



## SV-50 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                         | 3/8 or 1/2 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) <sup>1</sup>                     |
| Proof Pressure                    | 1.5X Working Pressure                          |
| Burst Pressure                    | 2X Working Pressure                            |
| Cv Factor                         | 3.2                                            |
| Rated Flow                        | 30 gpm                                         |
| Leak Rate                         | 0-1 drip/min.                                  |
| Temp Rating                       | -40 to 250°F                                   |
| Fluid Media                       | Hydraulic oil or lubricated water <sup>2</sup> |
| Weight                            | See Installation Drawings                      |

### Materials

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| ShearFlo Sealing Components (Rotor and Seal Rings) | Hardened Stainless Steel <sup>2</sup> |
| 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                                |

<sup>1</sup> 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 for optimum performance and durability - Contact PacSeal for details

### Valve Shift Options

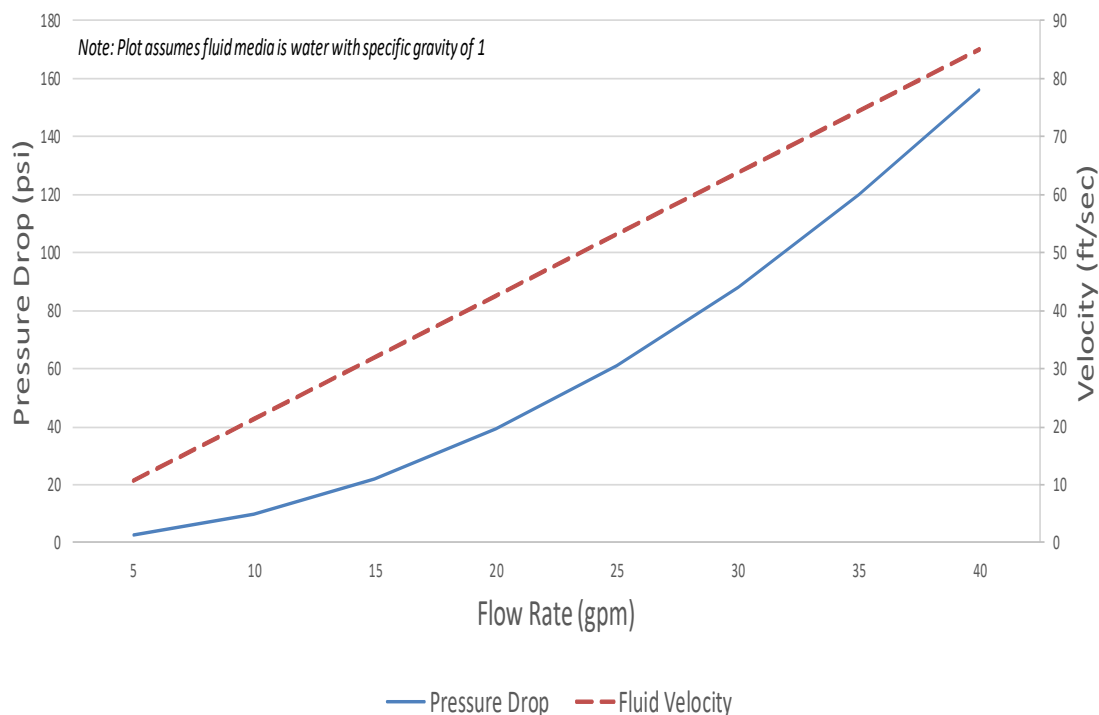
| Detent Pattern                         | Valve Options                      |
|----------------------------------------|------------------------------------|
| 3-Position (4-way)                     | All options                        |
| 2-Position 90° (4-way)                 | All options                        |
| 2-Position 45° CW or CCW (4-way/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-50 Valve Pressure Drop and Fluid Velocity



### SV-50 Handle Torque (lb.-in.)

| Rotor Type                                           | At 1500 psi<br>Supply Pressure | At 3000 psi<br>Supply Pressure | At 5000 psi<br>Supply Pressure | At 6000 psi<br>Supply Pressure |
|------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Selector                                             | 44                             | 60                             | 100                            | 108                            |
| Bypass <sup>1</sup>                                  | 71                             | 96                             | 156                            | 285                            |
| Spring Centered<br>(Selector or Bypass) <sup>2</sup> | 180                            | 180                            | NA                             | NA                             |

Note: <sup>1</sup> Higher torque is a result of having two supply pressures from C1 and C2

<sup>2</sup> High torque is necessary for spring to return to center. Needs special repair kits (see below)

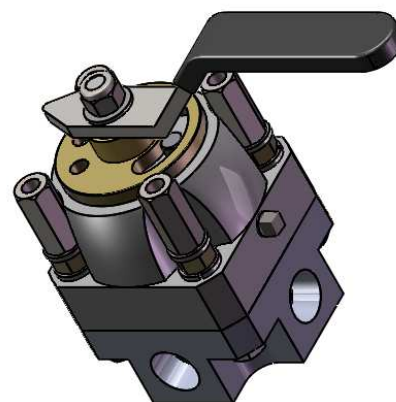
| Kit Description  | SV-50 Repair Kit Part Numbers by Rotor Type |             |         |
|------------------|---------------------------------------------|-------------|---------|
|                  | Selector                                    | Manipulator | Bypass  |
| O-ring Kit       | 40-1851                                     |             |         |
| Seal Kit         | 40-1538                                     |             |         |
| Minor Repair Kit | 40-1544                                     | 40-1619     | 40-1776 |
| Major Repair Kit | 40-1543                                     | 40-1569     | 40-1777 |

| Kit Description  | SV-50 10k and Spring Centered Repair Kit Part Numbers by Rotor Type |             |        |             |
|------------------|---------------------------------------------------------------------|-------------|--------|-------------|
|                  | Selector                                                            | Manipulator | Bypass | Open Center |
| O-ring Kit       | 40-4735                                                             |             |        |             |
| Seal Kit         | 40-4736                                                             |             |        |             |
| Minor Repair Kit | 40-4737                                                             | TBD         | TBD    | 40-4815     |
| Major Repair Kit | 40-4738                                                             | TBD         | TBD    | 40-4816     |

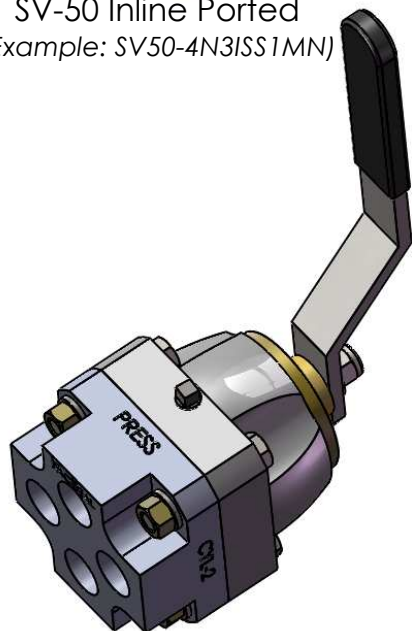
| Model Code Configurator                                                             |           |                         |                       |                 |                     |                            |                                                        |                                                                                                                      |                                |          |                                       |                  |                                                |                                           |
|-------------------------------------------------------------------------------------|-----------|-------------------------|-----------------------|-----------------|---------------------|----------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------|----------|---------------------------------------|------------------|------------------------------------------------|-------------------------------------------|
| Basic Size                                                                          | Port Size | Type of Ports           | Pressure Rating (PSI) | Port Location   | Bolts               | Rotor Flow Pattern         | Valve/Actuator Postions                                | Actuation Type                                                                                                       | Handle                         | O-Ring   | Actuator Cylinder Add-on <sup>8</sup> | Nameplate Add-on | Sensor Options <sup>6</sup>                    | Other                                     |
| SV50-                                                                               | 3 3/8"    | N NPT                   | 3 3000                | 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)                    | -0 Blank         | -SP1 Pressure Transducer (P Port)              | -HFR High Flow Return <sup>9</sup>        |
|                                                                                     | 4 1/2"    | S SAE                   | 6 6000                | B Bottom        | L Long              | O Open Center              | 2 2-Pos. 90°                                           |                                                                                                                      | R Actuator Cylinder            | V Viton  | -AL Air Cylinder, Left Mounted        | ("Open/Close")   | -SP2 Pressure Transducer (C1, C2 Ports)        | -W Special Alloy Seal Rings <sup>10</sup> |
|                                                                                     |           | M Manifold              |                       |                 | P Panel Mount       | M Manipulator <sup>3</sup> | 3 2-Pos. 45° CW                                        |                                                                                                                      | S Spring Centered <sup>5</sup> | E EPR    | -AR Air Cylinder, Right Mounted       |                  | -SP3 Pressure Transducer (P, C1, C2 Ports)     |                                           |
|                                                                                     |           | B Subplate <sup>1</sup> |                       |                 | N None <sup>2</sup> | B Bypass                   | 4 2-Pos. 45° CCW                                       |                                                                                                                      | L Pin Lock Detent              |          | -HL Hyd. Cylinder, Left Mounted       |                  | -P Proximity Switch                            |                                           |
|                                                                                     |           |                         |                       |                 |                     | A All Blocked <sup>4</sup> |                                                        |                                                                                                                      | W Wing Handle                  |          | -HR Hyd. Cylinder, Right Mounted      |                  | -PX Proximity Switch, Exp. Proof               |                                           |
|                                                                                     |           |                         |                       |                 |                     |                            |                                                        |                                                                                                                      | V Vertical Handle <sup>1</sup> |          |                                       |                  |                                                |                                           |
| SVX50-                                                                              | 3 3/8"    | N NPT                   | 3 3000                | I Inline / Side |                     | S Selector                 | 1 2-Pos. 90° (4W2P - 4W3P w/ Manual Override)          | A Air - Direct Piloted<br>H Hydraulic - Direct Piloted<br>R Air - Solenoid Piloted<br>U Hydraulic - Solenoid Piloted | S Straight                     | N Buna-N |                                       | -0 Blank         | -L Linear Transducer <sup>7</sup>              |                                           |
|                                                                                     | 4 1/2"    | S SAE                   | 6 6000                | B Bottom        |                     | O Open Center              | 2 2-Pos. 45° CW (3W2P)                                 |                                                                                                                      | W Wing                         | V Viton  |                                       | ("Open/Close")   | -LX Linear Transducer, Exp. Proof <sup>7</sup> |                                           |
|                                                                                     |           | M Manifold              |                       |                 | N/A                 | M Manipulator <sup>3</sup> | 5 2-Pos. 45° CCW (3W2P)                                |                                                                                                                      | N Indicator <sup>3</sup>       | E EPR    | N/A                                   |                  |                                                |                                           |
|                                                                                     |           | B Subplate <sup>1</sup> |                       |                 |                     | B Bypass                   | 3 3-Pos. 90° (4W3P)                                    |                                                                                                                      | V Vertical Handle <sup>1</sup> |          |                                       |                  |                                                |                                           |
|                                                                                     |           |                         |                       |                 |                     | A All Blocked <sup>4</sup> | 4 3-Pos. 90° - Spring Centered (4W3P) <sup>5</sup>     |                                                                                                                      |                                |          |                                       |                  |                                                |                                           |
|                                                                                     |           |                         |                       |                 |                     |                            | 6 2-Pos. 45° CW - Spring Centered (3W2P) <sup>5</sup>  |                                                                                                                      |                                |          |                                       |                  |                                                |                                           |
|                                                                                     |           |                         |                       |                 |                     |                            | 7 2-Pos. 45° CCW - Spring Centered (3W2P) <sup>5</sup> |                                                                                                                      |                                |          |                                       |                  |                                                |                                           |
| Notes: <sup>1</sup> Not a standard Option<br><sup>2</sup> For Manifold Mount Option |           |                         |                       |                 |                     |                            |                                                        |                                                                                                                      |                                |          |                                       |                  |                                                |                                           |

Notes: <sup>1</sup> Not a standard Option<sup>2</sup> For Manifold Mount Option<sup>3</sup> No manual override<sup>4</sup> Spring Centered Manual Operator is rated for 3000 psi only; High pressure seal rings are required - request kits accordingly.<sup>5</sup> If rated for 6000 psi, high pressure seal rings are required - request kits accordingly.<sup>6</sup> 24VDC is standard.<sup>7</sup> M12 connector with 4-20 mA output and 11-28 VDC input is standard.<sup>8</sup> All actuator cylinders are 2-position 90° standard with manual override for 3rd position. 3-pos cylinders may be available but not standard.<sup>9</sup> Manipulator valves that are manifold mounted or in high flow applications, may need to be configured to have high flow return (HFR) - contact PacSeal.<sup>10</sup> For water based media, special alloy seal rings may be required for optimum performance and durability - contact PacSeal.

