

# SV-150 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 accomodates 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 Sp	pecifications			
Port Size	1-1/2 in. NPT or SAE ORB			
Working Pressure Options (Liquid) Working Pressure	3000 or 5000 psi			
Working Pressure Options (Gas)	2000 or 4000 psi			
Return Port Pressure	250 psi (Max) <sup>1</sup>			
Proof Pressure	1.5X Working Pressure			
Burst Pressure	2X Working Pressure			
Cv Factor	21.0			
Rated Flow	180 gpm			
Temp Rating	-40 to 250°F			
Leak Rate	0-1 drip/min.			
	Hydraulic oil or			
Fluid Media	lubricated water <sup>2</sup>			
Weight	See Installation Drawings			
	erials			
ShearFlo Sealing	Stainless Steel			
Components (Rotor and Seal Rings)	Hardened <sup>2</sup>			
Shaft Shaft	Stainless Steel			
Body	Stainless Steel			
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			
Full rated pressure (3000 or 6000 psi) with All				

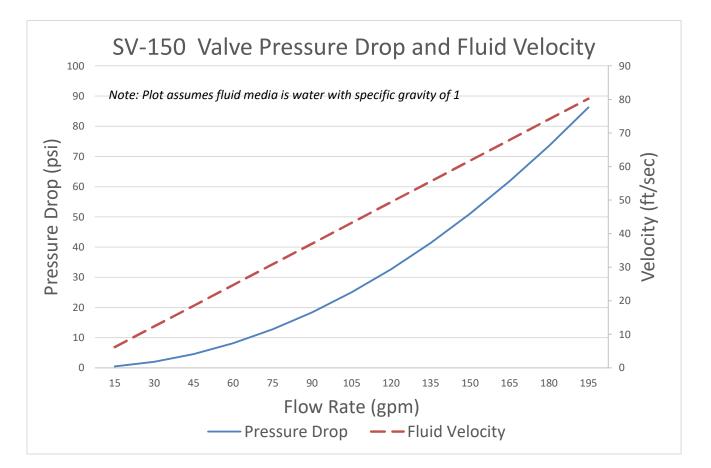
Blocked Rotor option

<sup>2</sup>For water based media, special alloy seal rings may be required - Contact PacSeal for details

Valve Shift Options					
<u>Detent Pattern</u>	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				

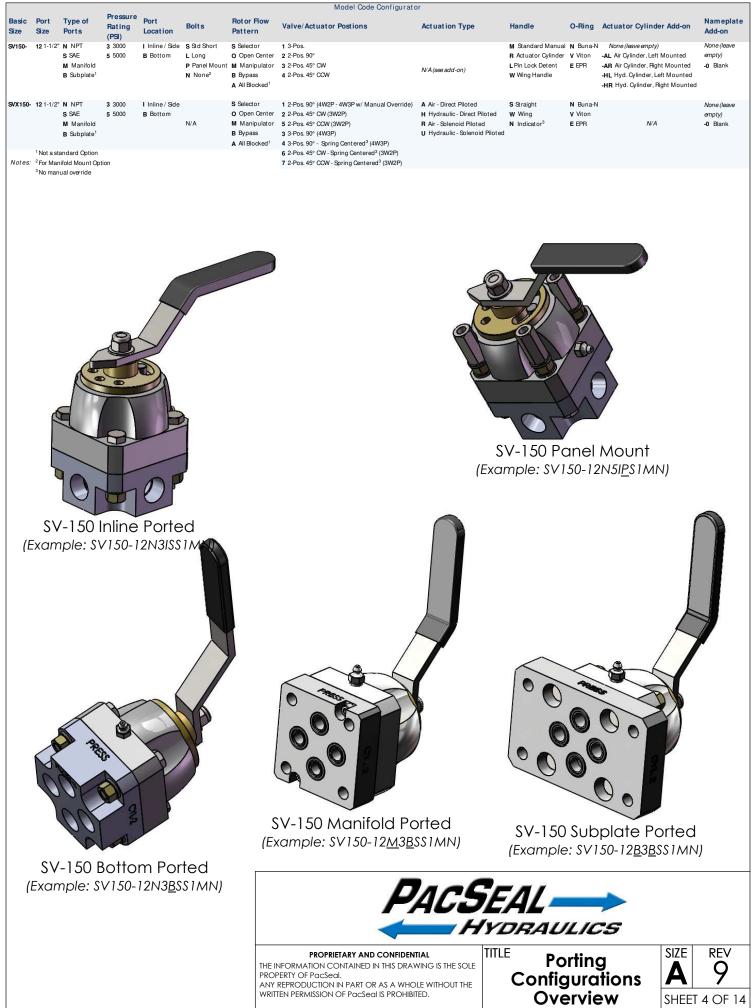
	Rotor Flow Options					
<u>Rotor</u> Configuration	Center Position	CW or CCW Position				
Manipulator	Cylinders drain to tank and pressure port blocked	Operates a cylinder port while the opposite port is returned to tank				
Selector	Return port is open while cylinder and pressure ports are blocked	Operates 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-150 Handle Torque (lbin.)							
Rotor Type	<u>At 1500 psi</u> Supply Pressure	<u>At 3000 psi</u> Supply Pressure	<u>At 5000 psi</u> Supply Pressure				
Selector	300	420	480				
Bypass*	550	720	900				

