



SV-200 Valve Specifications

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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 | 2 in. NPT or SAE ORB |
| Working Pressure Options (Liquid) | 2000 psi |
| Return Port Pressure | 250 psi (Max) ¹ |
| Proof Pressure | 1.5X Working Pressure |
| Burst Pressure | 2X Working Pressure |
| Cv Factor | 50.0 |
| Rated Flow | 200 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) | Stainless Steel Hardened ² |
| 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 |

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 - Contact PacSeal for details

Valve Shift Options

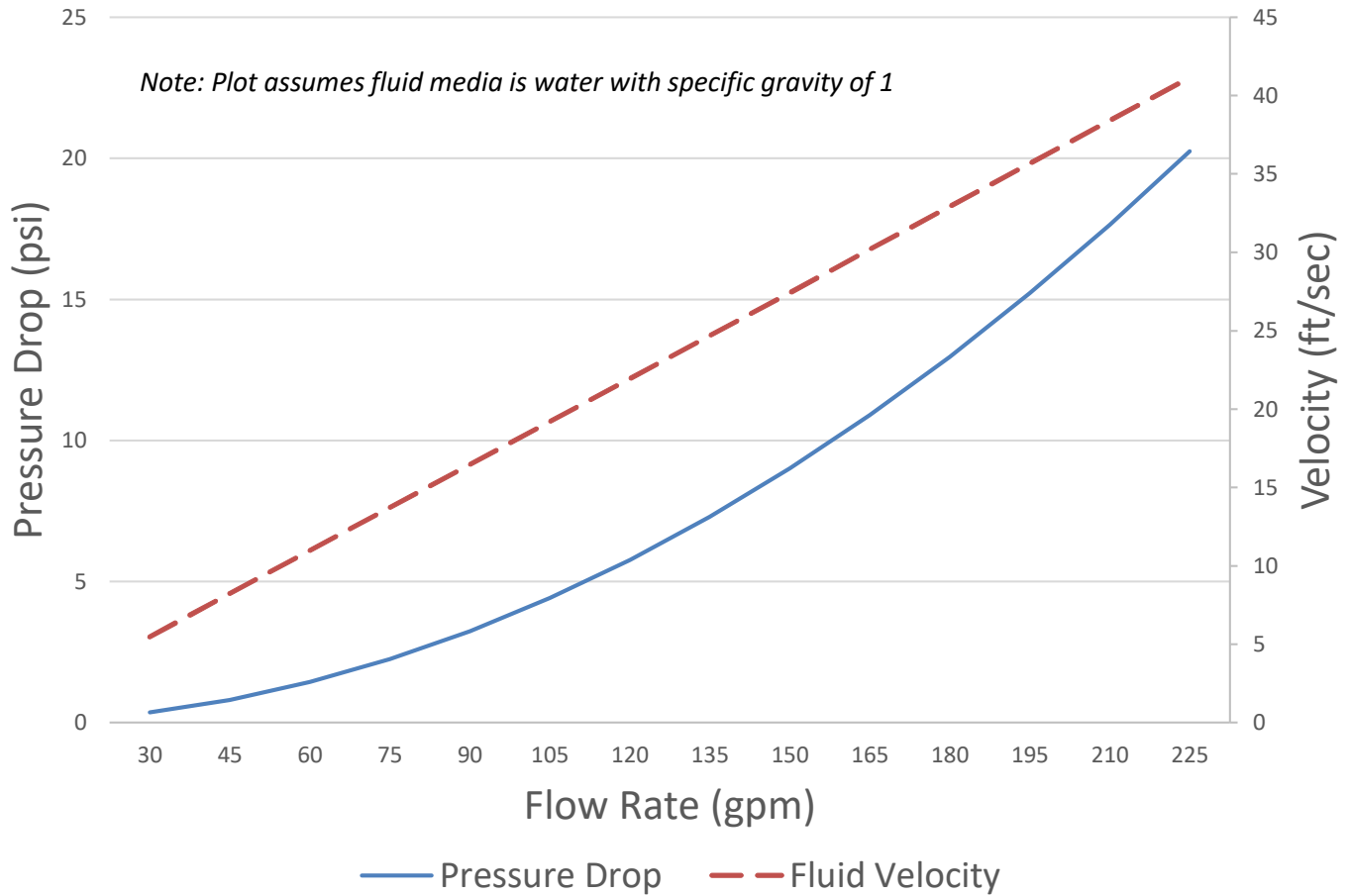
| <u>Detent Pattern</u> | <u>Valve Options</u> |
|----------------------------------|------------------------------------|
| 3-Position (4-way) | All options |
| 2-Position 90° (4-way) | All options |
| 2-Position 45° CW or CCW (3-way) | Selector, Manipulator, Open Center |

Rotor Flow Options

| <u>Rotor Configuration</u> | <u>Center Position</u> | <u>CW or CCW Position</u> |
|----------------------------|---|--|
| 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 |
| All Blocked | All ports blocked. Case Drain Required | Operates a cylinder port while the opposite port is returned to tank |



SV-200 Valve Pressure Drop and Fluid Velocity

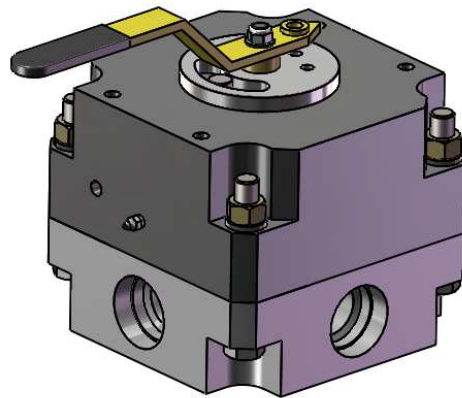


SV-200 Handle Torque (lb.-in.)

