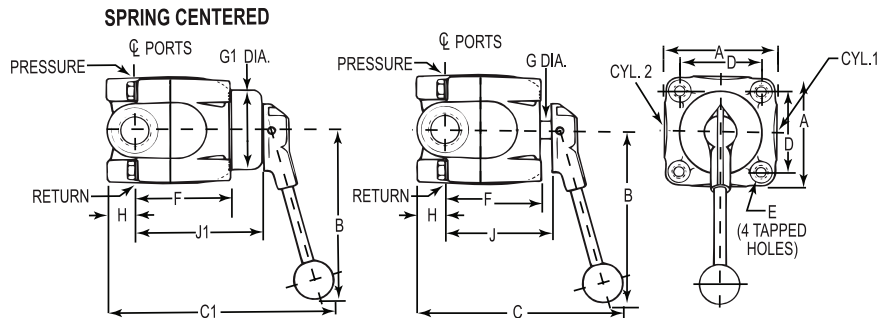


# High Pressure OEM Manipulator Valves

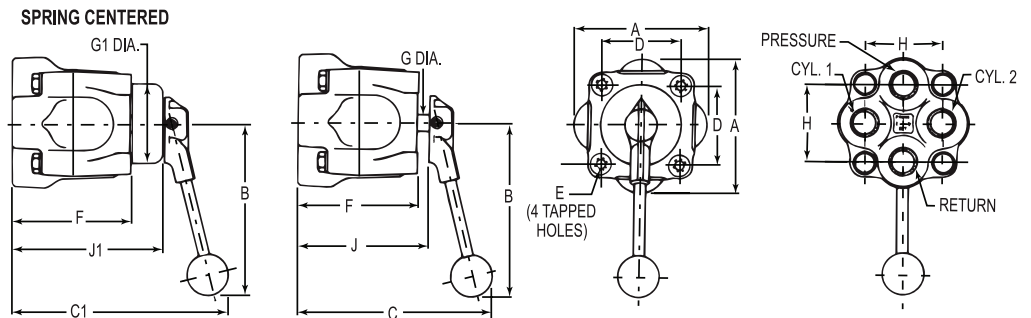
## Series 6900, 6940

### Technical Drawings

6900 Series



6940 Series



6900 Series In-Line (side) Porting

Port Size NPT	A	B	C	C1	D	E	F	G Dia.	G1 Dia.	H	J	J1
1/4" & 3/8"	2.63 (66.8)	5.44 (138)	6.38 (161.9)	6.718 (170.6)	1.81(46.0)	5/16 - 18 NC	2.31(58.7)	0.44 (11.2)	1.91(48.5)	0.56 (14.2)	2.66 (67.6)	3.03 (77.0)
1/2" & 3/4"	3.5 (88.9)	5.44 (138)	7.37 (187)	7.93 (201)	2.56 (65.0)	3/8 - 16 NC	3.03 (77.0)	0.56 (14.2)	2.56 (65.0)	0.88 (22.4)	3.38 (85.9)	3.94 (100)
1"	4.5 (114)	8.44 (214)	8.16 (207)	9.03 (229.3)	3.31 (84.1)	1/2 - 13 NC	3.59 (91.2)	0.75 (19.1)	3.38 (86)	1.06 (26.9)	3.94 (100)	4.81 (122)
1-1/2"	6.38 (162)	10.35 (263)	9.66 (245)	10.53 (268)	4.75 (121)	3/4 - 10 NC	4.6 (118)	0.88 (22.4)	3.38 (86)	1.34 (34.0)	5.03 (128)	5.91 (150)

6940 Series Straight (bottom) Porting

Port Size NPT	A	B	C	C1	D	E	F	G Dia.	G1 Dia.	H	J	J1
1/4" & 3/8"	2.63 (66.8)	5.44 (138)	6.13 (156)	6.50 (165)	1.81(46.0)	5/16 - 18 NC	2.66 (67.6)	0.44 (11.2)	1.91(48.5)	1.50 (38.1)	3.00 (76.2)	3.38 (85.9)
1/2" & 3/4"	4.19 (106)	5.44 (138)	7.34 (186)	7.91 (201)	2.56 (65.0)	3/8 - 16 NC	3.88 (98.6)	0.56 (14.2)	2.56 (65.0)	2.50 (63.5)	4.22 (107)	4.78 (121)

Dimensions in inches (mm)

### Product Configurator

Example: 690 2 R 3 H C 3

#### Series

- 690** Regular (side) porting, manipulator flow pattern
- 694 Straight (bottom) porting, manipulator flow pattern

#### Port Size

- 1 1/4" NPT ports
- 2** 3/8" NPT ports
- 3 1/2" NPT ports
- 4 3/4" NPT ports
- 5 1" NPT ports (Series 690 only)
- 7 1-1/2" NPT ports (Series 690 only)

#### Style

- R** Regular (side) porting (Series 690)
- S Straight (bottom) porting (Series 694)

\* Highlighted options represent those most frequently used. Select these common options for improved availability. (5/21)

#### Pressure

- 3** 3,000 psi

#### Working Media

- H** Hydraulic oil

#### Flow Pattern

- C** Closed center manipulator (float center)
- O Open center (tandem center)

#### Position

- 3** 3-position

#### Options

- Zxx See Supplemental Guide for complete list

#### Options

- A SAE Porting
- MC Spring centering\*
- NF Non-interflow (port size 1/4" and 3/8" NPT only)

\* For 1" ported pressure rating 2,500 psi  
Not available on 1-1/2" ported valves.