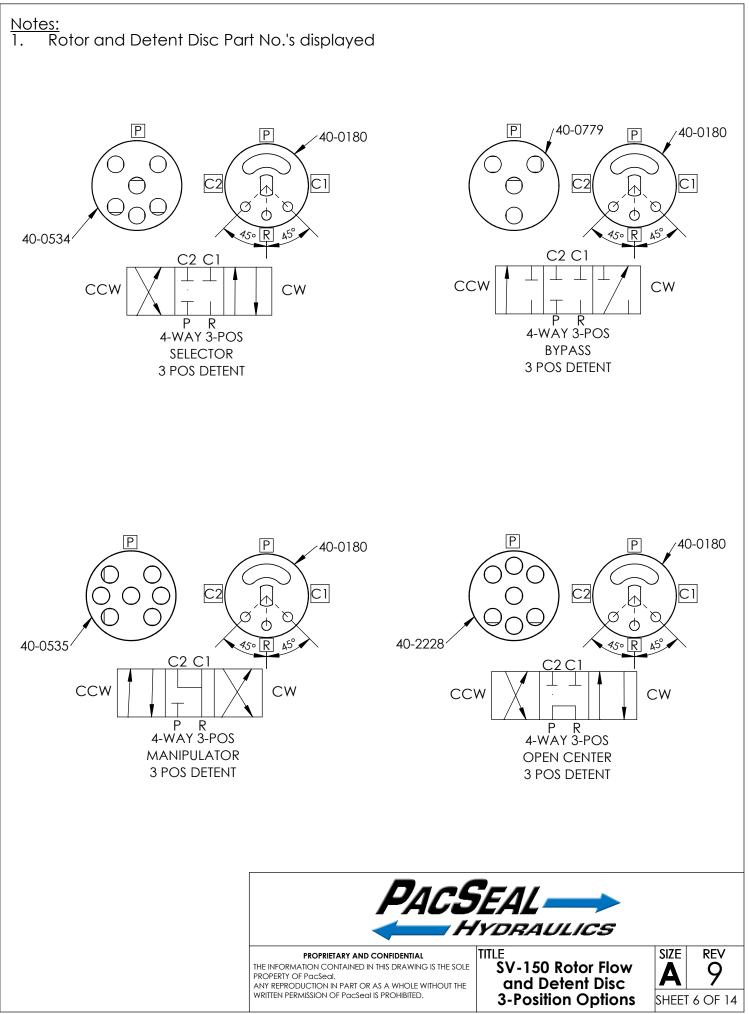
\*Note: Higher torque is a result of having two supply pressures from C1 and C2