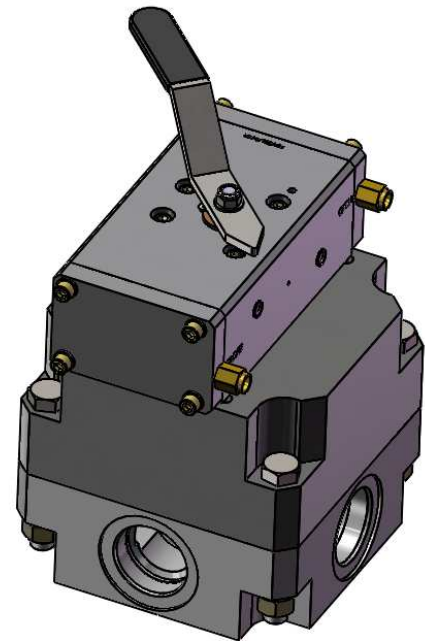
| <u>Rotor Type</u> | <u>At 2000 psi Supply Pressure</u> |
|-------------------|--|
| <i>Selector</i> | 300 |

Model Code Configurator

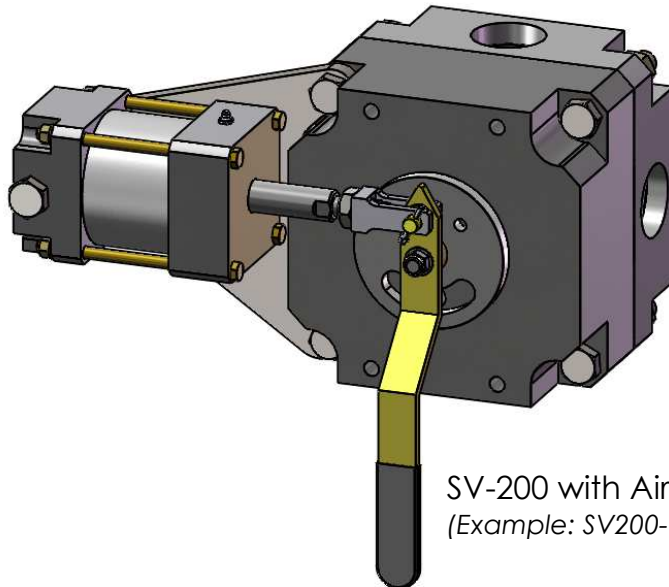
| Basic Size | Port Size | Type of Ports | Pressure Rating (PSI) | Port Location | Bolts | Rotor Flow Pattern | Valve/Actuator Positions | Actuation Type | Handle | O-Ring | Actuator Cylinder Add-on ⁴ | Nameplate Add-on |
|------------|--|---------------|-----------------------|---------------------|---------------|---|--------------------------------|--------------------------|-------------------------|----------------------------------|---------------------------------------|--------------------|
| SV200- | 16 2" | N NPT | 2 2000 | I Inline / Side | S Std Short | S Selector | 1 3-Pos. | N/A (see add-on) | M Standard Manual | N Buna-N | None (leave empty) | None (leave empty) |
| | | S SAE | | L Long | O Open Center | 2 2-Pos. 90° | R Actuator Cylinder | | V Viton | -AL Air Cylinder, Left Mounted | -0 Blank | |
| | | M Manifold | | P Panel Mount | M Manipulator | 3 2-Pos. 45° CW | L Pin Lock Detent | | E EPR | -AR Air Cylinder, Right Mounted | | |
| | | | | N None ¹ | B Bypass | 4 2-Pos. 45° CCW | W Wing Handle | | | -HL Hyd. Cylinder, Left Mounted | | |
| | | | | | | | | | | -HR Hyd. Cylinder, Right Mounted | | |
| SVX200- | 16 2" | N NPT | 2 2000 | I Inline / Side | N/A | S Selector | 1 2-Pos. 90° | A Air - Direct Piloted | S Straight ³ | N Buna-N | N/A | None (leave empty) |
| | | S SAE | | O Open Center | | 2 2-Pos. 45° CW | H Hydraulic - Direct Piloted | W Wing ³ | V Viton | -0 Blank | | |
| | | M Manifold | | M Manipulator | | 5 2-Pos. 45° CCW | R Air - Solenoid Piloted | N Indicator ² | E EPR | | | |
| | | | | B Bypass | | 3 3-Pos. 90° | U Hydraulic - Solenoid Piloted | | | | | |
| | | | | | | 4 3-Pos. 90° - Spring Centered ² | | | | | | |
| Notes: | ¹ For Manifold Mount Option | | | | | 6 2-Pos. 45° CW - Spring Centered ² | | | | | | |
| | ² No manual override | | | | | 7 2-Pos. 45° CCW - Spring Centered ² | | | | | | |

