



SV-12 Valve Specifications **Table of Contents**

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All PacSeal Hydraulics' SV Directional Control Valves are designed with ShearFlo® metal-to-metal sealing technology. ShearFlo® sealing technology features:

- High cycle life and anti-wear design is suitable for critical service applications, including contaminated fluids.
- Leak proof, contaminant resistant metal-to-metal seal is accomplished by lapping and polishing hardened stainless steel sealing elements to exacting standards of finish and flatness.
- The sealing elements are spring preloaded and pressure energized, which maintains contact between the two sealing surfaces at all times.

All SV Valves are tested to PacSeal's strict quality control standards to ensure proper function and reliability. Every ShearFlo® sealing component in a repair kit is inspected to ensure trouble-free performance after field maintenance and repair.

PacSeal Hydraulics' rotary SV Directional Control Valves direct fluid flow to one or two cylinder ports, based on the selected rotor and detent combination, as specified in the "Valve Shift Options" table.

The SV valves' modular design accommodates various operator options (manual and remote with manual override) to suit the application at hand. The options available for manual operation are as follows:

- Detented (2 or 3-position)
- Spring Centered (3-position)
- Pin Lock Detent (3-position)

The remote operator options with manual override are available in pneumatic or hydraulic with 2 or 3 positions as follows:

- Actuator Cylinder bracket mounted to valve
- SVX Integral Actuator assembled atop the valve providing higher efficiency and immediate actuation

Various porting options provide further customization, as follows:

- Inline
- Bottom
- Subplate
- Manifold

General Specifications

Port Size	1/8 in. NPT or SAE ORB
Working Pressure Options (Liquid)	3000 or 6000 psi
Working Pressure Options (Gas)	2000 or 4000 psi
Return Port Pressure	250 psi (Max) ¹
Proof Pressure	1.5X Working Pressure
Burst Pressure	2X Working Pressure
Cv Factor	0.34
Rated Flow	3.75 gpm
Temp Rating	-40 to 250°F
Fluid Media	Hydraulic oil or lubricated water ²
Weight	See Installation Drawings
Materials	
ShearFlo Sealing Components (Rotor and Seal Rings)	400 Series SS Hardened ²
Shaft	400 Series SS
Body	400 Series SS
Housing	Carbon Steel
Handle, Detent Disc and Spacers, Hardware	Plated Carbon Steel
O-rings	Buna-N (N), Viton (V), or EPR (E)
Backup Rings	Teflon

¹ Full rated pressure (3000 or 6000 psi) with All Blocked Rotor option

² For water based media, special alloy seal rings may be required for optimum performance and durability - Contact PacSeal for details