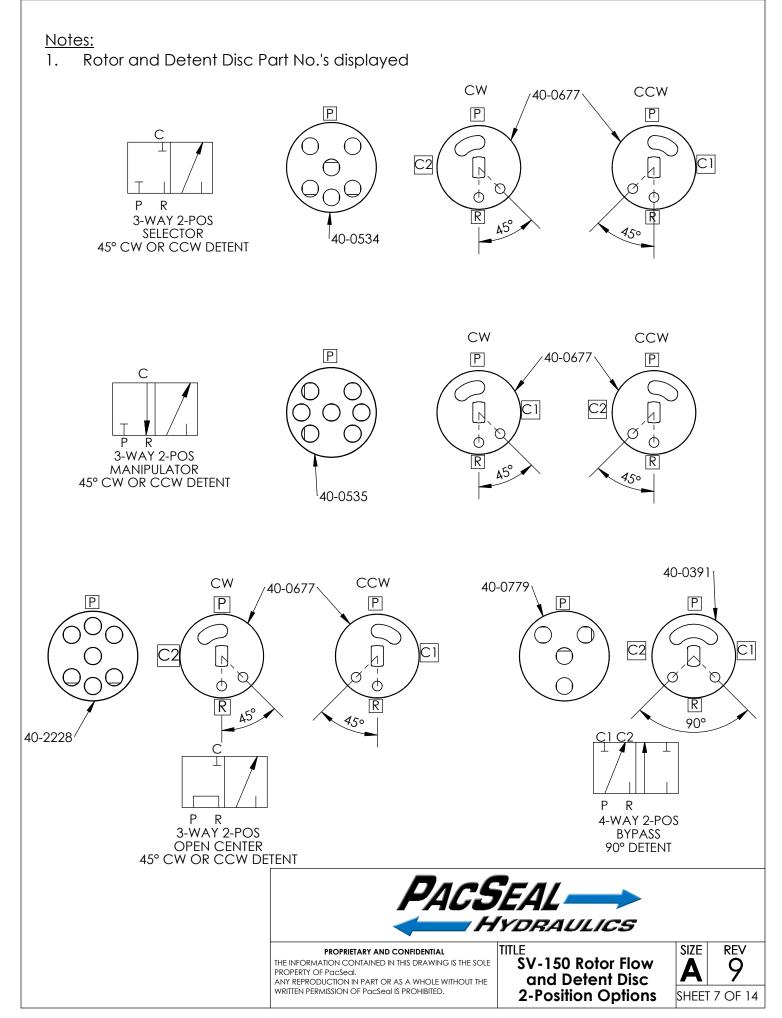


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											SV-150 \	/uives
Basic Size	Port Size	Type of Ports	Pressure Rating (PSI)	Port Location	Bolts	Rotor Flow Pattern	Model Code Configurator	Actuation Type	Handle	O-Ring	Actuator Cylinder Add-on	Nameplat e Add-on
SV150-	<b>12</b> 1-1/2"	N NPT S SAE M Manifold B Subplate <sup>1</sup>	<b>3</b> 3000 <b>5</b> 5000	I Inline / Side B Bottom	L Long	S Selector O Open Center M Manipulator B Bypass A All Blocked <sup>1</sup>	1 3-Pos. 2 2-Pos. 90° 3 2-Pos. 45° CW 4 2-Pos. 45° CCW	N/A (see add-on)	M Standard Manua R Actuator Cylinder L Pin Lock Detent W Wing Handle		None (leave empty) -AL Air Cylinder, Left Mounted -AR Air Cylinder, Right Mounted -HL Hyd. Cylinder, Left Mounted -HR Hyd. Cylinder, Right Mounted	None (leave empty) -0 Blank
SVX150-	<b>12</b> 1-1/2"	N NPT S SAE M Manifold B Subplate <sup>1</sup> andard Option	3 3000 5 5000	I Inline/Side B Bottom	N/A	S Selector O Open Center M Manipulator B Bypass A All Blocked <sup>1</sup>	1 2-Pos. 90° (4W2P - 4W3P w/ Manual Override) 2 2-Pos. 45° CW (3W2P) 5 2-Pos. 45° CCW (3W2P) 3 3-Pos. 90° (4W3P) 4 3-Pos. 90° - Spring Centered <sup>3</sup> (4W3P) 6 2-Pos. 45° CW - Spring Centered <sup>3</sup> (3W2P)	<ul> <li>A Air - Direct Piloted</li> <li>H Hydraulic - Direct Piloted</li> <li>R Air - Solenoid Piloted</li> <li>U Hydraulic - Solenoid Piloted</li> </ul>	S Straight W Wing N Indicator <sup>3</sup>	N Buna-N V Viton E EPR	N/A	<i>None (leave empty)</i> <b>-0</b> Blank
				Lock 12NSIS	Deten Sm1LN)	THE IN PROP ANY R	(Exampl	with Air Cyles SV 150-12N3			r size ons	REV 9