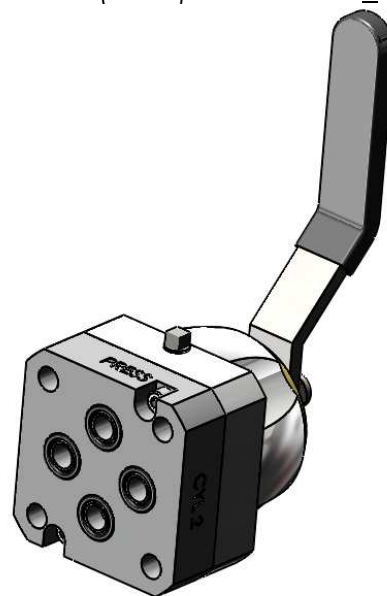
SV-50 Inline Ported  
(Example: SV50-4N3ISS1MN)



SV-50 Panel Mount  
(Example: SV50-4N6IPS1MN)



SV-50 Bottom Ported  
(Example: SV50-4N3BSS1MN)



SV-50 Manifold Ported  
(Example: SV50-4M3BSS1MN)



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TITLE **SV-50 Porting Configurations Overview**

SIZE **A** REV **16**  
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| 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 <sup>8</sup> | Nameplate Add-on | Sensor Options <sup>9</sup>                    | Other                                     |  |
| SV50-                   | 3 3/8"    | N NPT                   | 3 3000                | 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)                    | -0 Blank         | -SP1 Pressure Transducer (P Port)              | -HFR High Flow Return <sup>10</sup>       |  |
|                         | 4 1/2"    | S SAE                   | 6 6000                | B Bottom        | L Long              | O Open Center              | 2 2-Pos. 90°                                           |                                | R Actuator Cylinder            | V Viton  | -AL Air Cylinder, Left Mounted        | ("Open/Close")   | -SP2 Pressure Transducer (C1, C2 Ports)        | -W Special Alloy Seal Rings <sup>10</sup> |  |
|                         |           | M Manifold              |                       |                 | P Panel Mount       | M Manipulator <sup>3</sup> | 3 2-Pos. 45° CW                                        |                                | S Spring Centered <sup>4</sup> | E EPR    | -AR Air Cylinder, Right Mounted       |                  | -SP3 Pressure Transducer (P, C1, C2 Ports)     |                                           |  |
|                         |           | B Subplate <sup>1</sup> |                       |                 | N None <sup>2</sup> | B Bypass                   | 4 2-Pos. 45° CCW                                       |                                | L Pin Lock Detent              |          | -HL Hyd. Cylinder, Left Mounted       |                  | -P Proximity Switch                            |                                           |  |
|                         |           |                         |                       |                 |                     | A All Blocked <sup>1</sup> |                                                        |                                | W Wing Handle                  |          | -HR Hyd. Cylinder, Right Mounted      |                  | -PX Proximity Switch, Exp. Proof               |                                           |  |
|                         |           |                         |                       |                 |                     |                            |                                                        |                                | V Vertical Handle <sup>1</sup> |          |                                       |                  |                                                |                                           |  |
| SVX50-                  | 3 3/8"    | N NPT                   | 3 3000                | I Inline / Side |                     | S Selector                 | 1 2-Pos. 90° (4W2P - 4W3P w/ Manual Override)          | A Air - Direct Piloted         | S Straight                     | N Buna-N |                                       | -0 Blank         | -L Linear Transducer <sup>7</sup>              |                                           |  |
|                         | 4 1/2"    | S SAE                   | 6 6000                | B Bottom        |                     | O Open Center              | 2 2-Pos. 45° CW (3W2P)                                 | H Hydraulic - Direct Piloted   | W Wing                         | V Viton  |                                       | ("Open/Close")   | -LX Linear Transducer, Exp. Proof <sup>7</sup> |                                           |  |
|                         |           | M Manifold              |                       |                 | N/A                 | M Manipulator <sup>3</sup> | 5 2-Pos. 45° CCW (3W2P)                                | R Air - Solenoid Piloted       | N Indicator <sup>3</sup>       | E EPR    | N/A                                   |                  |                                                |                                           |  |
|                         |           | B Subplate <sup>1</sup> |                       |                 |                     | B Bypass                   | 3 3-Pos. 90° (4W3P)                                    | U Hydraulic - Solenoid Piloted | V Vertical Handle <sup>1</sup> |          |                                       |                  |                                                |                                           |  |
|                         |           |                         |                       |                 |                     | A All Blocked <sup>1</sup> | 4 3-Pos. 90° - Spring Centered (4W3P) <sup>5</sup>     |                                |                                |          |                                       |                  |                                                |                                           |  |
|                         |           |                         |                       |                 |                     |                            | 6 2-Pos. 45° CW - Spring Centered (3W2P) <sup>6</sup>  |                                |                                |          |                                       |                  |                                                |                                           |  |
|                         |           |                         |                       |                 |                     |                            | 7 2-Pos. 45° CCW - Spring Centered (3W2P) <sup>6</sup> |                                |                                |          |                                       |                  |                                                |                                           |  |

Notes: <sup>1</sup> Not a standard Option

<sup>2</sup> For Manifold Mount Option

<sup>3</sup> No manual override

<sup>4</sup> Spring Centered Manual Operator is rated for 3000 psi only. High pressure seal rings are required - request kits accordingly.

<sup>5</sup> If rated for 6000 psi, high pressure seal rings are required - request kits accordingly.

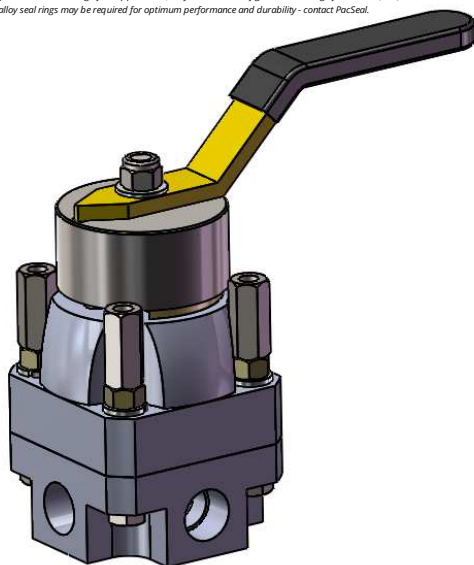
<sup>6</sup> 24VDC is standard.

<sup>7</sup> M12 connector with 4-20 mA output and 11-28 VDC input is standard.

<sup>8</sup> All actuator cylinders are 2-position 90° standard with manual override for 3rd position. 3-pos cylinders may be available but not standard.

<sup>9</sup> Manipulator valves that are manifold mounted or in high flow applications, may need to be configured to have high flow return (HFR) - contact PacSeal.

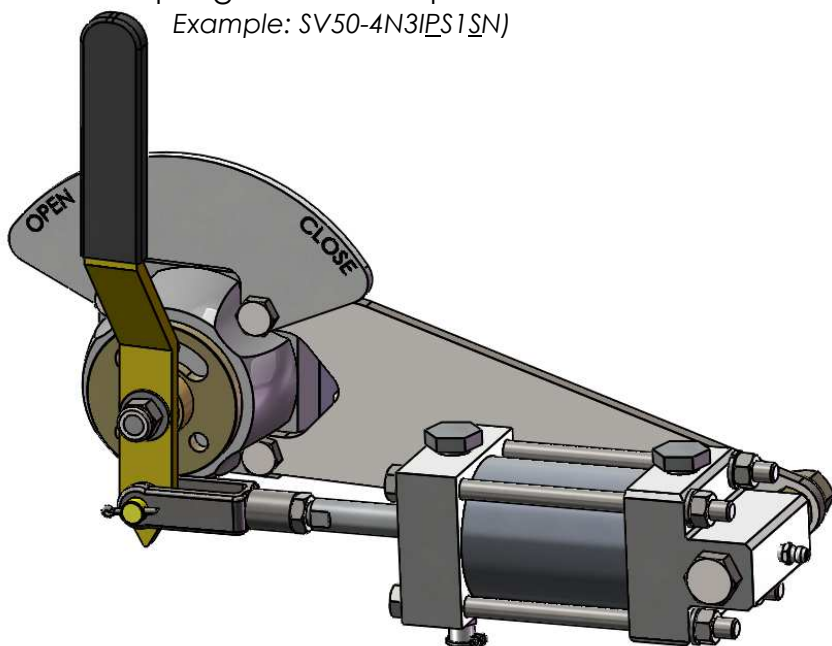
<sup>10</sup> For water based media, special alloy seal rings may be required for optimum performance and durability - contact PacSeal.



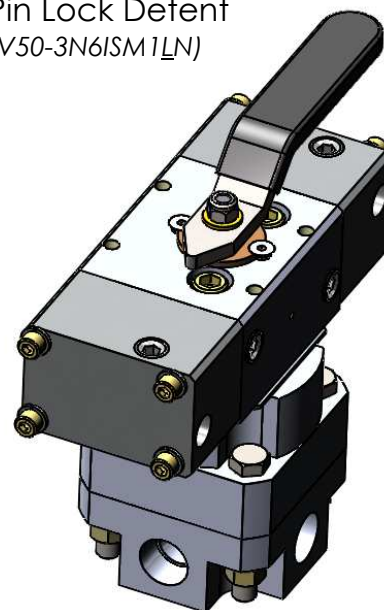
SV-50 Panel Mount with  
Spring Centered Operator  
Example: SV50-4N3IPS1SN)



SV-50 with Pin Lock Detent  
(Example: SV50-3N6ISM1LN)



SV-50 with Air Cylinder Actuator  
(Example: SV50-4N3ISS1RN-AR0)



SVX-50 with 2 Pos. 90° Air  
or Hydraulic Actuation  
(Example: SVX50-3N3IS1ASN  
or SVX50-3N3IS1HSN)