Valve Shift Options

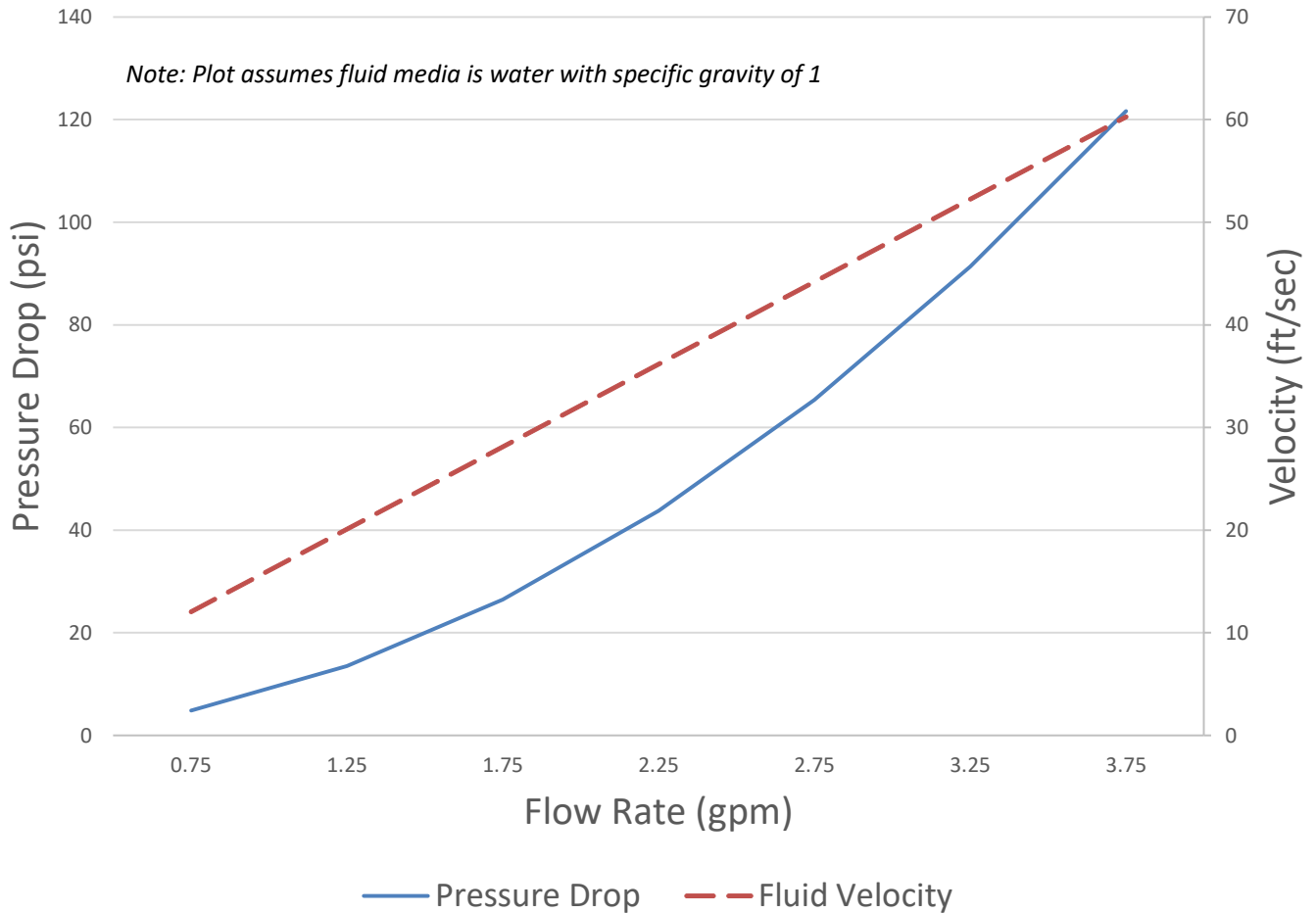
Detent Pattern	Valve Options
3-Position (4-way)	All Options
2-Position 90° (4-way)	All Options
2-Position 45° CW or CCW (3-way)	Selector, Manipulator, Open Center

Rotor Flow Options

Rotor Configuration	Center Position	CW or CCW Position
Manipulator	Cylinders drain to tank and pressure port blocked	Operates a cylinder port while the opposite port is returned to tank
Selector	Return port is open while cylinder and pressure ports are blocked	Operates a cylinder port while the opposite port is returned to tank
Bypass	Return port is open while cylinder and pressure ports are blocked	Operates a cylinder port while the opposite port is blocked
Open Center	Cylinder ports blocked while pressure and return ports are connected	Operates a cylinder port while the opposite port is returned to tank
All Blocked	All ports blocked. Case Drain Required	Operates a cylinder port while the opposite port is returned to tank



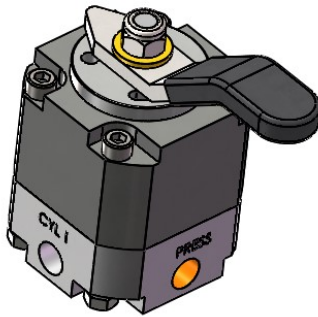
SV-12 Valve Pressure Drop and Fluid Velocity



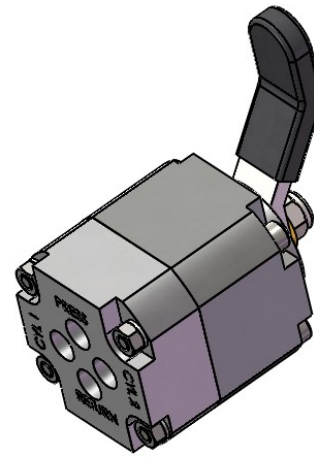
Model Number Configurator

Basic Size	Port Size	Type of Ports	Pressure Rating	Port Location	Bolts	Rotor Flow Pattern	Valve/Actuator Postions	Handle	O-Ring
SV12-	1 1/8"	N NPT	3 3000	I Inline / Side	S Std Short	S Selector	1 3-Pos.	M Standard Manual	N Buna-N
		S SAE	6 6000	B Bottom	L Long	O Open Center	2 -2 Pos. 90°	S Spring Centered	V Viton
		M Manifold			P Panel Mount	M Manipulator	3 2-Pos. 45° CW	L Pin Lock Detent ¹	E EPR
					N None ²	B Bypass	4 2-Pos. 45° CCW	W Wing Handle	
					A All Blocked ¹				