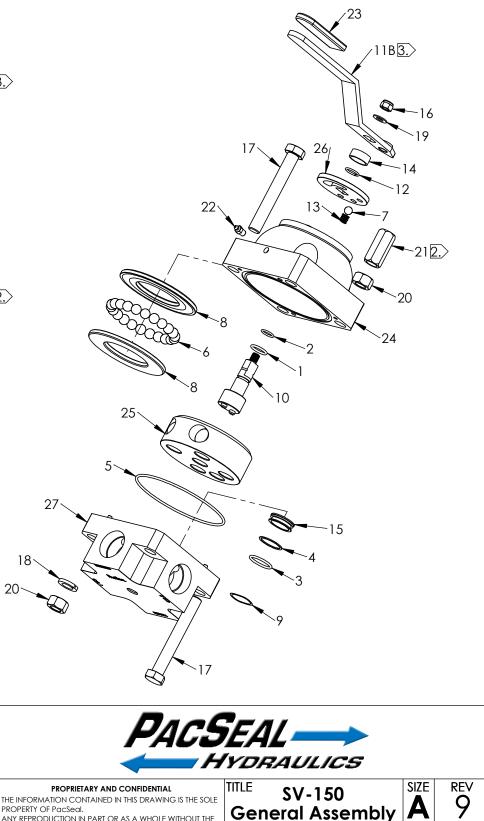


SV-150	Valves
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	<u>Nc</u> 1.
1	23-1122	O-Ring	1	
2	23-1352	O-Ring	1	2.
3	23-1417	O-Ring	3	3. 4.
4	23-1418	Backup Ring	3	.5
5	23-1419	O-Ring	1	6. 7. 8.
6	40-0092	Ball Bearing	22	8.
7	40-0174	Ball Bearing	1	
8	40-0226	Thrust Washer	2	
9	40-0239	Wave Spring	3	
10	40-0276	Shaft	1	
11B	40-0284	Handle, Remote	1	3.>
12	40-0288	Retaining Ring	1	
13	40-0295	Spring	1	
14	40-0773	Spacer, Handle	1	
15A	40-2203	Seal Ring (3 ksi)	3	
15B	40-3272	Seal Ring (6 ksi)	3	
16	50-0093	Nut, Shaft	1	
17	50-0102	Bolt	4	
18	50-0105	Lock Washer	4	
19	50-0108	Washer, Shaft	1	
20	50-0111	Nut	4	
21	50-0116	Nut, Panel Mount	4	2.>
22	50-0176	Grease Fitting	1	
23	50-0236	Grip, Handle	1	
24	40-0354	Housing	1	
25	Note 4	Rotor	1	
26	Note 4	Detent Disc	1	
27	Note 5	Body	1	
1				

Notes: 1.

- Standard Inline Ported SV-150 shown for illustration purposes. (Refer to Model Configuration for options.)
- 2.> Panel Mount Option.
- 3.> Remote Handle Option.
  - See sheets 6-7 "Rotor and Detent Shift Options" for replacement parts. See sheet 9 "SV-150 Porting Options" for Body option part numbers.
    - See sheets 10-14 for other operator and actuator options. Contact PacSeal for Viton or EPR O-rings. Refer to SV-150 Maintenance Instructions for more details.