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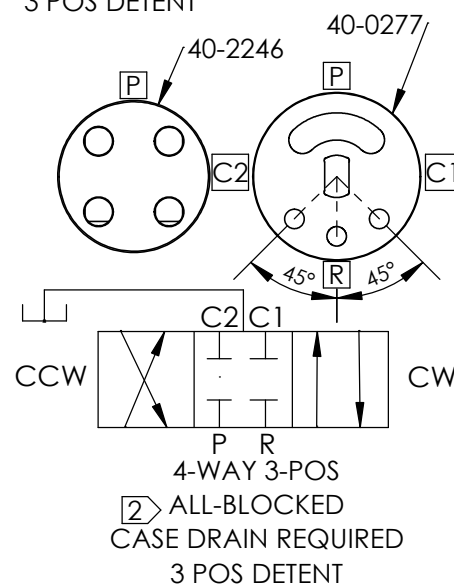
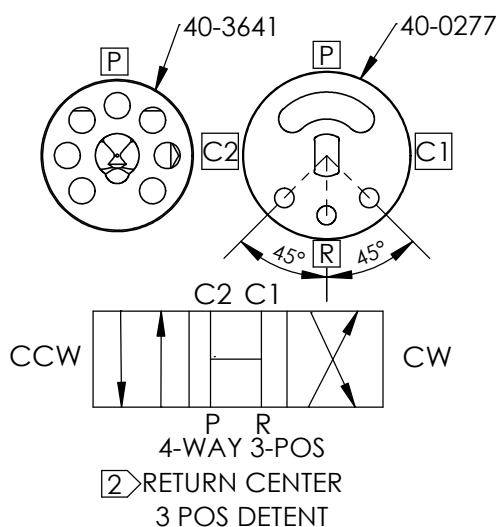
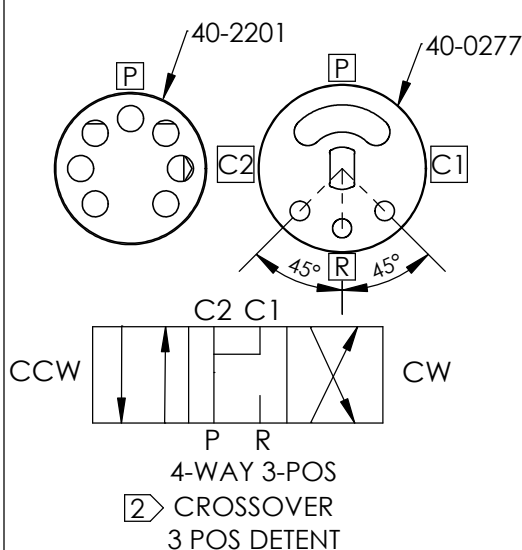
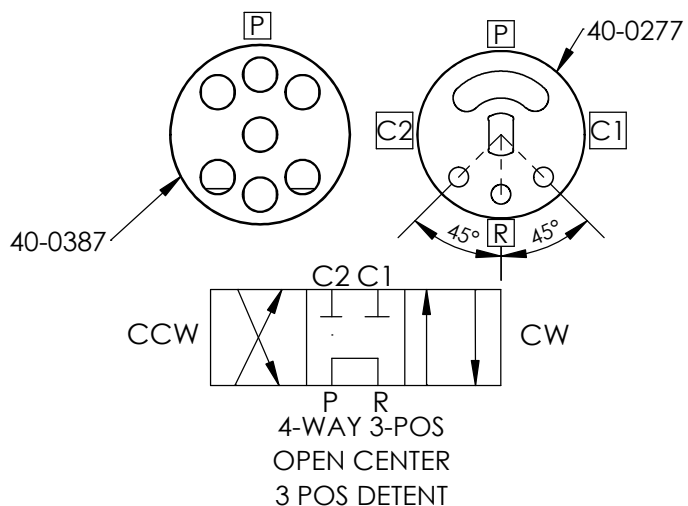
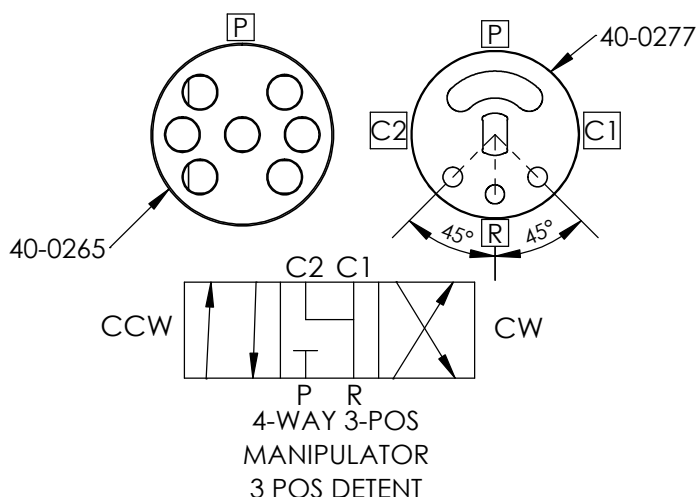
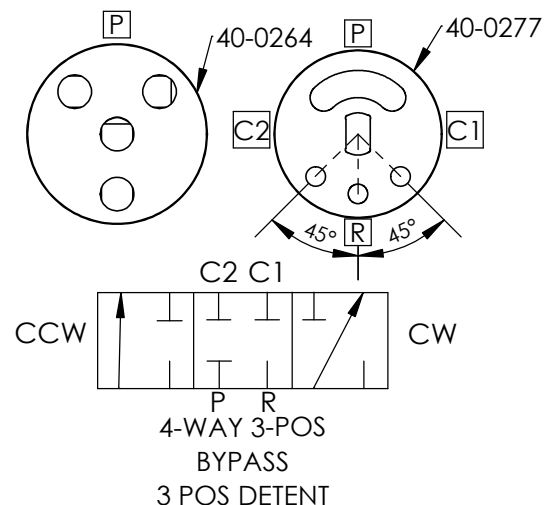
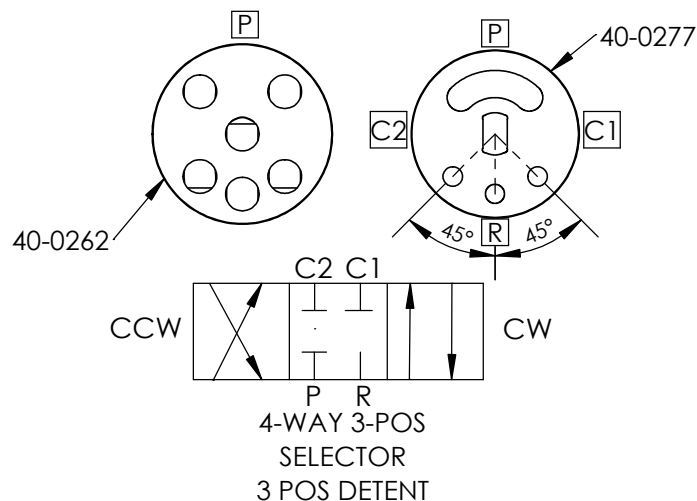
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TITLE **SV-50 Operator  
Configurations  
Overview**

SIZE **A** REV **16**  
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**Notes:**

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



| PacSeal Rotor Configurations | Common Industry Terminology |
|------------------------------|-----------------------------|
| Manipulator                  | Motor Spool / Float Center  |
| Selector                     | All Blocked / Closed Center |
| Bypass                       | Diverter                    |
| Open Center                  | Tandem Center               |
| All Blocked                  | -                           |
| Return Center                | Open Center                 |
| Crossover                    | -                           |

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**TITLE**  
**SV-50 Rotor Flow and Detent Disc 3-Position Options**

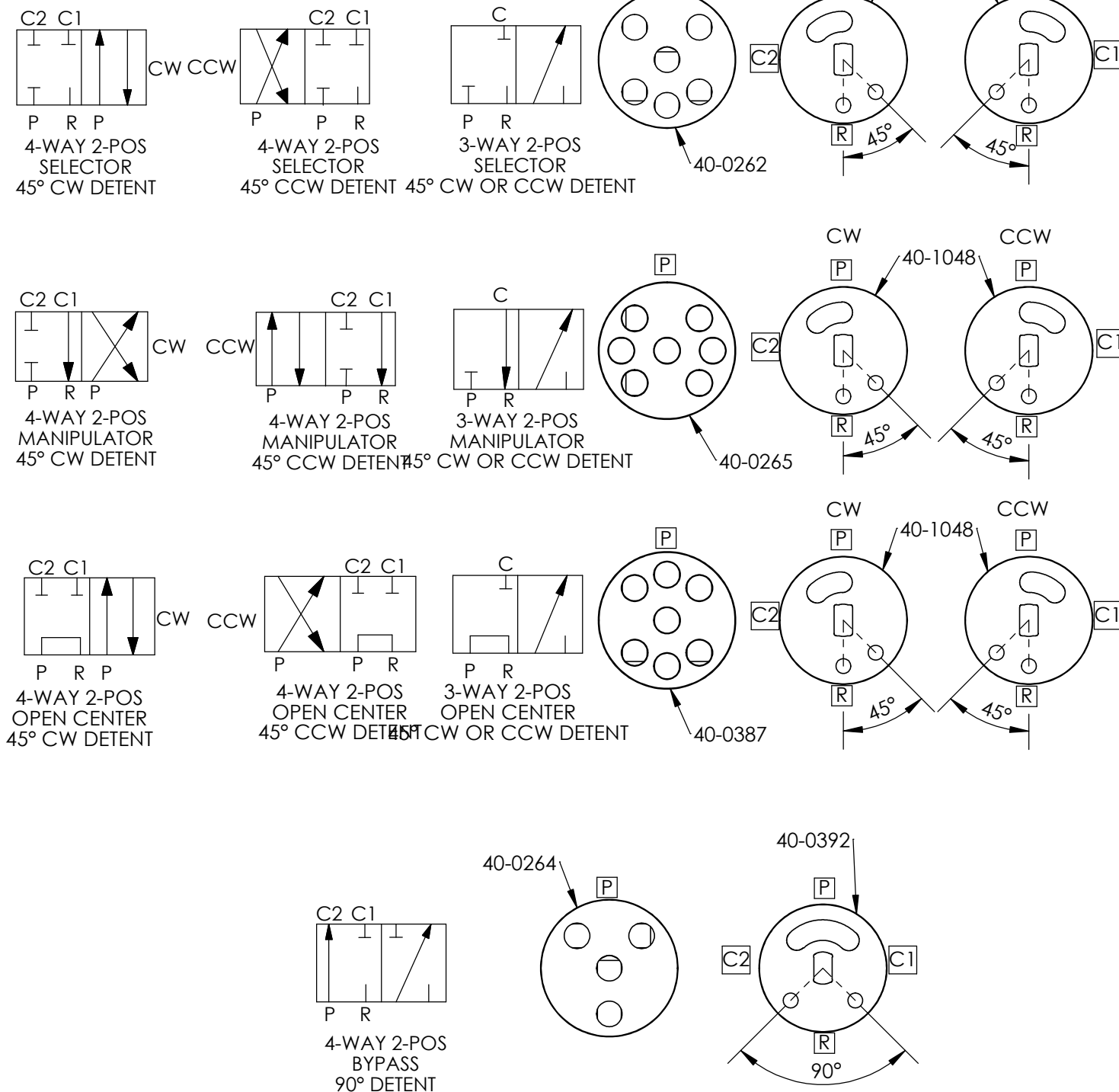
**SIZE**  
**A**

**REV**  
**16**

SHEET 6 OF 20

Notes:

- Rotor and Detent Disc Part No.'s displayed



| PacSeal Rotor Configurations | Common Industry Terminology |
|------------------------------|-----------------------------|
| Manipulator                  | Motor Spool / Float Center  |
| Selector                     | All Blocked / Closed Center |
| Bypass                       | Diverter                    |
| Open Center                  | Tandem Center               |
| All Blocked                  | -                           |
| Return Center                | Open Center                 |
| Crossover                    | -                           |

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**TITLE**  
**SV-50 Rotor Flow and Detent Disc 2-Position Options**