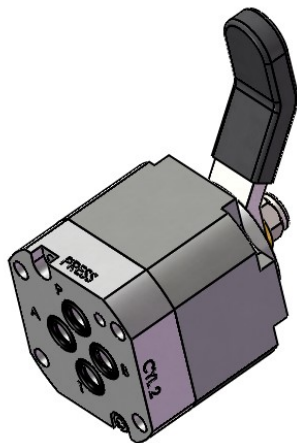
Notes: ¹ Not a standard Option
² For Manifold Mount Option



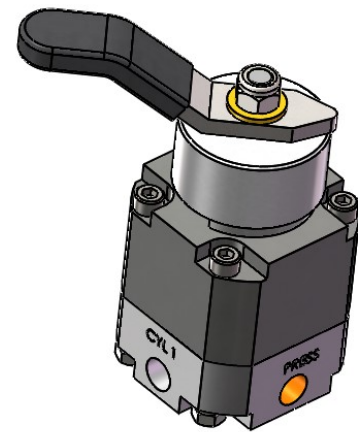
SV-12 Inline Ported
 (Example: SV25-1N3ISS1MN)



SV-12 Bottom Ported
 (Example: SV12-1N3BSS1MN)



SV-12 Manifold Ported
 (Example: SV12-1M3BSS1MN)