Overview

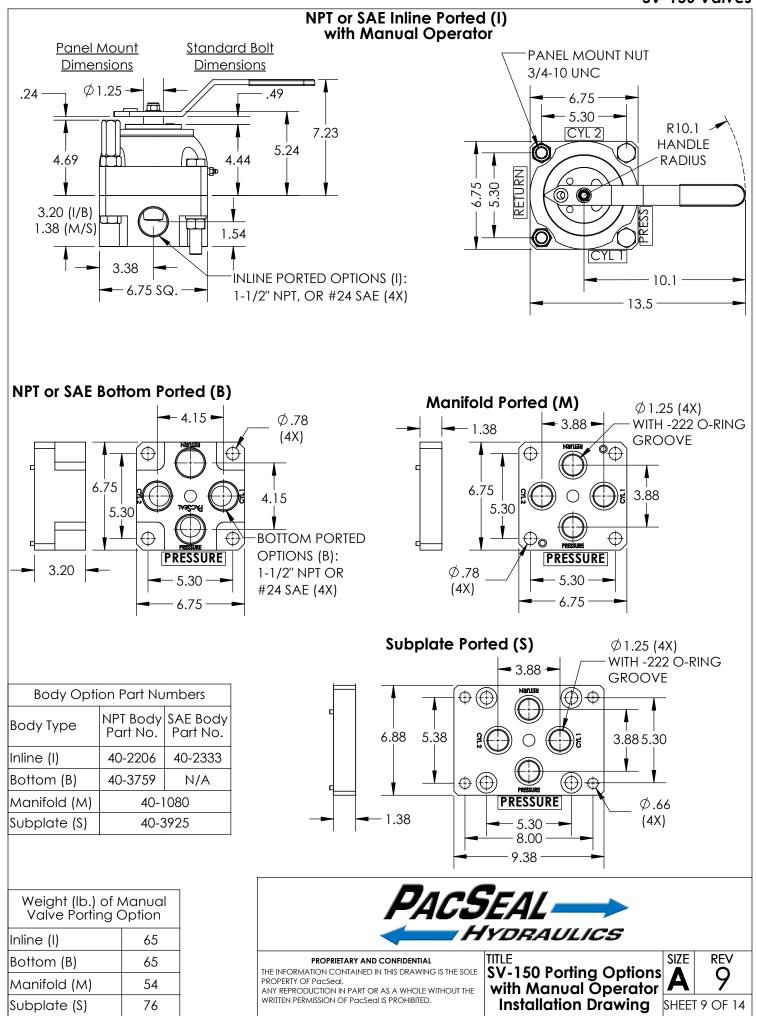
SHEET 8 OF 14

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SV-150 Valves



					SV-150 Valves		
ITEM NO.	PART NUMBER	DESCRIPTION	QTY		<i>M</i>		
1	40-3635	Detent Plate	1				
2	40-3637	Spacer	1		E. A		
4	50-0093	Nut, Shaft	1		28/ 5 /4		
5	50-0108	Washer, Shaft	1				
6	50-0394	Hex Jam Nut	1				
7	50-0521	Dowel Pin	1		2- ())) -6		
8	50-0542	Retractable Spring Pl	unger 1				
28	40-3796	Handle Ass'y	1				
Notes	<u>s</u> :	1	ļ				
1.	Pin Lock [	Detent operator preve	ents accide	ntal			
	-	nd ensures two-hande	-				
2>		ly be retrofitted in field	d - reference	e P/N			
		or Pin Lock Detent Kit.	h Manual (	)porator			
3>		50 Porting Options wit on Drawing'' (sheet 9) f		•			
		ns of other porting opt					
L		rsion Instructions:	notropoli	na hydraulia prosyura			
		Ensure that the valve is Remove the existing L		sher, Handle, Detent Dis	sc Spring and Ball		
		Add the Pin (7) to the		sher, Hanale, Detern Di			
		• •		two pins to match the	drawing		
	5. lr	nsert the Spacer (2) in	to the Dete	nt Plate (1)	-		
		Assemble the Handle (					
			-	he Locknut (4) to the Sh			
			-	of the Retractable Sprin	,		
		nread the Retractable pottom of the hole	e Spring Plu	nger to the Handle unti	il the plunger just makes contact with the		
		ighten the jam nut of	the plunge	r to the handle			
					ng Plunger is fully engaged in each hole		
		, ,		·			
	Pa	inel Mount Sta	ndard Bolt				
				7	PM NUT		
		→ Ø3.50 →			3/4-10 UNC		
	.20 —			.76	6.75		
	=				\		
		┥ ║╠╧══╧┑		7.24	CYL2 R10.9		
	4	.69	4.13	5.20			
	·		4.13		RADIUS		
	_	<u>†                                    </u>	∐	6.75			
	3> 3.20	) (І/В) Цара раз раз раз раз раз раз раз раз раз		оч 			
	1.38		Ţ				
	_	┰──└─┴┘───└┦_	ŀ				
		T					
					◄────14.3 ───►		
We	eight (Ib.) c	of each		PAC	5FA/		
Val							
Inline	( )	66			HYDRAULICS		
Botton	n (B)	66		PRIETARY AND CONFIDENTIAL	TITLE SV-150 Pin Lock SIZE REV		
	old (M)	55	PROPERTY OF Pag				
		77		ON IN PART OR AS A WHOLE WITHOUT THE ON OF PacSeal IS PROHIBITED.	Installation and		
Subplo	ure (s)	11			Assembly Drawing SHEET 10 OF 14		