**SIZE**  
**A**

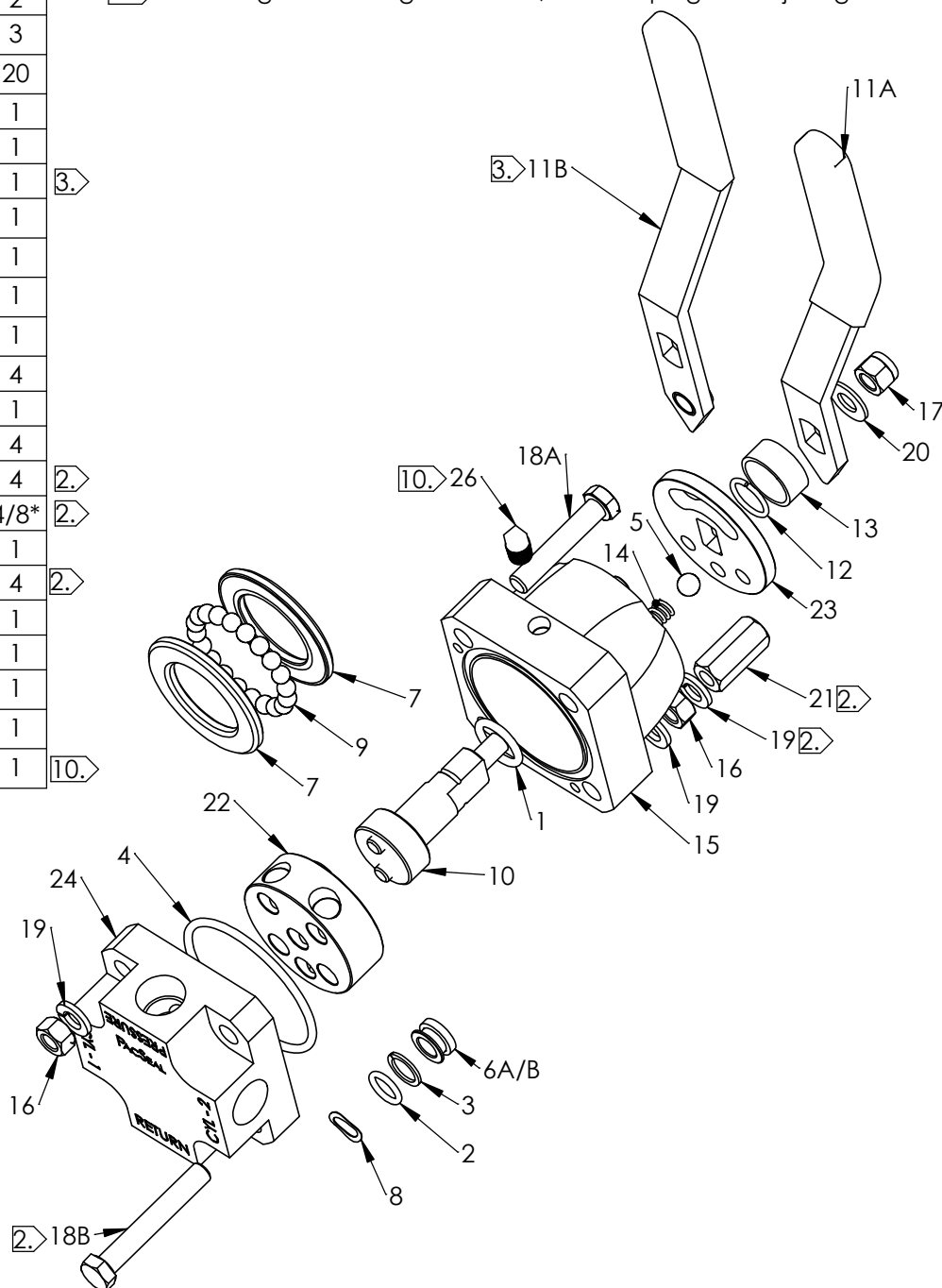
**REV**  
**16**

SHEET 7 OF 20

| ITEM NO. | PART NUMBER | DESCRIPTION         | QTY. |
|----------|-------------|---------------------|------|
| 1        | 23-1125     | O-Ring              | 1    |
| 2        | 23-1337     | O-Ring              | 3    |
| 3        | 23-1414     | Backup Ring         | 3    |
| 4        | 23-1415     | O-Ring              | 1    |
| 5        | 40-0049     | Ball, Bearing       | 1    |
| 6A       | 40-0219     | Seal Ring, Standard | 3    |
| 6B       | 40-4429     | Seal Ring, 10k/SC   | 3    |
| 7        | 40-0227     | Thrust Washer       | 2    |
| 8        | 40-0237     | Wave Spring         | 3    |
| 9        | 40-0259     | Ball, Bearing       | 20   |
| 10       | 40-0275     | Shaft               | 1    |
| 11A      | 40-0280     | Handle, Manual      | 1    |
| 11B      | 40-0647     | Handle, Remote      | 1    |
| 12       | 40-0289     | Retaining Ring      | 1    |
| 13       | 40-0292     | Spacer, Handle      | 1    |
| 14       | 40-0296     | Spring              | 1    |
| 15       | 40-0353     | Housing             | 1    |
| 16       | 50-0078     | Hex Nut             | 4    |
| 17       | 50-0092     | Locknut             | 1    |
| 18A      | 50-0098     | Bolt                | 4    |
| 18B      | 50-0267     | Bolt                | 4    |
| 19       | 50-0103     | Lock Washer         | 4/8* |
| 20       | 50-0107     | Washer, Shaft       | 1    |
| 21       | 50-0461     | Nut, Panel Mount    | 4    |
| 22       | Note 4      | Rotor               | 1    |
| 23       | Note 4      | Detent Disc         | 1    |
| 24       | Note 5      | Body                | 1    |
| 25       | 50-0237     | Grip, Handle        | 1    |
| 26       | 50-0732     | Plug                | 1    |

**Notes:**

1. Standard Inline Ported SV-50 shown for illustration purposes. (Refer to Model Configuration for options.)
2. Panel Mount Option.
3. Remote Handle Option
4. See sheets 6-7 "Rotor and Detent Shift Options" for replacement parts.
5. See sheet 9 "SV-50 Porting Options" for Body option part numbers.
6. See sheets 10-17 for other operator and actuator options.
7. Contact PacSeal for Viton or EPR O-rings.
8. Refer to SV-50 Maintenance Instructions for more details.
9. Spring Centered valve requires special repair kits.
10. For long-term storage after use, remove plug and inject grease.



\*Qty depends on Panel Mount vs.  
Standard Bolt Option

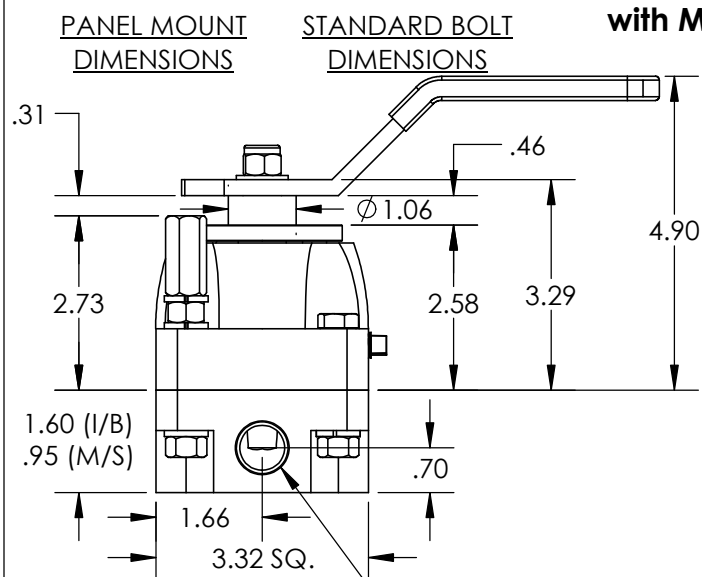
**PACSEAL** →  
← **HYDRAULICS**

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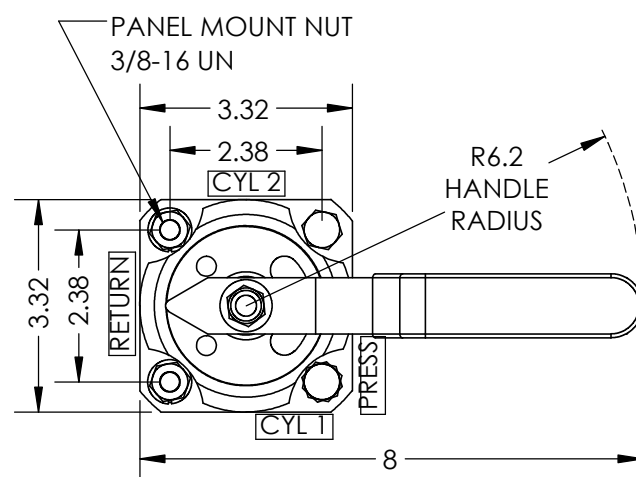
**TITLE**  
**SV-50**  
**General Assembly**  
**Overview**

**SIZE**  
**A**  
**REV**  
**16**  
SHEET 8 OF 20

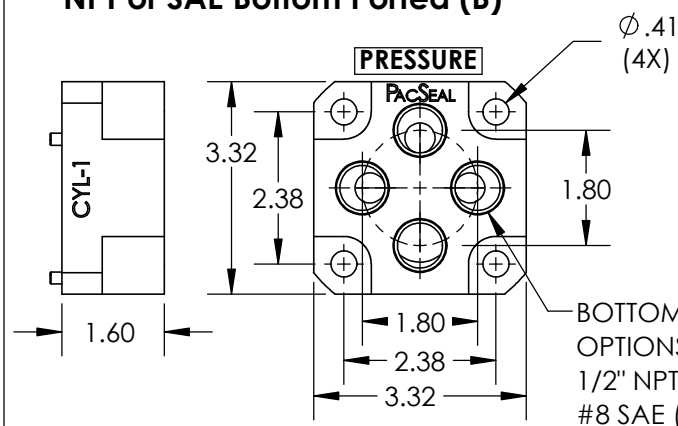
# **NPT or SAE Inline Ported (I) with Manual Operator**



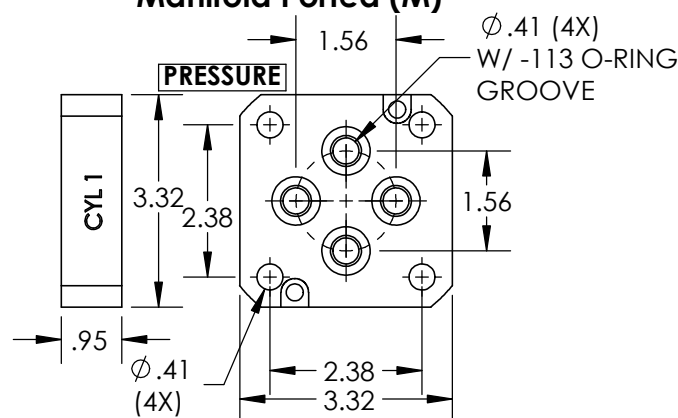
INLINE PORTED OPTIONS (I):  
3/8" NPT, 1/2" NPT, OR #8 SAE (4X)



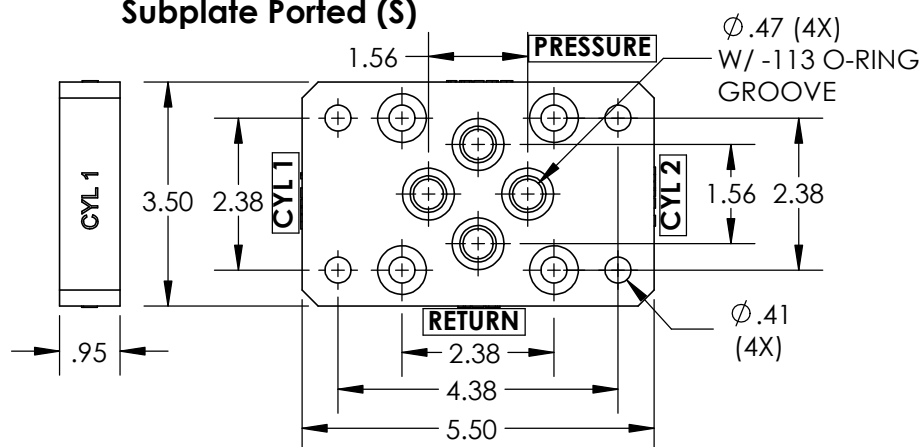
## **NPT or SAE Bottom Ported (B)**



## **Manifold Ported (M)**



## **Subplate Ported (S)**



| Body Option Part Numbers |                   |                   |
|--------------------------|-------------------|-------------------|
| Body Type                | NPT Body Part No. | SAE Body Part No. |
| Inline [3/8"] (I)        | 40-1424           | N/A               |
| Inline [1/2"] (I)        | 40-1425           | 40-2237           |
| Bottom [1/2"] (B)        | 40-1030           | 40-2328           |
| Manifold (M)             | 40-1025           |                   |
| Subplate (S)             | 40-3927           |                   |

| Weight (lb.) of Manual Valve Porting Option |    |
|---------------------------------------------|----|
| Inline (I)                                  | 9  |
| Bottom (B)                                  | 9  |
| Manifold (M)                                | 8  |
| Subplate (S)                                | 11 |

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**TITLE**  
**SV-50 Porting Options  
with Manual Operator  
Installation Drawing**