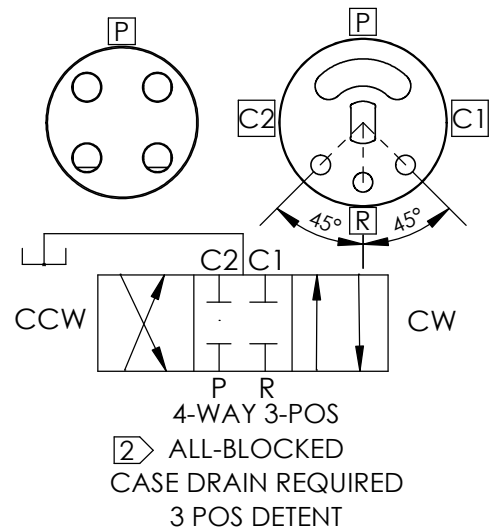
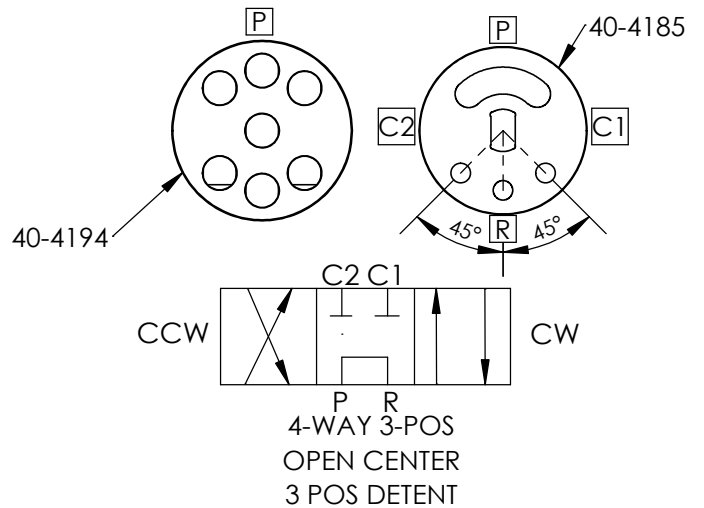
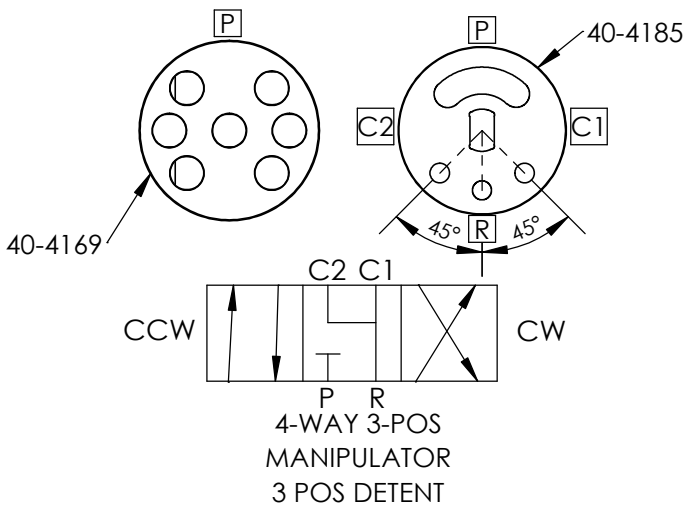
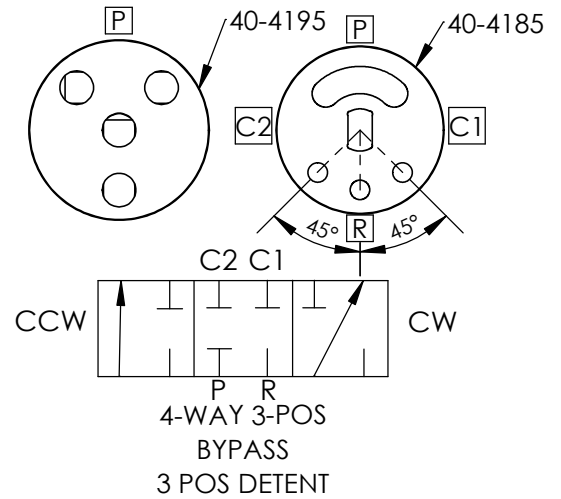
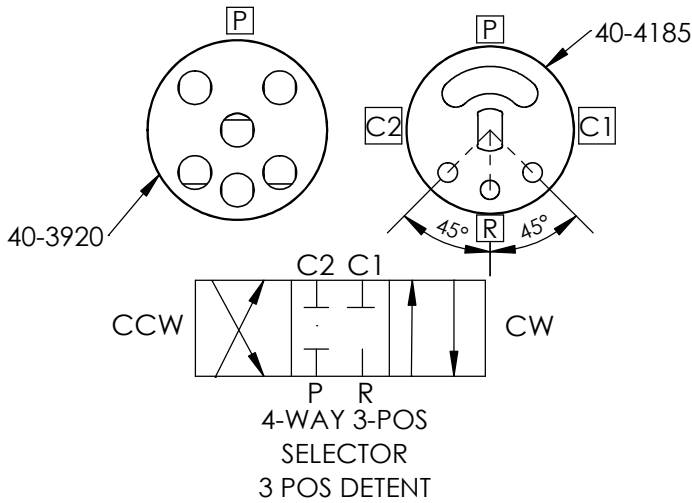
SV-12 with Spring Centered Operator
 Example: SV12-1N3ISS1SN)