Notes: ¹ For Manifold Mount Option² No manual override³ Manual override to center position (3rd position for 2-Pos SVX Actuators)⁴ AAC-402 is the standard bracket mounted actuator

SV-200 Inline Ported
(Example: SV200-16N2ISS1MN)



SVX-200 with 2 Pos. 90° Air
Actuation
(Example: SVX200-16N2IS1ASN)



SV-200 with Air Cylinder Actuator
(Example: SV200-16N2ISS1RN-AR)



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TITLE

Model Configurations Overview

SIZE

A

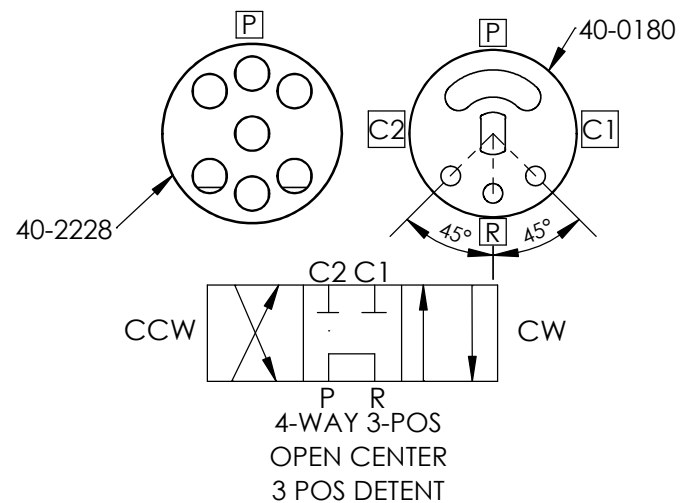
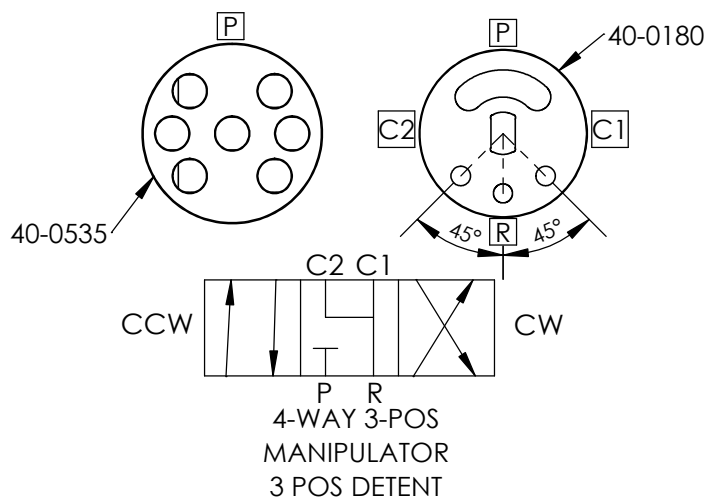
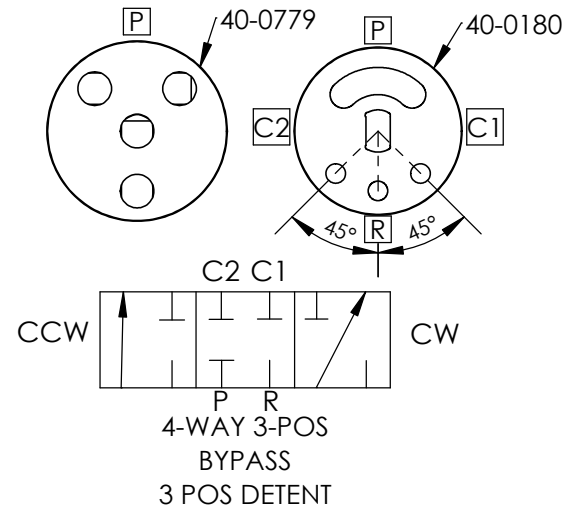
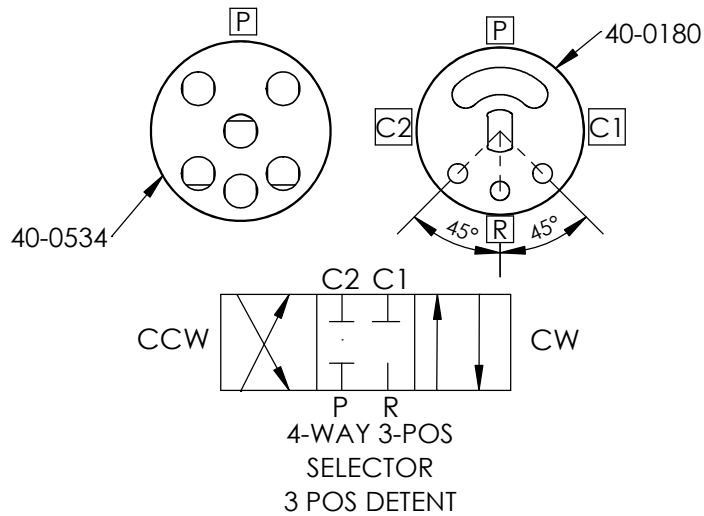
REV

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SHEET 4 OF 10

Notes:

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

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TITLE

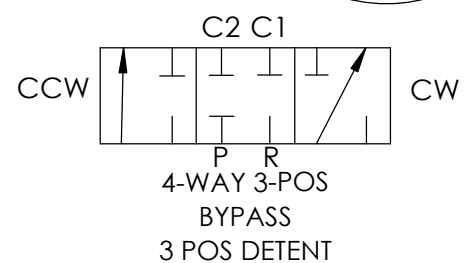
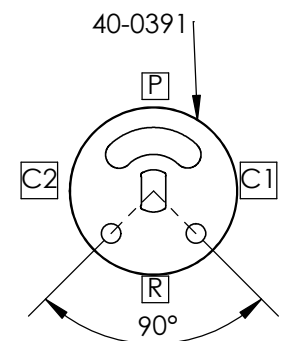
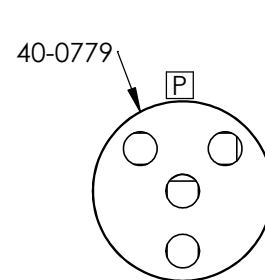
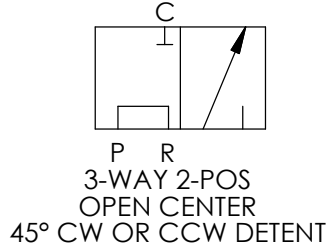
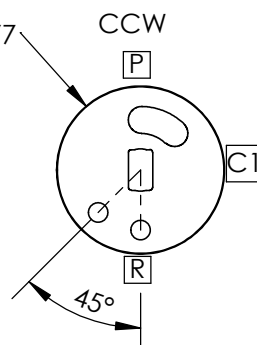
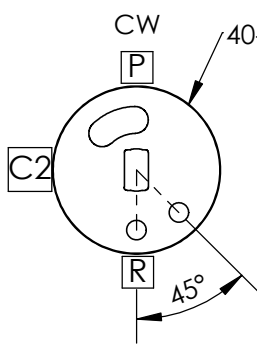
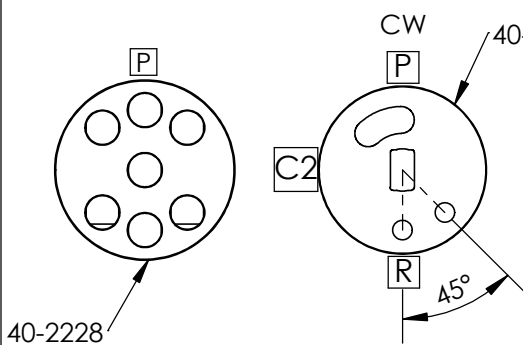
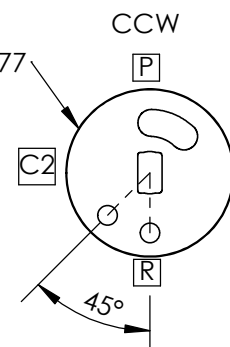
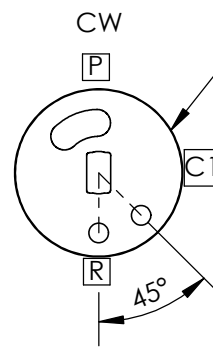
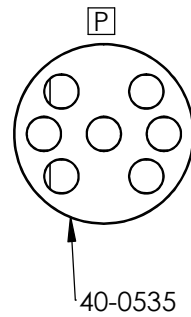
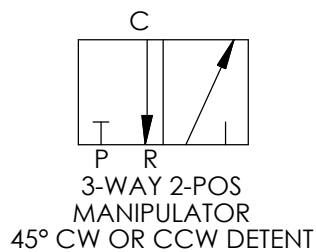
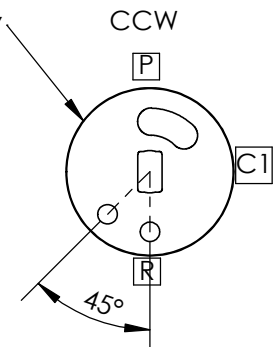
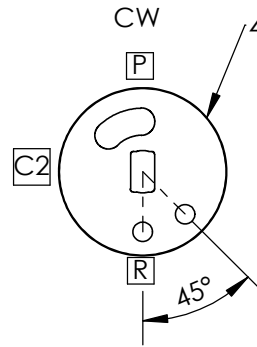
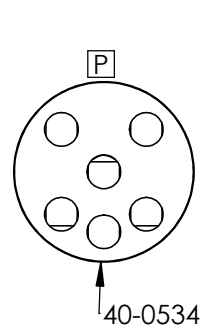
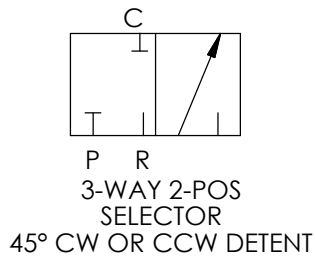
**SV-200 Rotor Flow
and Detent Disc
3-Position Options**

SIZE**A****REV****1**

SHEET 5 OF 10

Notes:

- Rotor and Detent Disc Part No.'s displayed



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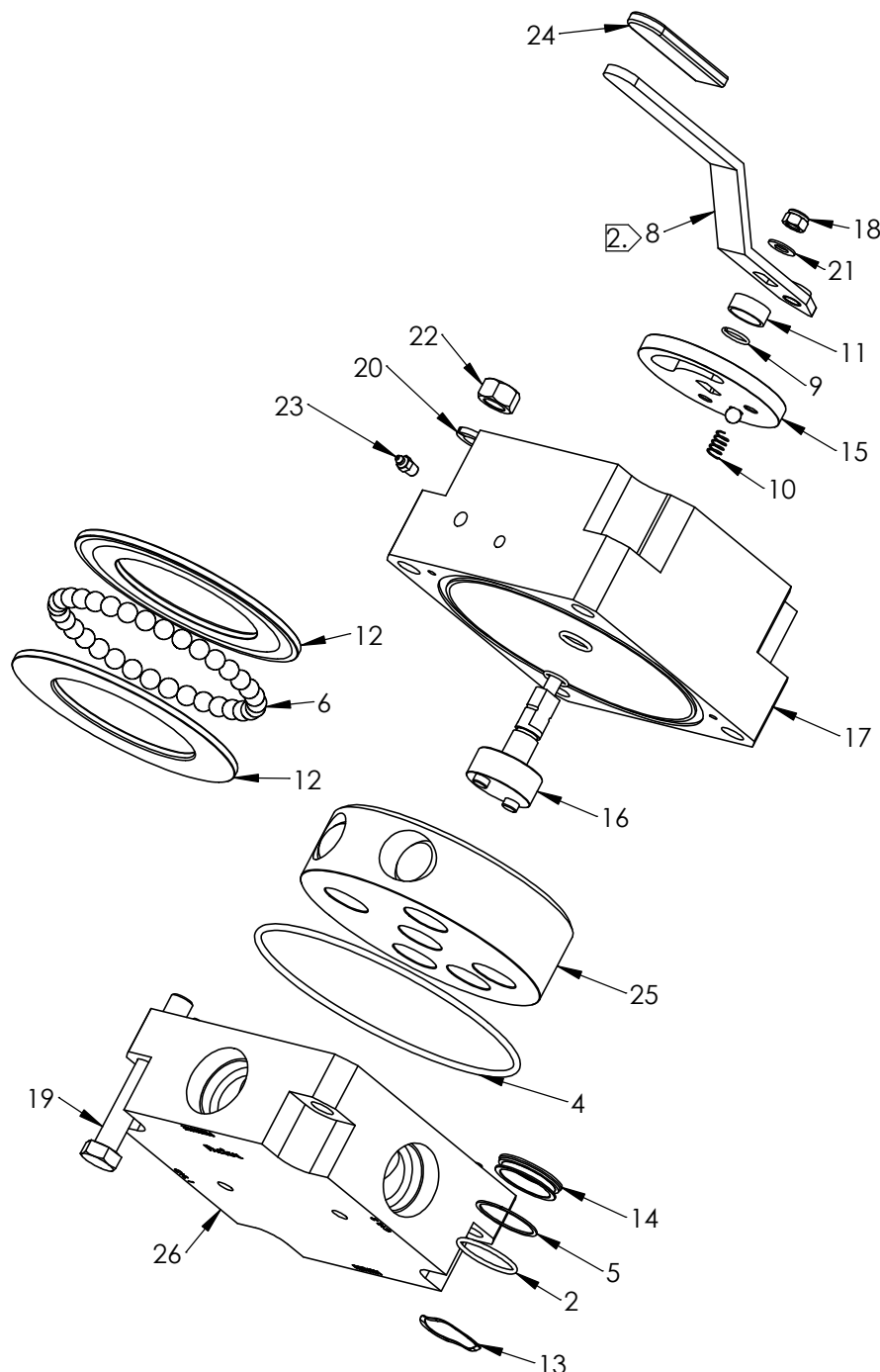
TITLE
**SV-200 Rotor Flow
and Detent Disc
2-Position Options**

| | |
|-------------------------|------------------------|
| SIZE A | REV 1 |
| SHEET 6 OF 10 | |

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|----------------|------|
| 1 | 23-1122 | O-Ring | 1 |
| 2 | 23-1336 | O-Ring | 3 |
| 3 | 23-1352 | O-Ring | 1 |
| 4 | 23-1550 | O-Ring | 1 |
| 5 | 23-1551 | Backup Ring | 3 |
| 6 | 40-0092 | Ball, Bearing | 34 |
| 7 | 40-0174 | Ball, Bearing | 1 |
| 8 | 40-0284 | Handle, Remote | 1 |
| 9 | 40-0288 | Retaining Ring | 1 |
| 10 | 40-0295 | Spring | 1 |
| 11 | 40-0773 | Spacer, Handle | 1 |
| 12 | 40-2574 | Thrust Washer | 2 |
| 13 | 40-2598 | Wave Spring | 3 |
| 14 | 40-4467 | Seal Ring | 3 |
| 15 | 40-4740 | Detent Disc | 1 |
| 16 | 40-4741 | Shaft | 1 |
| 17 | 40-4743 | Housing | 1 |
| 18 | 50-0093 | Nut, Shaft | 1 |
| 19 | 50-0102 | Bolt | 4 |
| 20 | 50-0105 | Lock Washer | 4 |
| 21 | 50-0108 | Washer, Shaft | 1 |
| 22 | 50-0111 | Hex Nut | 4 |
| 23 | 50-0176 | Grease Fitting | 1 |
| 24 | 50-0236 | Grip, Handle | 1 |
| 25 | Note 3 | Rotor | 1 |
| 26 | Note 4 | Body | 1 |

Notes:

- Standard Inline Ported SV-200 shown for illustration purposes. (Refer to Model Configuration for options.)
- Remote Handle Option.
- See sheets 5-6 "Rotor and Detent Shift Options" for replacement parts.
- See sheet 8 "SV-200 Porting Options" for Body option part numbers.
- See sheets 9-13 for other operator and actuator options.
- Contact PacSeal for Viton or EPR O-rings.
- Refer to SV-200 Maintenance Instructions for more details.