**SIZE**  
**A**

**REV**  
**16**

**SHEET 9 OF 20**

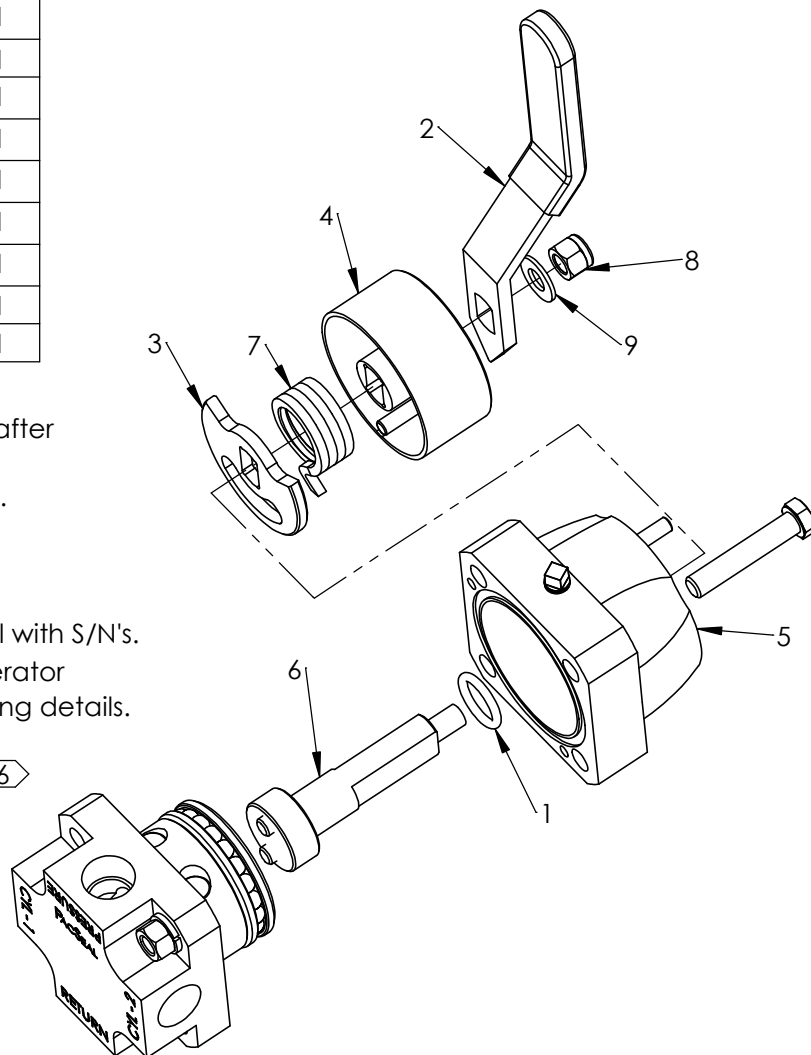
| ITEM NO. | PART NUMBER | DESCRIPTION                     | QTY. |
|----------|-------------|---------------------------------|------|
| 1        | 23-1125     | O-ring                          | 1    |
| 2        | 40-0280     | Handle, Standard SV-50          | 1    |
| 3        | 40-0757     | Detent Disc, Spring Centered    | 1    |
| 4        | 40-4007     | Housing, Spring                 | 1    |
| 5        | 40-4008     | Housing                         | 1    |
| 6        | 40-4011     | Shaft, Spring Centered          | 1    |
| 7        | 40-4629     | Torsion Spring, Spring Centered | 1    |
| 8        | 50-0092     | Locknut                         | 1    |
| 9        | 50-0107     | Washer, Shaft                   | 1    |

**Notes:**

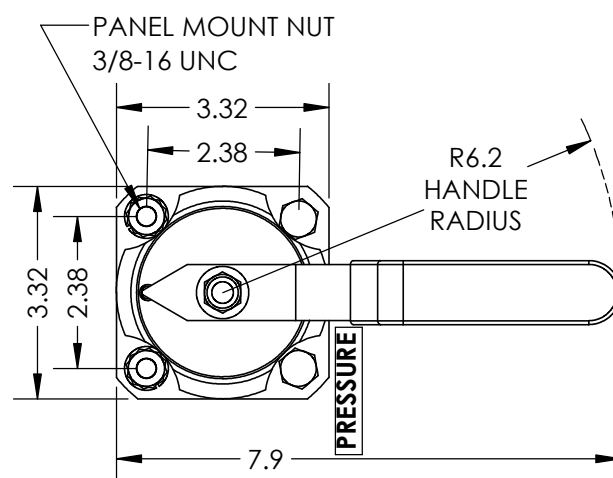
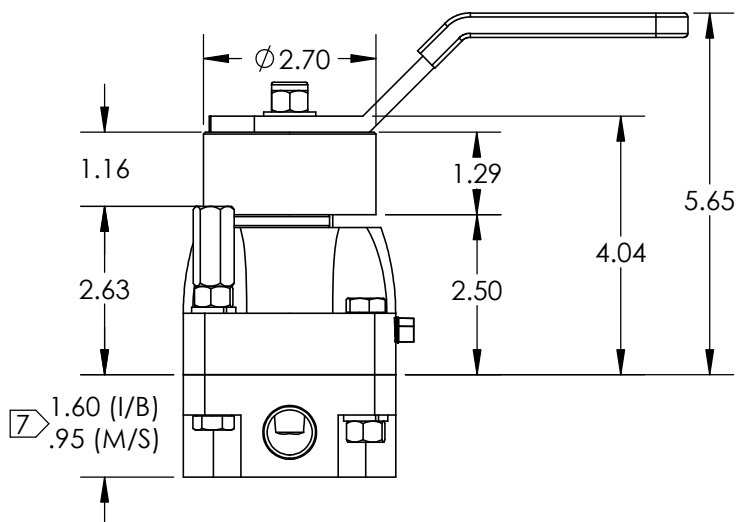
1. Spring Centered operator centers the rotor after manual shifting.
2. Retrofitting an existing valve is not an option.
3. Working Pressure (Liquid) - 3000 psi
4. Working Pressure (Gas) - 2000 psi
5. Handle shifting torque - 15 lbf-ft.
6. Special repair kits needed. Contact PacSeal with S/N's.
7. See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for other porting details.

| Kit Description  | Repair Kit Part Numbers by Rotor Type |             |        |             |
|------------------|---------------------------------------|-------------|--------|-------------|
|                  | Selector                              | Manipulator | Bypass | Open Center |
| O-ring Kit       | 40-4735                               |             |        |             |
| Seal Kit         | 40-4736                               |             |        |             |
| Minor Repair Kit | 40-4737                               | TBD         | TBD    | 40-4815     |
| Major Repair Kit | 40-4738                               | TBD         | TBD    | 40-4816     |

6



**PANEL MOUNT DIMENSIONS**      **STANDARD BOLT DIMENSIONS**

**Weight (lb.) of Manual Valve Porting Option**

|              |    |
|--------------|----|
| Inline (I)   | 11 |
| Bottom (B)   | 11 |
| Manifold (M) | 10 |
| Subplate (S) | 13 |

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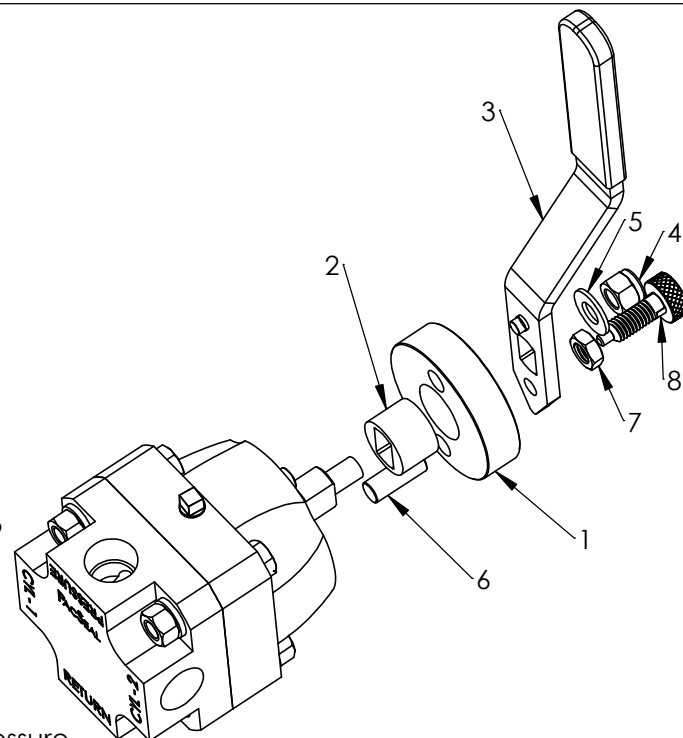
**TITLE** SV-50 Spring Centered Operator Installation and Assembly Drawing

**SIZE** A  
**REV** 16  
SHEET 10 OF 20

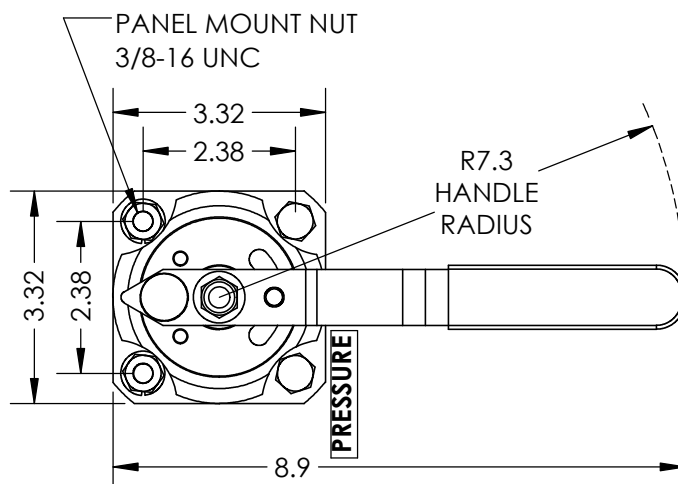
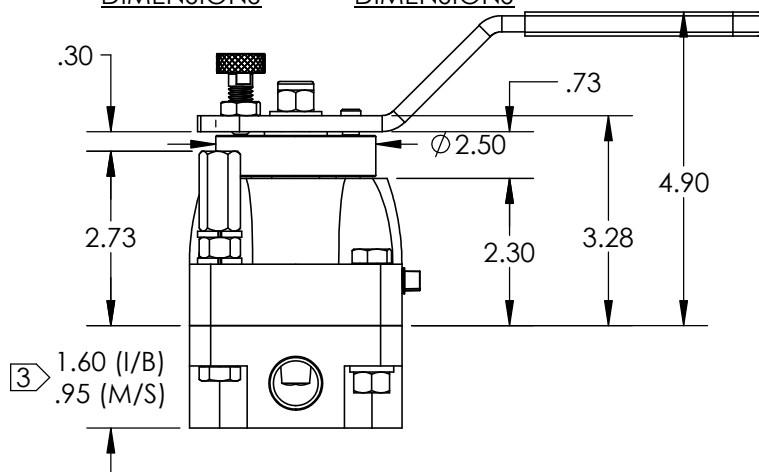
| ITEM NO. | PART NUMBER | DESCRIPTION                | QTY. |
|----------|-------------|----------------------------|------|
| 1        | 40-3725     | Detent Plate               | 1    |
| 2        | 40-3727     | Spacer                     | 1    |
| 3        | 40-3738     | Handle Ass'y               | 1    |
| 4        | 50-0092     | Locknut                    | 1    |
| 5        | 50-0107     | Washer, Shaft              | 1    |
| 6        | 50-0329     | Pin                        | 1    |
| 7        | 50-0535     | Hex Jam Nut                | 1    |
| 8        | 50-0536     | Retractable Spring Plunger | 1    |

**Notes:**

1. Pin Lock Detent operator prevents accidental shifting and ensures two-handed operation.
2. Can easily be retrofitted in field - reference P/N 40-3739 for Pin Lock Detent Kit.
3. See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for other porting details.