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			A	1
				SHEET 4 OF 9

Notes:

- 1. Rotor and Detent Disc Part No.'s displayed
- ② Not a standard stock item



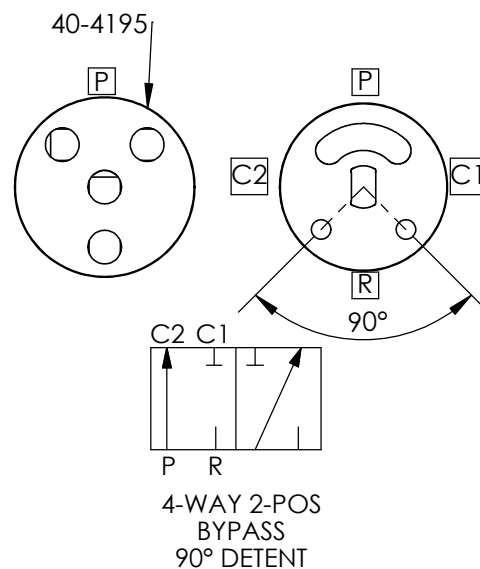
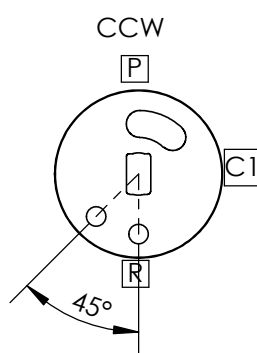
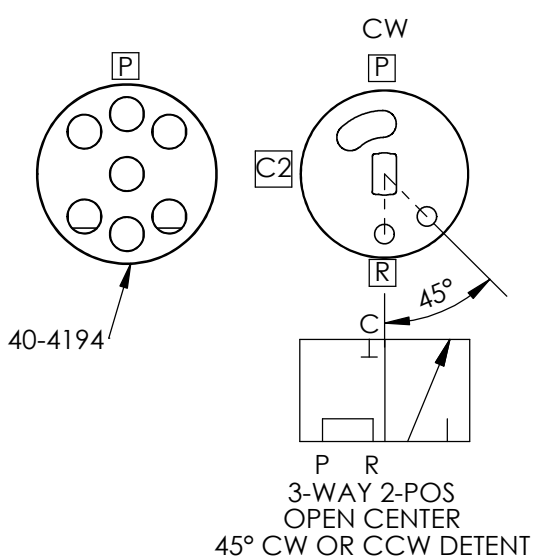
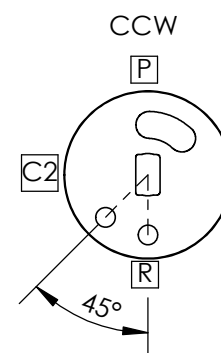
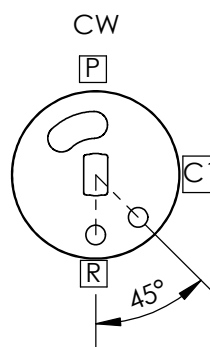
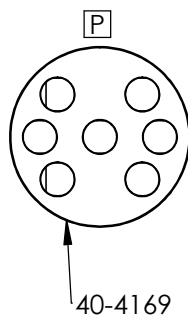
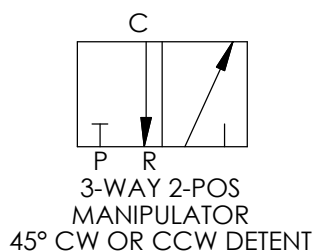
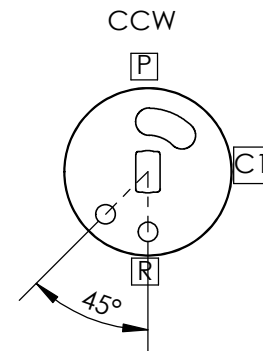
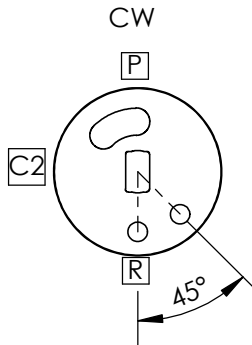
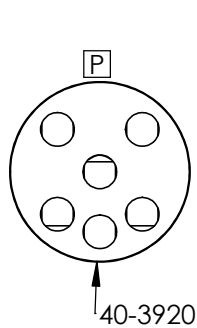
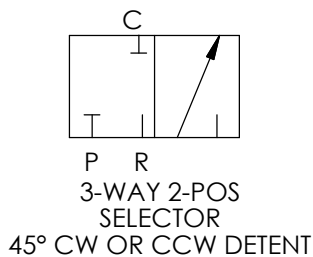
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TITLE
**SV-12 Rotor Flow and
 Detent Disc
 3-Position Options**

SIZE A	REV 1
SHEET 5 OF 9	

Notes:

1. Rotor and Detent Disc Part No.'s displayed



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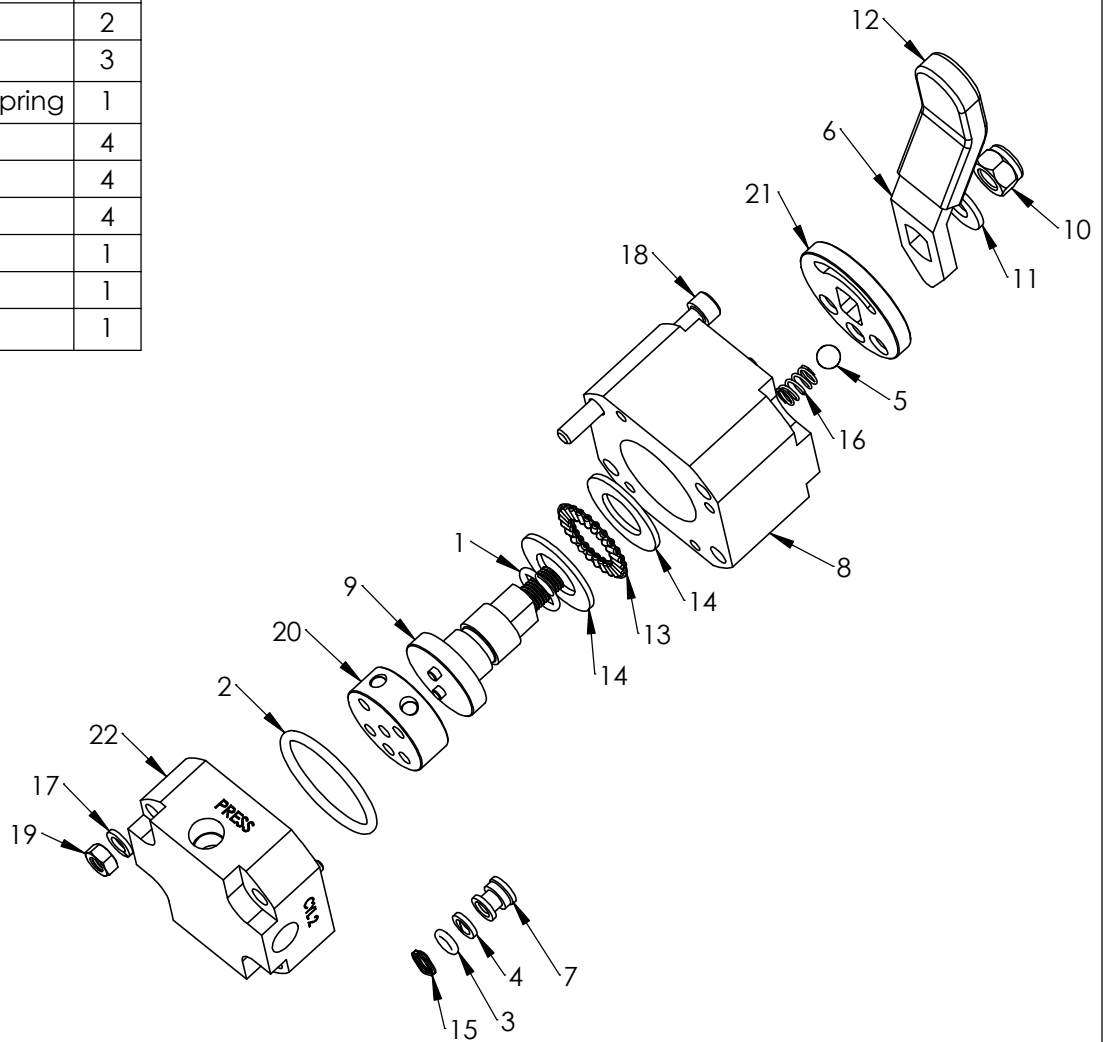
TITLE
**SV-12 Rotor Flow and
Detent Disc
2-Position Options**

SIZE A	REV 1
SHEET 6 OF 9	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	23-1343	O-Ring	1
2	23-1471	O-Ring	1
3	23-1517	O-Ring	3
4	23-1617	Backup Ring	3
5	40-0048	Ball, Bearing	1
6	40-2961	Handle, Manual	1
7	40-3921	Seal Ring	3
8	40-4183	Housing	1
9	40-4184	Shaft	1
10	50-0091	Locknut	1
11	50-0106	Washer, Shaft	1
12	50-0238	Grip, Handle	1
13	50-0555	Thrust Bearing	1
14	50-0556	Thrust Washer	2
15	50-0558	Wave Spring	3
16	50-0560	Compression Spring	1
17	50-0604	Lock Washer	4
18	50-0606	Screw	4
19	50-0613	Nut	4
20	Note 2	Rotor	1
21	Note 2	Detent Disc	1
22	Note 3	Body	1

Notes:

1. Standard Inline Ported SV-12 shown for illustration purposes. (Refer to Model Configuration for options.)
2. See sheets 5-6 "Rotor and Detent Shift Options" for replacement parts.
3. See sheet 8 "SV-12 Porting Options" for Body option part numbers.
4. See sheets 9 for other spring centered option.
5. Contact PacSeal for Viton or EPR O-rings.
6. Contact PacSeal for Panel Mount option.
7. Refer to SV-12 Maintenance Instructions for more details.