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TITLE

SV-200
General Assembly
Overview

SIZE

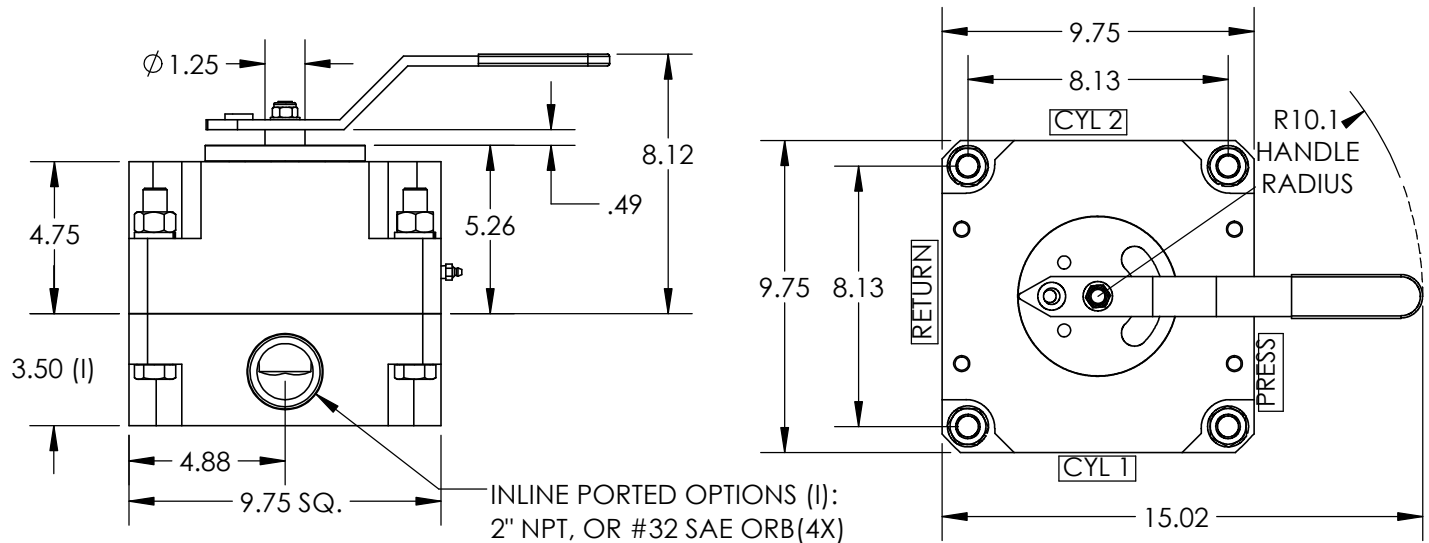
A

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SHEET 7 OF 10

NPT or SAE Inline Ported (I) with Manual Operator



Body Option Part Numbers

| Body Type | NPT Body Part No. | SAE Body Part No. |
|--------------|-------------------|-------------------|
| Inline (I) | 40-2569 | 40-4457 |
| Bottom (B) | TBD | TBD |
| Manifold (M) | TBD | |
| Subplate (S) | TBD | |

Weight (lb.) of Manual Valve Porting Option

| | |
|--------------|-----|
| Inline (I) | 169 |
| Bottom (B) | TBD |
| Manifold (M) | TBD |
| Subplate (S) | TBD |



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TITLE
**SV-200 Porting Options
with Manual Operator
Installation Drawing**

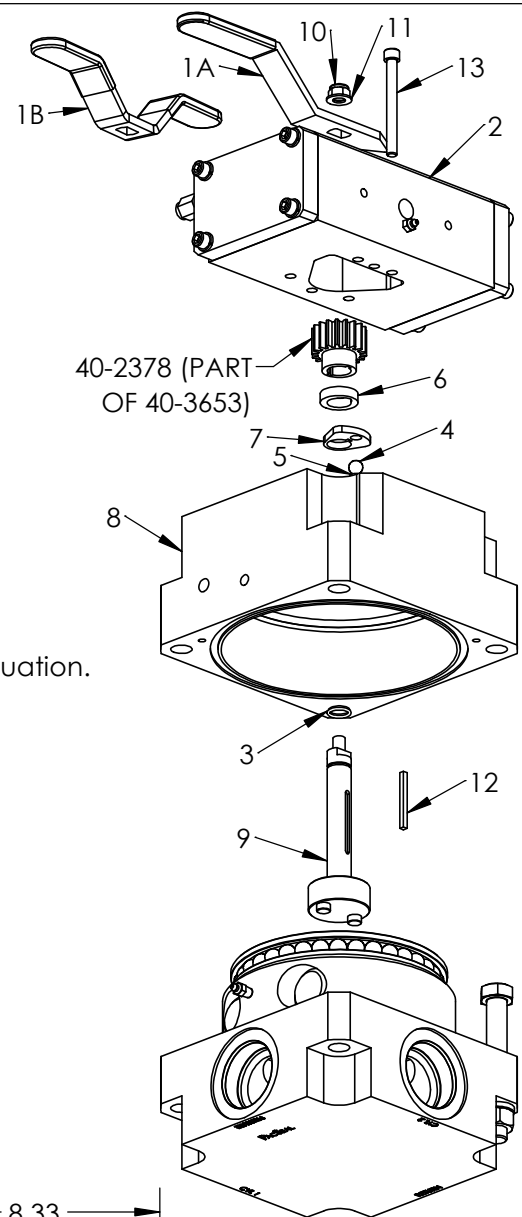
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SHEET 8 OF 10