**2 Conversion Instructions:**

1. Ensure that the valve is not receiving hydraulic pressure
2. Remove the existing Locknut, Washer, Handle, Detent Disc, Spring, and Ball
3. Add the Pin (6) to the empty hole
4. Align the Detent Plate (1) with the two pins to match the drawing
5. Insert the Spacer (2) into the Detent Plate (1)
6. Assemble the Handle (3) with its pin inside the slot
7. Add the Washer (5) then tighten the Locknut (4) to the Shaft
8. Thread the jam nut (7) to the top of the Retractable Spring Plunger (8)
9. Thread the Retractable Spring Plunger to the Handle until the plunger just makes contact with the bottom of the hole
10. Tighten the jam nut of the plunger to the handle
11. Dry test each position to ensure that the Retractable Spring Plunger is fully engaged in each hole

**PANEL MOUNT  
DIMENSIONS****STANDARD BOLT  
DIMENSIONS****Weight (lb.) of Manual  
Valve Porting Option**

|              |    |
|--------------|----|
| Inline (I)   | 10 |
| Bottom (B)   | 10 |
| Manifold (M) | 9  |
| Subplate (S) | 12 |

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**TITLE** SV-50  
Pin Lock Detent  
Operator Installation  
and Assembly Drawing

**SIZE** A  
**REV** 16  
SHEET 11 OF 20

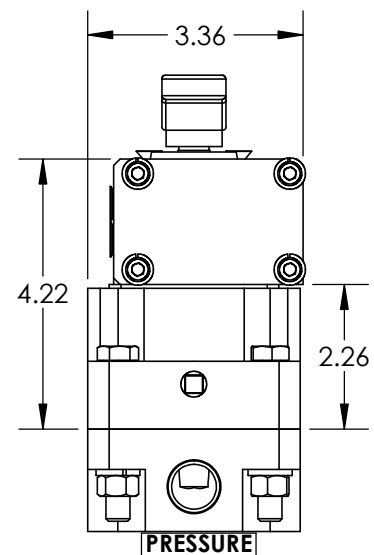
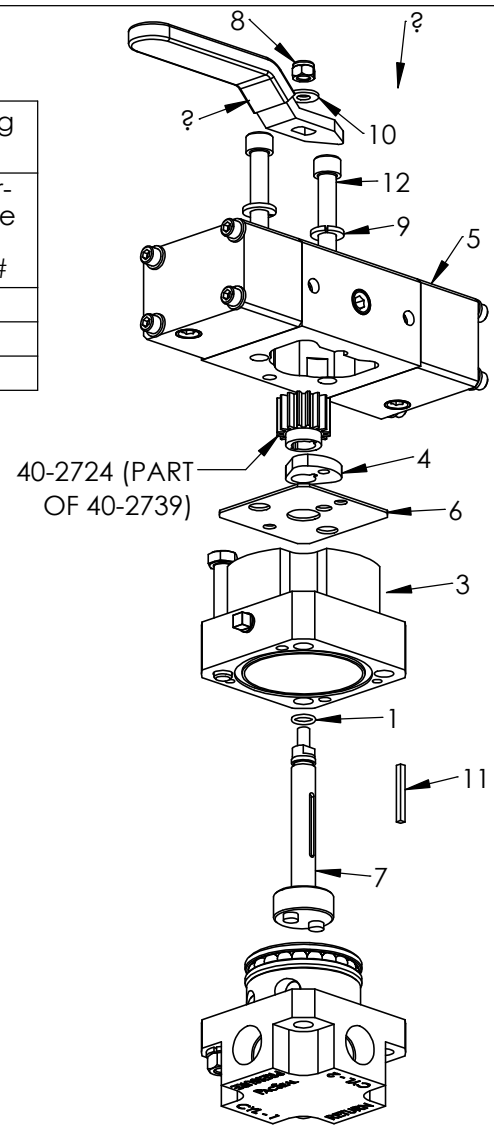
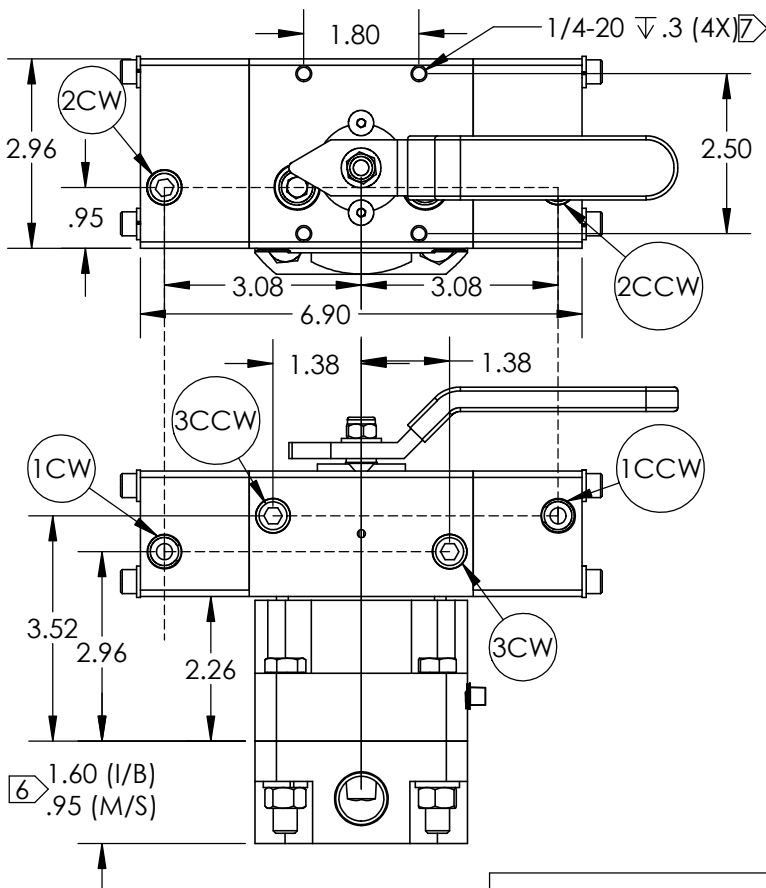
| ITEM NO. | PART NUMBER | DESCRIPTION                | QTY. |
|----------|-------------|----------------------------|------|
| 1        | 23-1344     | O-Ring                     | 1    |
| 2A       | 40-3108     | Straight Handle            | 1    |
| 3        | 40-2626     | Housing, SVx-50            | 1    |
| 4        | 40-2718     | Detent, SVx-25             | 1    |
| 5        | 40-2739     | Air Actuator Ass'y, SVx-50 | 1    |
| 6        | 40-2785     | Aluminum Gasket            | 1    |
| 7        | 40-2786     | Shaft, SVx-50              | 1    |
| 8        | 50-0091     | Locknut                    | 1    |
| 9        | 50-0103     | Lock Washer                | 6    |
| 10       | 50-0106     | Washer, Shaft              | 1    |
| 11       | 50-0444     | Key                        | 1    |
| 12       | 50-0527     | Bolt                       | 2    |

### 1/4 NPT Air Inlet Porting Location Options

| Clockwise (CW) Option # | Counter-Clockwise (CCW) Option # |
|-------------------------|----------------------------------|
| 1CW                     | 1CCW                             |
| 2CW                     | 2CCW                             |
| 3CW                     | 3CCW                             |

### Notes:

- Model displays SVX with 2-Position 90° Direct Air actuation.
- Center (3rd) position is accomplished with manual override.
- Recommended air actuator working pressure - 80 to 125 psi
- Actuator material - Aluminum (anodized)
- Retrofitting an existing valve is not an option.
- See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for other porting details.
- Panel mount compatible.



### Weight (lb.) of Manual Valve Porting Option

|              |    |
|--------------|----|
| Inline (I)   | 13 |
| Bottom (B)   | 13 |
| Manifold (M) | 12 |
| Subplate (S) | 15 |

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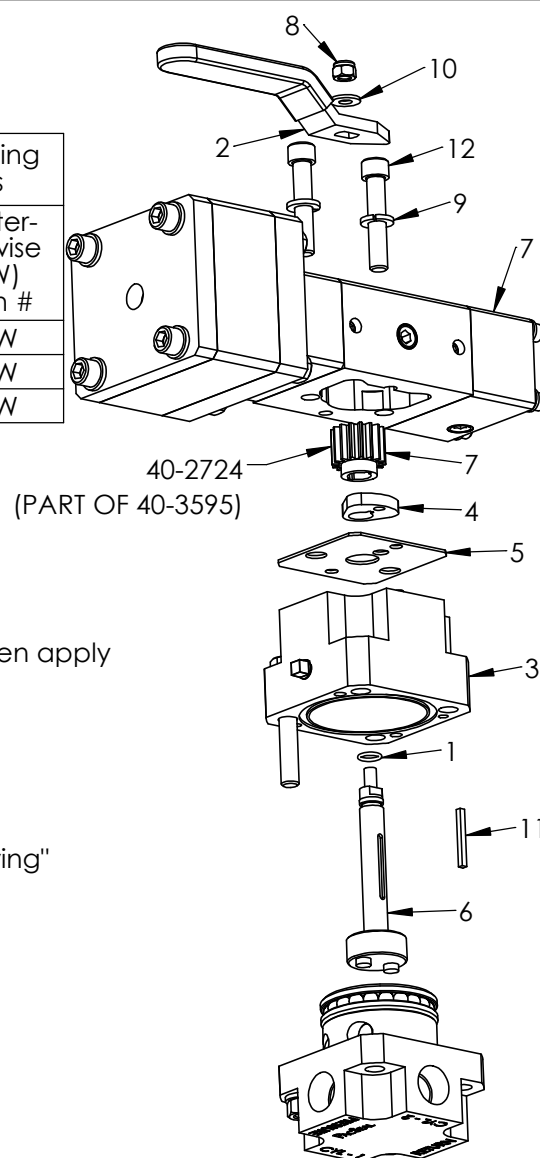
TITLE **SVX-50 2-Position 90° Direct Air Actuation Installation and Assembly Drawing**

SIZE **A** REV **16**  
SHEET 12 OF 20

| ITEM NO. | PART NUMBER | DESCRIPTION                     | QTY. |
|----------|-------------|---------------------------------|------|
| 1        | 23-1344     | O-Ring                          | 1    |
| 2        | 40-3108     | Straight Handle                 | 1    |
| 3        | 40-2626     | Housing, SVx-50                 | 1    |
| 4        | 40-2718     | Detent, SVx-25                  | 1    |
| 5        | 40-2785     | Aluminum Gasket                 | 1    |
| 6        | 40-2786     | Shaft, SVx-50                   | 1    |
| 7        | 40-3595     | 3-Position Air Actuator, SVx-50 | 1    |
| 8        | 50-0091     | Locknut                         | 1    |
| 9        | 50-0103     | Lock Washer                     | 6    |
| 10       | 50-0106     | Washer, Shaft                   | 1    |
| 11       | 50-0444     | Key                             | 1    |
| 12       | 50-0527     | Bolt                            | 2    |

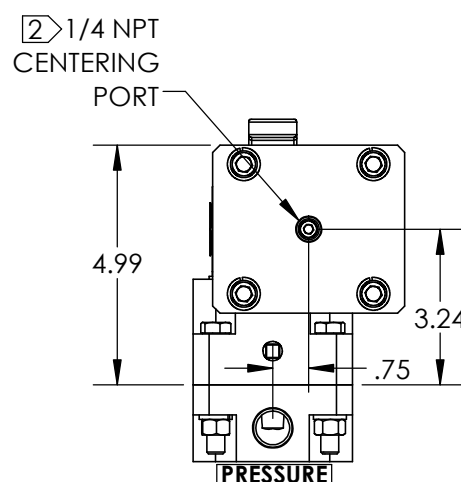
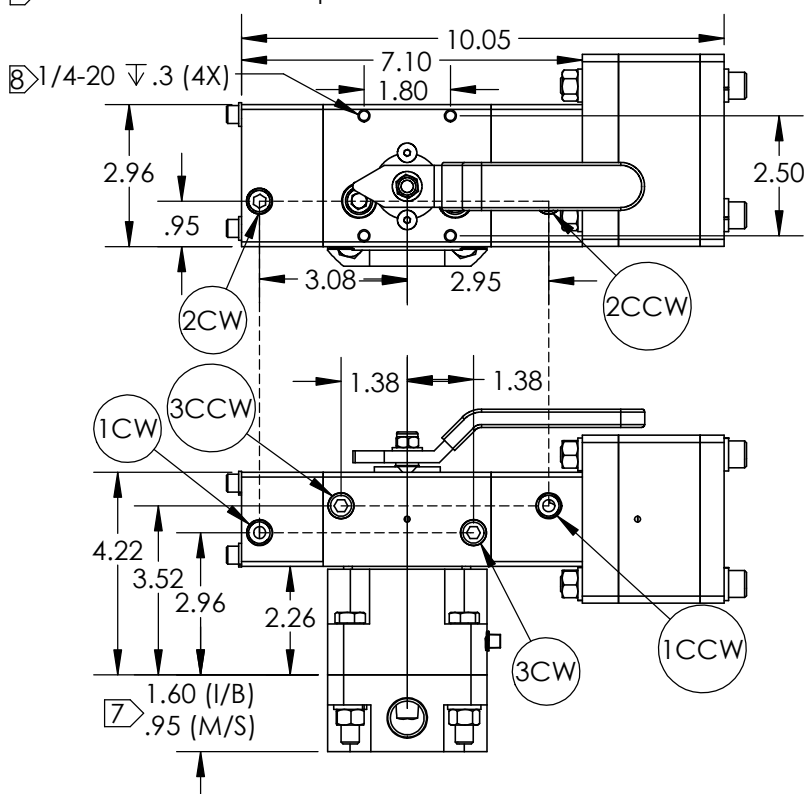
### 1/4 NPT Air Inlet Porting Location Options

| Clockwise (CW) Option # | Counter-Clockwise (CCW) Option # |
|-------------------------|----------------------------------|
| 1CW                     | 1CCW                             |
| 2CW                     | 2CCW                             |
| 3CW                     | 3CCW                             |



### Notes:

- Model displays SVX with 3-Position 90° Direct Air actuation.
- For center position, first apply air pressure to "CENTERING PORT", then apply air pressure to a "CW" port.
- For 2-position operation, apply air to "CW" and "CCW" ports only.
- Recommended air actuator working pressure - 80 to 125 psi
- Actuator material - Aluminum (anodized)
- Retrofitting an existing valve is not an option.
- See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for other porting details.
- Panel mount compatible.