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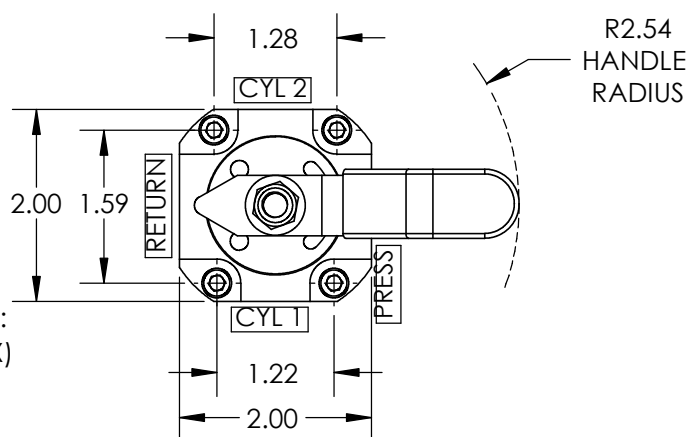
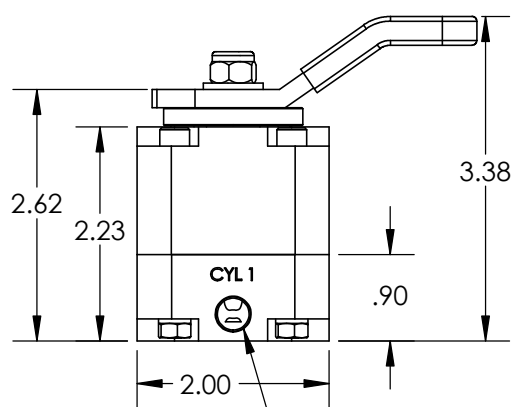
TITLE SV-12
General Assembly Overview

SIZE A	REV 1
SHEET 7 OF 9	

NOTES:

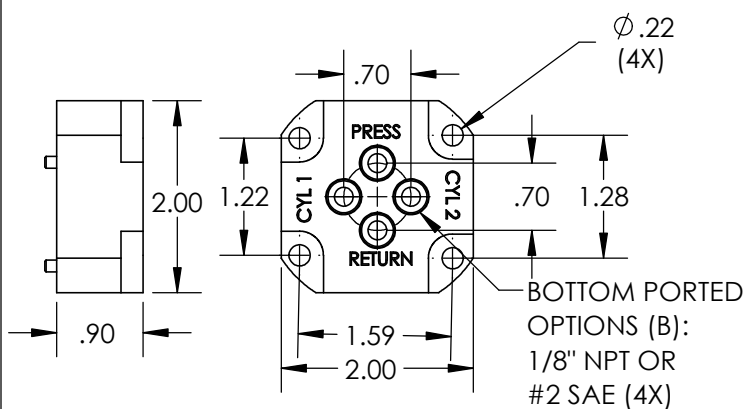
1. BOLT LOCATIONS ARE BASED UPON D03 MOUNTING

**NPT or SAE Inline Ported (I)
with Manual Operator**



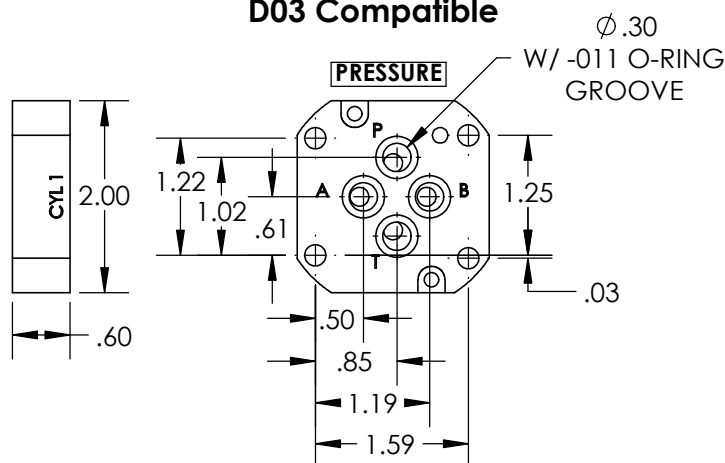
INLINE PORTED OPTIONS (I):
1/8" NPT OR #8 SAE ORB(4X)

NPT or SAE Bottom Ported (B)



BOTTOM PORTED
OPTIONS (B):
1/8" NPT OR
#2 SAE (4X)

**Manifold Ported (M)
D03 Compatible**



Body Option Part Numbers		
Body Type	NPT Body Part No.	SAE Body Part No.
Inline (I)	40-4196	Contact Pacseal
Bottom (B)	40-4197	Contact Pacseal
Manifold (M)	40-4182	

Weight (lb.) of Valve Porting Options	
Inline (I)	2.4
Bottom (B)	2.4
Manifold (M)	2