Q.

2A

40-2378 (PART OF 40-3653) 2B

12 —9

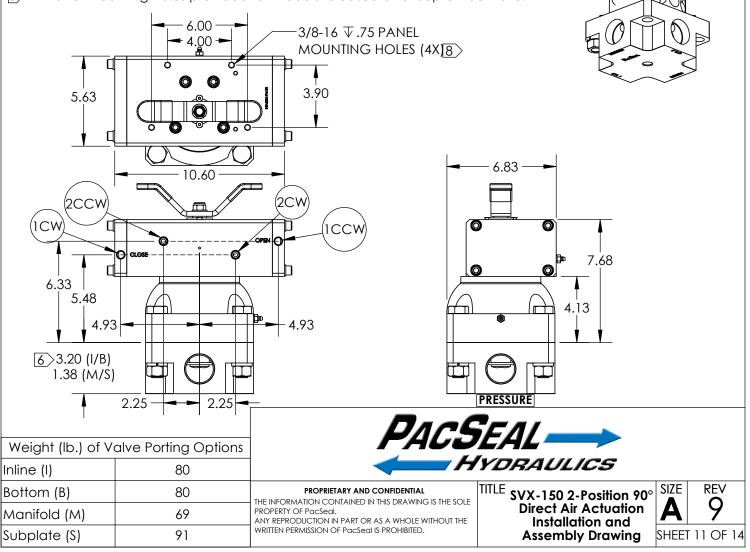
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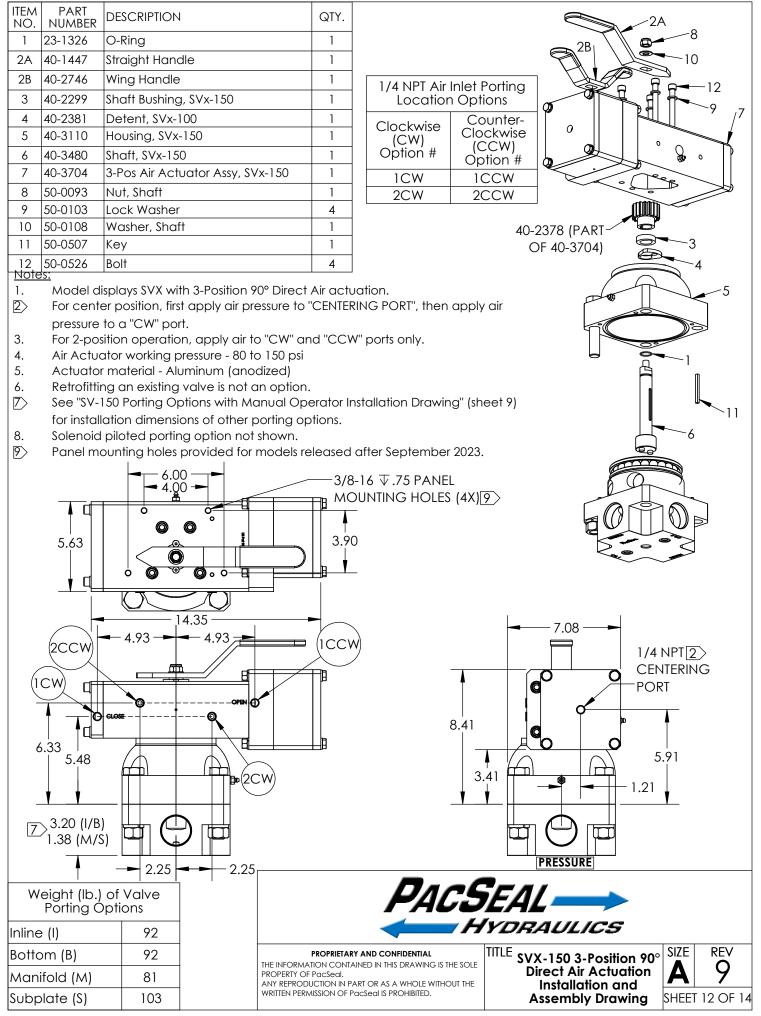
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	23-1326	O-Ring	1
2A	40-1447	Straight Handle	1
2B	40-2746	Wing Handle	1
3	40-2299	Shaft Bushing, SVx-150	1
4	40-2381	Detent, SVx-100	1
5	40-3110	Housing, SVx-150	1
6	40-3480	Shaft, SVx-150	1
7	40-3653	Air Actuator Assy, SVX-150	1
8	50-0093	Nut, Shaft	1
9	50-0103	Lock Washer	4
10	50-0108	Washer, Shaft	1
11	50-0507	Кеу	1
12	50-0526	Bolt	4
Mata	••		