### Weight (lb.) of Manual Valve Porting Option

|              |    |
|--------------|----|
| Inline (I)   | 18 |
| Bottom (B)   | 18 |
| Manifold (M) | 17 |
| Subplate (S) | 15 |

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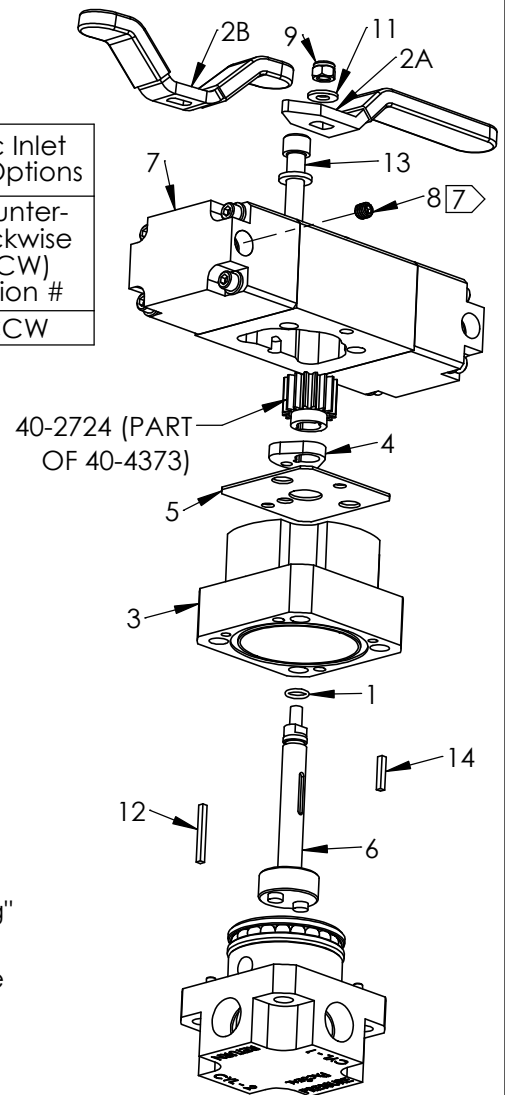
TITLE **SVX-50 3-Position 90° Direct Air Actuation Installation and Assembly Drawing**

SIZE **A** REV **16**  
SHEET 13 OF 20

| ITEM NO. | PART NUMBER | DESCRIPTION                      | QTY. |
|----------|-------------|----------------------------------|------|
| 1        | 23-1344     | O-Ring                           | 1    |
| 2A       | 40-3108     | Straight Handle                  | 1    |
| 2B       | 40-2803     | Wing Handle                      |      |
| 3        | 40-2626     | Housing, SVx-50                  | 1    |
| 4        | 40-2718     | Detent, SVx-25                   | 1    |
| 5        | 40-2785     | Aluminum Gasket                  | 1    |
| 6        | 40-2786     | Shaft, SVx-50                    | 1    |
| 7        | 40-4373     | Hydraulic Actuator Ass'y, SVx-50 | 1    |
| 8        | 40-4868     | Orifice (Flow Reducer)           |      |
| 9        | 50-0091     | Locknut                          | 1    |
| 10       | 50-0103     | Lock Washer                      | 6    |
| 11       | 50-0106     | Washer, Shaft                    | 1    |
| 12       | 50-0444     | Key                              | 1    |
| 13       | 50-0527     | Bolt                             | 2    |
| 14       | 50-0561     | Key                              | 1    |

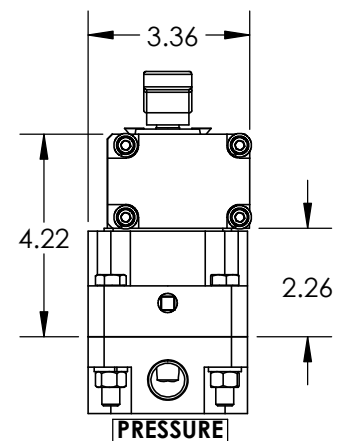
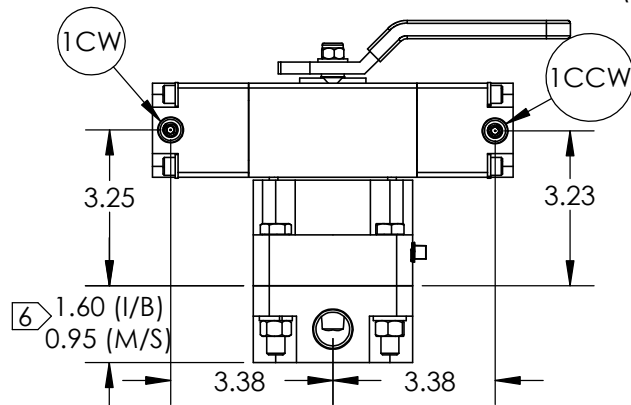
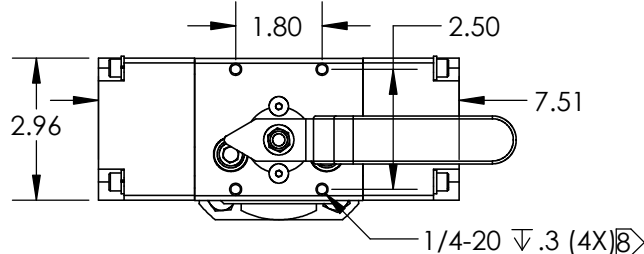
### 1/4 NPT Hydraulic Inlet Porting Location Options

| Clockwise (CW) Option # | Counter-Clockwise (CCW) Option # |
|-------------------------|----------------------------------|
| 1CW                     | 1CCW                             |



### Notes:

- Model displays SVX with 2-Position 90° Direct Hydraulic actuation.
- Center (3rd) position is accomplished with manual override.
- Retrofitting an existing valve is not an option.
- Recommended hydraulic actuator working pressure - 350 to 1200 psi
  - If operating at > 800 psi, then it is strongly recommended to include flow restrictors or a flow control valve just upstream.
- Actuator material - Aluminum (anodized)
- See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for other porting details.
- For low flow rate hydraulic pilot, set screw orifices (8) may need to be removed.
- Panel mount compatible.



### Weight (lb.) of Manual Valve Porting Option

|              |    |
|--------------|----|
| Inline (I)   | 14 |
| Bottom (B)   | 14 |
| Manifold (M) | 13 |
| Subplate (S) | 16 |

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TITLE **SVX-50 2-Position 90° Direct Hydraulic Actuation Installation and Assembly Drawing**

SIZE **A** REV **16**  
SHEET 14 OF 20

| ITEM NO. | PART NUMBER | DESCRIPTION              | QTY. |
|----------|-------------|--------------------------|------|
| 1        | 23-1344     | O-Ring                   | 1    |
| 2        | 40-2626     | Housing                  | 1    |
| 3        | 40-2718     | Detent                   | 1    |
| 4        | 40-2785     | Aluminum Gasket          | 1    |
| 5        | 40-2786     | Shaft                    | 1    |
| 6        | 40-2803     | Handle, Wing             | 1    |
| 7        | 40-4868     | Orifice (Flow Reducer)   | 1    |
| 8        | 40-4984     | 2-Pos Hydraulic Actuator | 1    |
| 9        | 50-0091     | Locknut                  | 1    |
| 10       | 50-0103     | Lock Washer              | 6    |
| 11       | 50-0106     | Washer, Shaft            | 1    |
| 12       | 50-0444     | Key                      | 1    |
| 13       | 50-0527     | SHCS                     | 2    |
| 14       | 50-0561     | Key                      | 1    |
| 15       | 80-0367     | Position Sensor, Linear  | 1    |

1/4 NPT Air Inlet Porting  
Location Options

Clockwise  
(CW)  
Option #

Counter-  
Clockwise  
(CCW)  
Option #

1CW

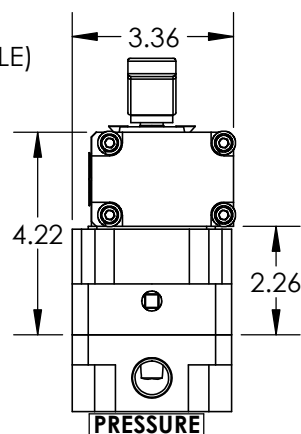
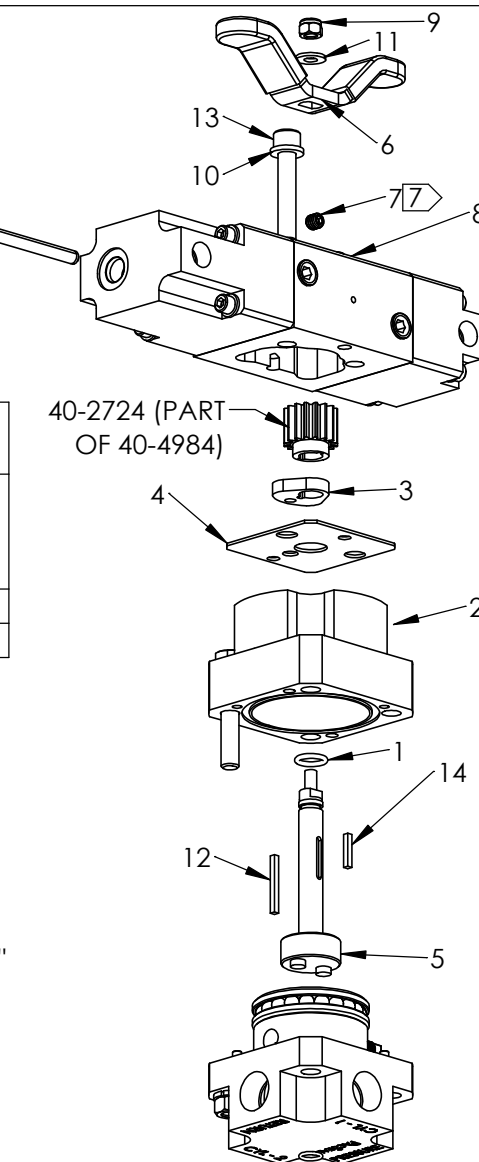
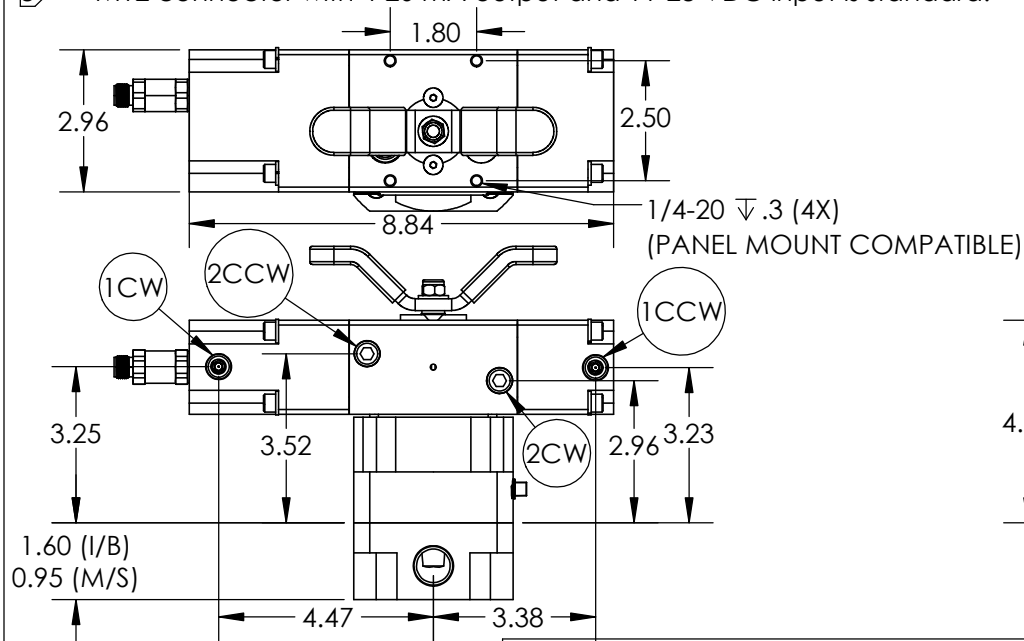
1CC

2CW

2CCW

#### Notes:

- Model displays SVX with 2-Position 90° Direct Hydraulic actuation.
- Center (3rd) position is accomplished with manual override.
- Retrofitting an existing valve is not an option.
- Recommended hydraulic actuator working pressure - 350 to 1200 psi
  - If operating at > 800 psi, then it is strongly recommended to include flow restrictors or a flow control valve just upstream.
- Actuator material - Aluminum (anodized)
- See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for other porting details.
- For low flow rate hydraulic pilot, set screw orifices (8) may need to be removed.
- M12 connector with 4-20 mA output and 11-28 VDC input is standard.