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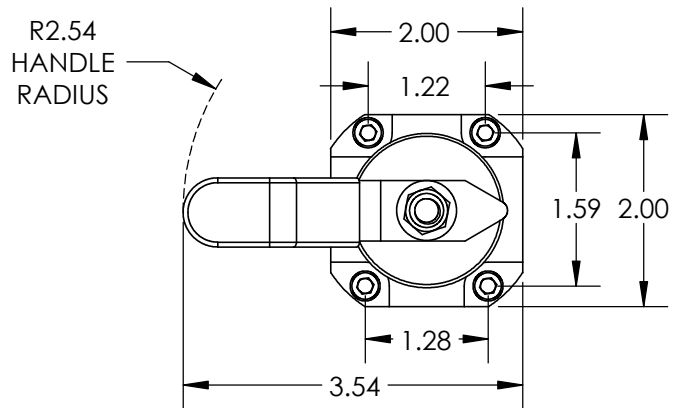
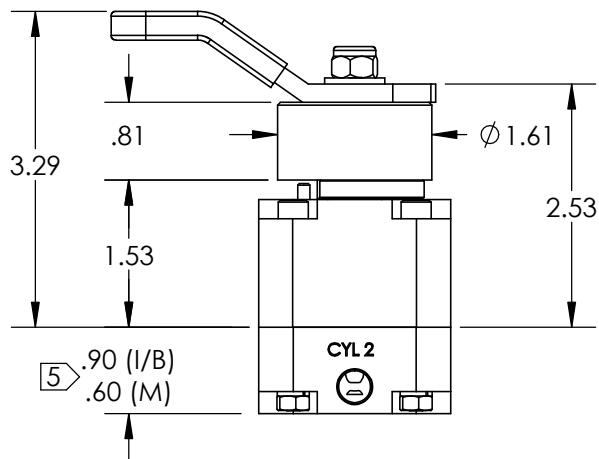
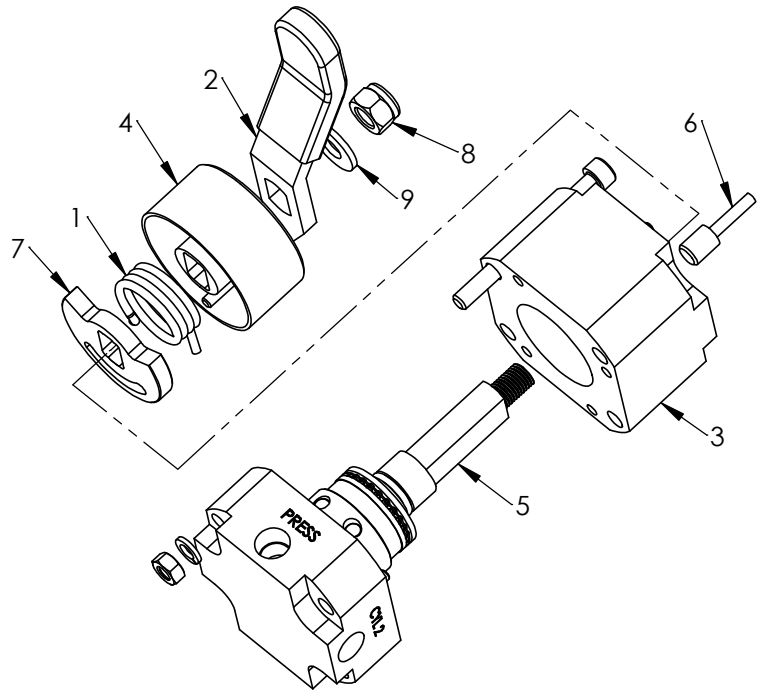
TITLE
**SV-12 Porting Options
with Manual Operator
Installation Drawing**

SIZE A	REV 1
SHEET 8 OF 9	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	40-4009	Torsion Spring	1
2	40-4179	Handle	1
3	40-4183	Housing	1
4	40-4201	Housing, Spring	1
5	40-4202	Shaft	1
6	40-4263	Drive Pin	1
7	40-4264	Detent Disc	1
8	50-0091	Locknut	1
9	50-0106	Washer, Shaft	1

Notes:

1. Spring Centered operator centers the rotor after manual shifting.
2. Retrofitting an existing valve is not an option.
3. Working Pressure (Liquid) - 3000 psi
4. Working Pressure (Gas) - 2000 psi
5. See "SV-12 Porting Options with Manual Operator Installation Drawing" (Sheet 8) for other porting details.



Weight (lb.) of Valve Porting Options	
Inline (I)	2.6
Bottom (B)	2.6
Manifold (M)	2.2



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TITLE SV-12 Spring Centered Operator Installation and Assembly Drawing

SIZE	REV
A	1
SHEET 9 OF 9	