	Inlet Porting Options
Clockwise (CW) Option #	Counter- Clockwise (CCW) Option #
1CW	1CCW
2CW	2CCW
2011	20070

#### <u>Notes:</u>

- 1. Model displays SVX with 2-Position 90° Direct Air actuation.
- 2. Center (3rd) position is accomplished with manual override.
- 3. Air Actuator working pressure 80 to 150 psi
- 4. Actuator material Aluminum (anodized)
- 5. Retrofitting an existing valve is not an option.
- See "SV-150 Porting Options with Manual Operator Installation Drawing" (sheet 9) for installation dimensions of other porting options.
- 7. Solenoid piloted porting option not shown.
- 8> Panel mounting holes provided for models released after September 2023.





		1	
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	23-1326	O-Ring	1
2A	40-1447	Straight Handle	1
2B	40-2746	Wing Handle	1
3	40-2299	Shaft Bushing, SVx-150	1
4	40-2381	Detent, SVx-100	1
5	40-3110	Housing, SVx-150	1
6	40-3480	Shaft, SVx-150	1
7	40-3541	Actuator Assy	1
8	50-0093	Nut, Shaft	1
9	50-0103	Lock Washer	4
10	50-0108	Washer, Shaft	1
11	50-0229	Bolt	4
12	50-0507	Кеу	1
Note	es:		

Hydraulic Actuator working pressure 800 to 1500 psi

Actuator material - Aluminum (anodized)

Solenoid piloted porting option not shown.

91

Subplate (S)

6.00

Retrofitting an existing valve is not an option.

1.

2.

3.