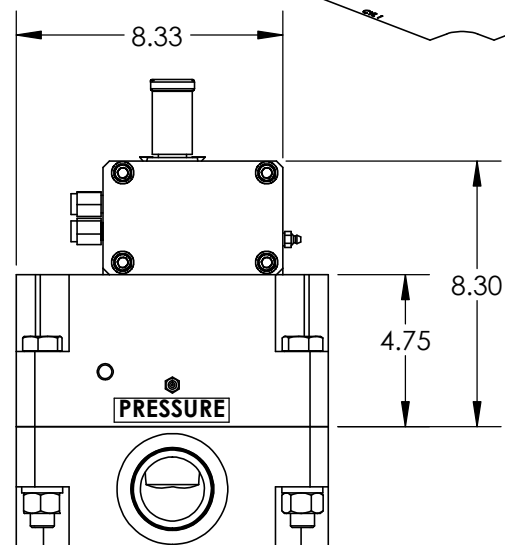
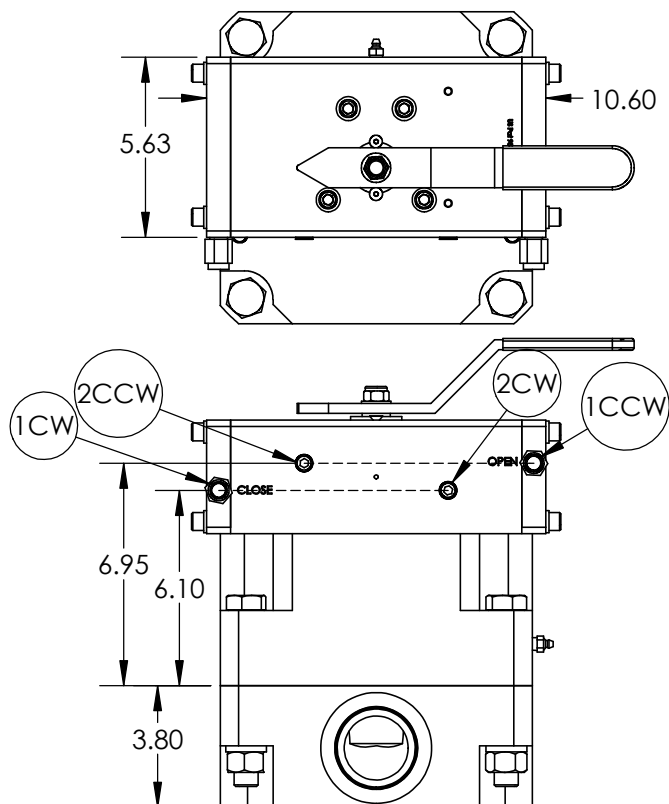
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|-------------------|------|
| 1A | 40-1447 | Straight Handle | 1 |
| 1B | 40-3251 | Wing Handle | 1 |
| 2A | 40-3653 | Air Actuator Assy | 1 |
| 2B | 40-4582 | Hyd Actuator Assy | 1 |
| 3 | 23-1352 | O-Ring | 1 |
| 4 | 40-0174 | Ball, Bearing | 1 |
| 5 | 40-0295 | Spring | 1 |
| 6 | 40-2299 | Shaft Bushing | 1 |
| 7 | 40-2381 | Detent | 1 |
| 8 | 40-4744 | Housing | 1 |
| 9 | 40-4745 | Shaft | 1 |
| 10 | 50-0093 | Nut, Shaft | 1 |
| 11 | 50-0108 | Washer, Shaft | 1 |
| 12 | 50-0507 | Key | 1 |
| 13 | 50-0526 | SHCS | 4 |

| 1/4 NPT Air Inlet Porting Location Options | |
|--|----------------------------------|
| Clockwise (CW) Option # | Counter-Clockwise (CCW) Option # |
| 1CW | 1CCW |
| 2CW | 2CCW |



Notes:

1. Model displays SVX with 2-Position 90° Direct Air or Hydraulic actuation.
2. Center (3rd) position is accomplished with manual override.
3. Air Actuator working pressure - 80 to 150 psi
4. Hydraulic Actuator working pressure - 800 to 1500 psi
5. Actuator material - anodized aluminum (carbon steel is special)
6. Retrofitting an existing valve is not an option.
7. Solenoid piloted porting option not shown.