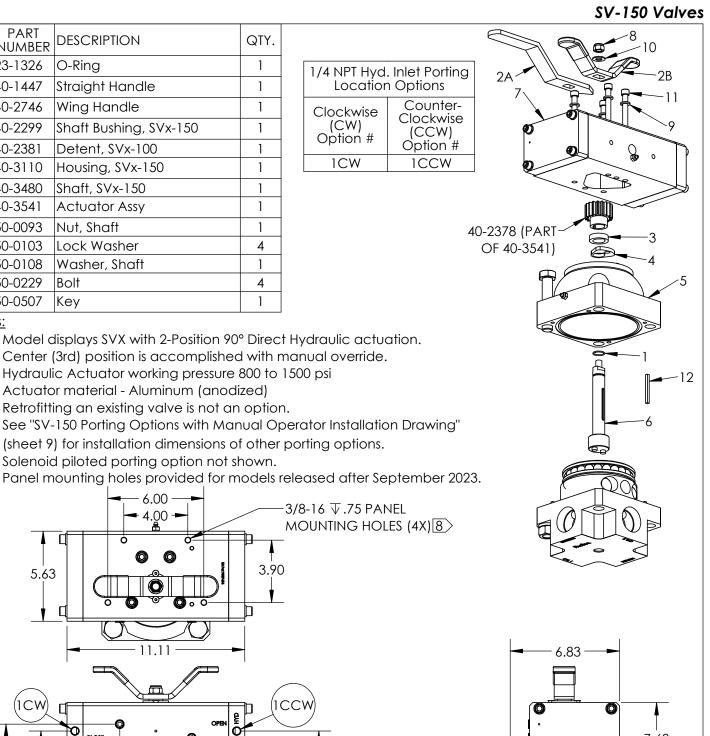
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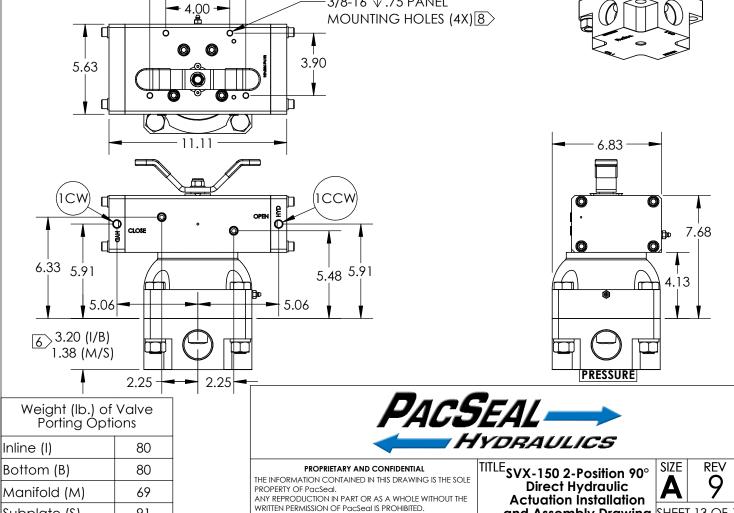
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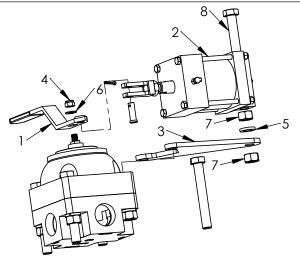
and Assembly Drawing SHEET 13 OF 14

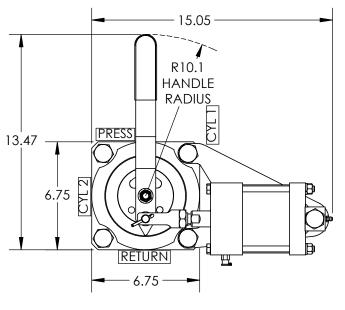


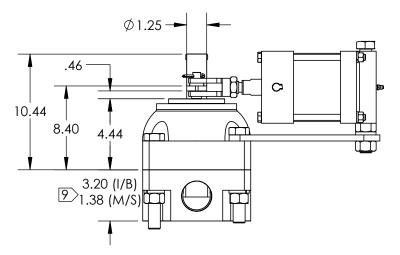
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1		Handle, Remote	1
2	40-1604	Air Actuator Cylinder Assembly, AAC-402	1
3	40-2307	Bracket	1
4	50-0093	Nut, Shaft	1
5	50-0105	Lock Washer	1
6	50-0108	Washer, Shaft	1
7	50-0111	Nut	2
8	50-0380	Bolt	1

Notes:

- 1. Model displays Right Mounted Air Cylinder Actuator
- 2. Cylinder Positions - 2
- 3. Cylinder Air working pressure - 80 to 150 psi
- 4. Cylinder Rating - 250 psi
- 5. Cylinder Stroke - 2.13 in.
- 6. Cylinder Bore/Rod - 4 x 1 in.
- 7. Actuator Material - Aluminum (anodized)
- See "SV-150 Porting Options with Manual 8> Operator Installation Drawing" (sheet 9) for installation dimensions of other porting options.









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Weight (lb.) of Valve Porting Options	
Inline (I)	91
Bottom (B)	91
Manifold (M)	80
Subplate (S)	102