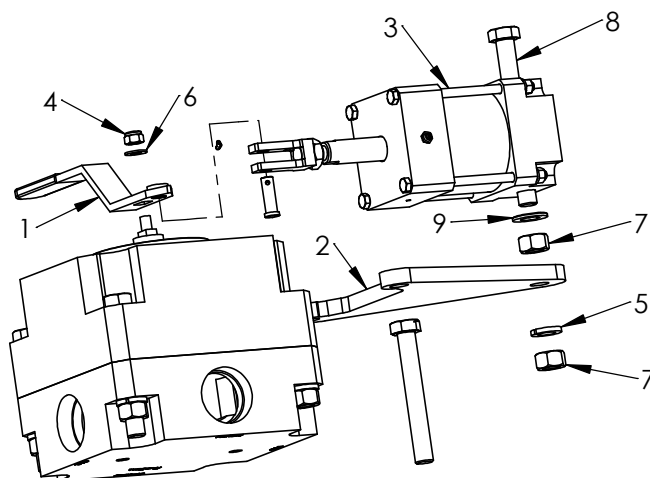
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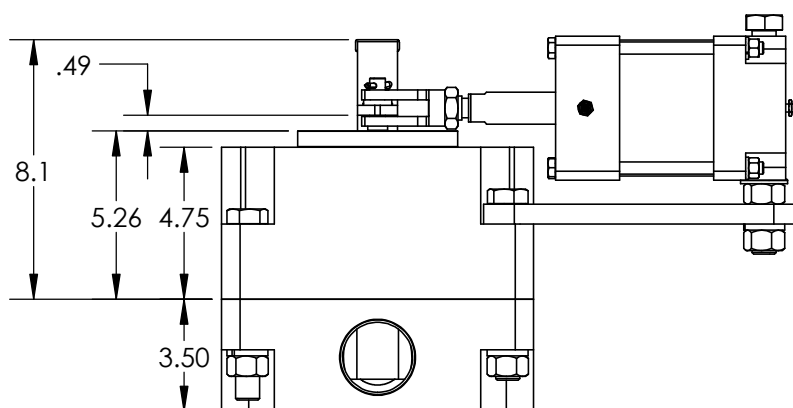
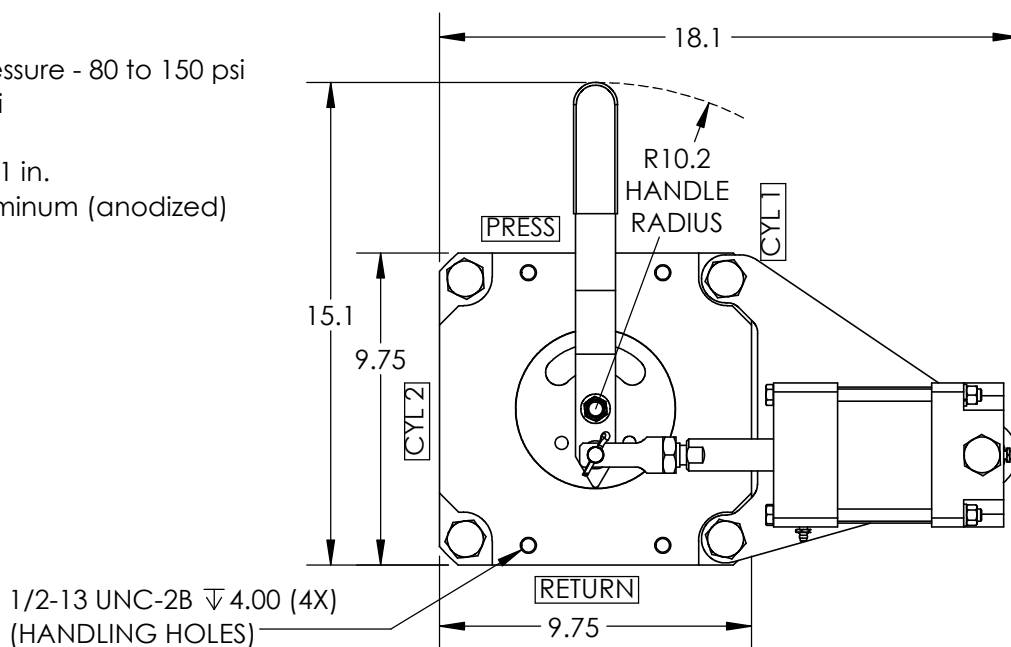
TITLE **SVX-200 2-Position 90°
Direct Air/Hyd. Actuation
Installation and
Assembly Drawing**

| | |
|------------------|-----------------|
| SIZE A | REV 1 |
| SHEET 9 OF 10 | |

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--|------|
| 1 | 40-0284 | Handle, Remote | 1 |
| 2 | 40-4770 | Bracket, SV-200 | 1 |
| 3 | 40-4771 | Air Actuator Cylinder Assembly, AAC-402L | 1 |
| 4 | 50-0093 | Nut, Shaft | 1 |
| 5 | 50-0105 | Lock Washer | 5 |
| 6 | 50-0108 | Washer, Shaft | 1 |
| 7 | 50-0111 | Hex Nut | 6 |
| 8 | 50-0658 | Hex Hd Bolt | 1 |
| 9 | 50-0659 | Washer, Flat (3/4" 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)

**Weight (lb.) of Valve Porting Options**

| | |
|--------------|-----|
| Inline (I) | 91 |
| Bottom (B) | 91 |
| Manifold (M) | 80 |
| Subplate (S) | 102 |

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TITLE

**SV-200 Air
Cylinder Actuator**

SIZE

A

REV

1

SHEET 10 OF 10