#### Weight (lb.) of Manual Valve Porting Option

|              |    |
|--------------|----|
| Inline (I)   | 14 |
| Bottom (B)   | 14 |
| Manifold (M) | 13 |
| Subplate (S) | 16 |

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TITLE **SVX-50 2-Pos. 90°  
Direct Hyd. Actuation w/  
Pos. Sensor Installation  
and Assembly dwg**

SIZE

**A**

REV

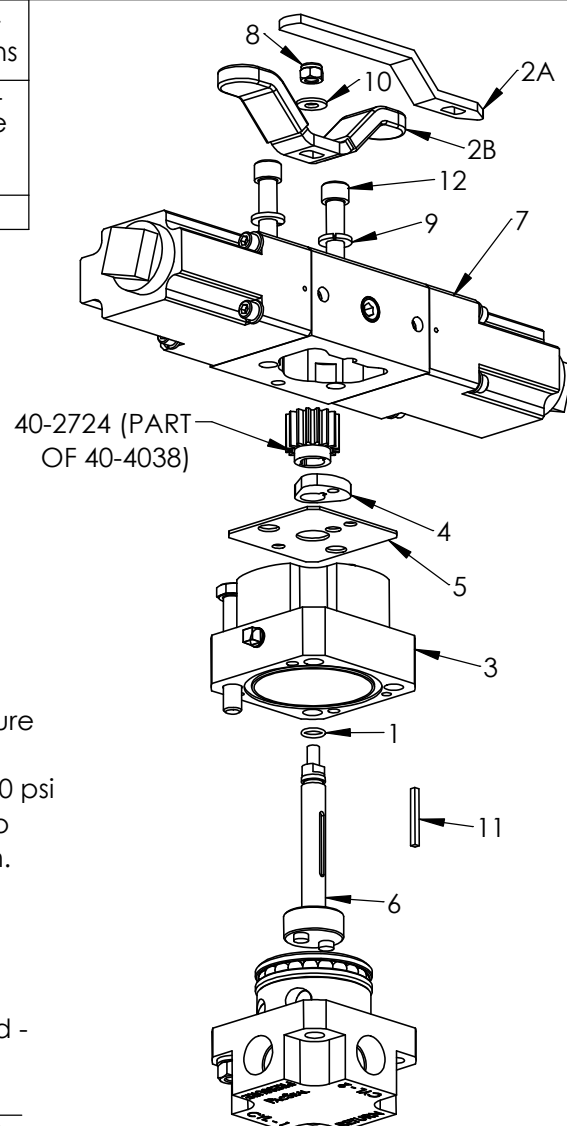
**16**

SHEET 15 OF 20

| ITEM NO. | PART NUMBER | DESCRIPTION                           | QTY. |
|----------|-------------|---------------------------------------|------|
| 1        | 23-1344     | O-Ring                                | 1    |
| 2A       | 40-0279     | Straight Handle                       | 1    |
| 2B       | 40-2803     | Wing Handle                           | 1    |
| 3        | 40-2626     | Housing, SVx-50                       | 1    |
| 4        | 40-2718     | Detent, SVx-25                        | 1    |
| 5        | 40-2785     | Aluminum Gasket                       | 1    |
| 6        | 40-2786     | Shaft, SVx-50                         | 1    |
| 7        | 40-4038     | Hydraulic Actuator Ass'y, SVx-25 / 50 | 1    |
| 8        | 50-0091     | Locknut                               | 1    |
| 9        | 50-0103     | Lock Washer                           | 6    |
| 10       | 50-0106     | Washer, Shaft                         | 1    |
| 11       | 50-0444     | Key                                   | 1    |
| 12       | 50-0527     | Bolt                                  | 2    |

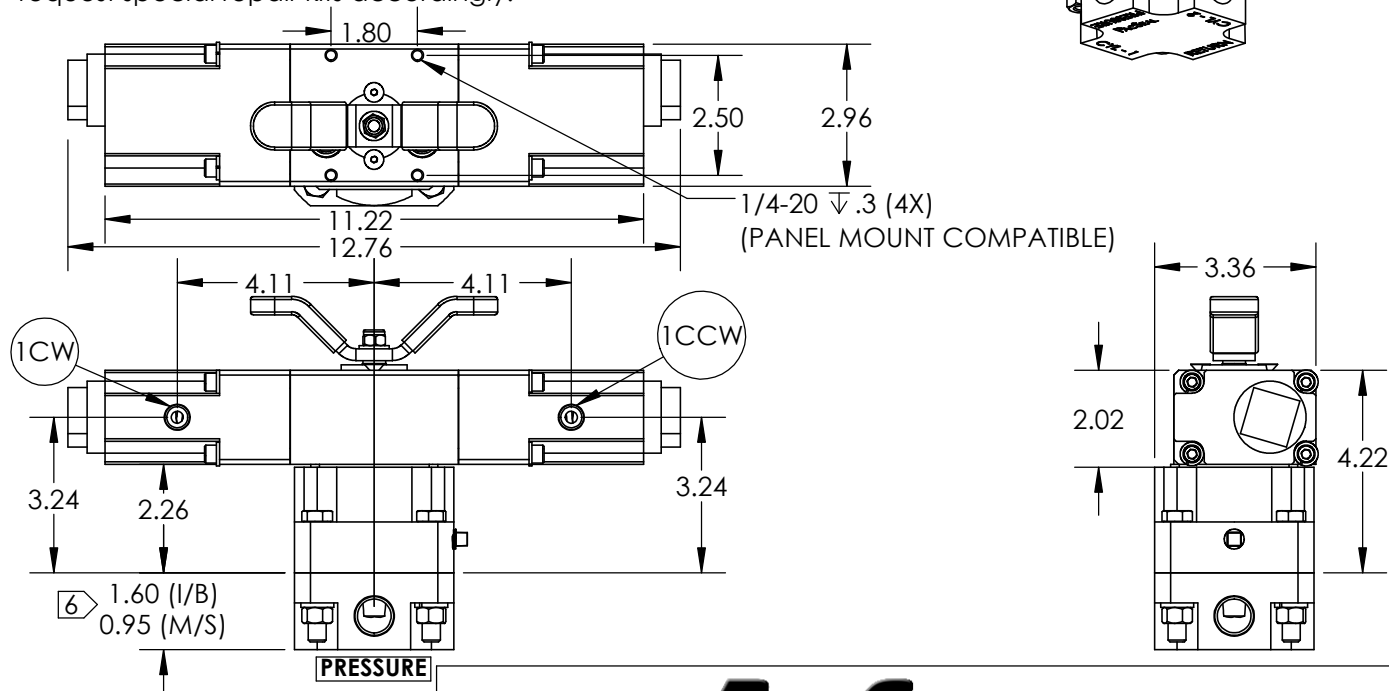
1/4 NPT Hydraulic Inlet  
Porting Location Options

| Clockwise<br>(CW)<br>Option # | Counter-<br>Clockwise<br>(CCW)<br>Option # |
|-------------------------------|--------------------------------------------|
| 1CW                           | 1CCW                                       |



#### Notes:

- Model displays SVX with 3-Position 90° Spring Centered Direct Hydraulic actuation.
- Center (3rd) position is accomplished when hydraulic pilot pressure is relieved.
- Recommended hydraulic actuator working pressure - 350 to 1200 psi
  - If operating at > 800 psi, then it is strongly recommended to include flow restrictors or a flow control valve just upstream.
- Actuator material - Aluminum (anodized)
- Retrofitting an existing valve is not an option.
- See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for other porting details.
- For 6000 psi working pressure, high pressure seal rings are required - request special repair kits accordingly.



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← **HYDRAULICS**

Weight (lb.) of Manual  
Valve Porting Option

|              |    |
|--------------|----|
| Inline (I)   | 16 |
| Bottom (B)   | 16 |
| Manifold (M) | 15 |
| Subplate (S) | 18 |

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TITLE **SVX-50 3-Position 90°  
Spring Centered Direct  
Hydraulic Actuation  
Installation and  
Assembly Drawing**

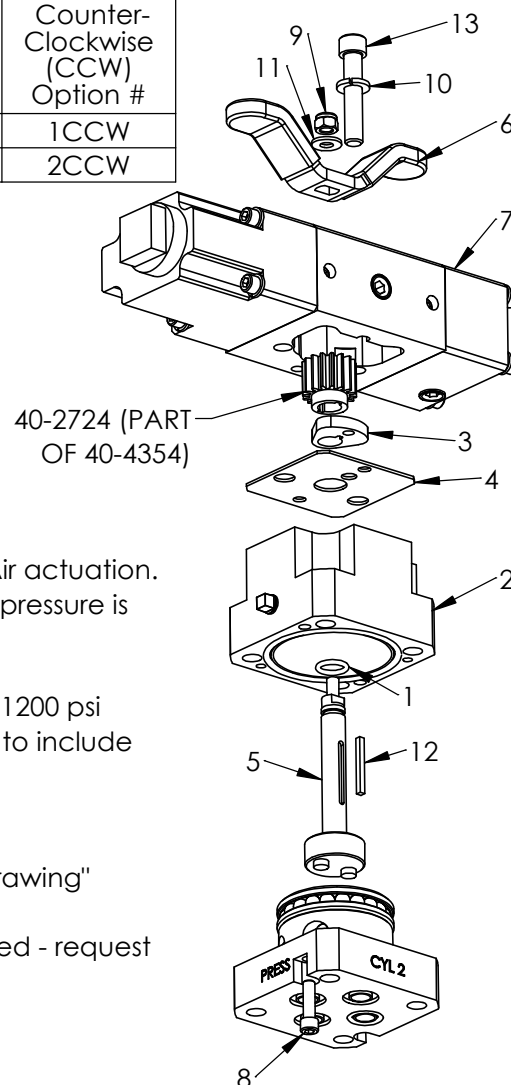
SIZE **A** REV **16**  
SHEET 16 OF 20



| ITEM NO. | PART NUMBER | DESCRIPTION                    | QTY. |
|----------|-------------|--------------------------------|------|
| 1        | 23-1337     | O-Ring                         | 4    |
| 2        | 40-2626     | Housing, SVx-50                | 1    |
| 3        | 40-2718     | Detent, SVx-25                 | 1    |
| 4        | 40-2785     | Aluminum Gasket                | 1    |
| 5        | 40-2786     | Shaft, SVx-50                  | 1    |
| 6        | 40-2803     | Handle, SVx-25 / 50            | 1    |
| 7        | 40-4354     | SVx-25 / 50 Air Actuator Ass'y | 1    |
| 8        | 50-0066     | Bolt                           | 2    |
| 9        | 50-0091     | Locknut                        | 1    |
| 10       | 50-0103     | Lock Washer                    | 2    |
| 11       | 50-0106     | Washer, Shaft                  | 1    |
| 12       | 50-0444     | Key                            | 1    |
| 13       | 50-0527     | Bolt                           | 2    |

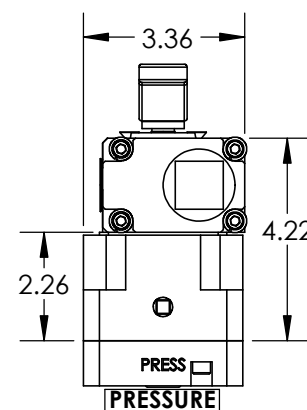
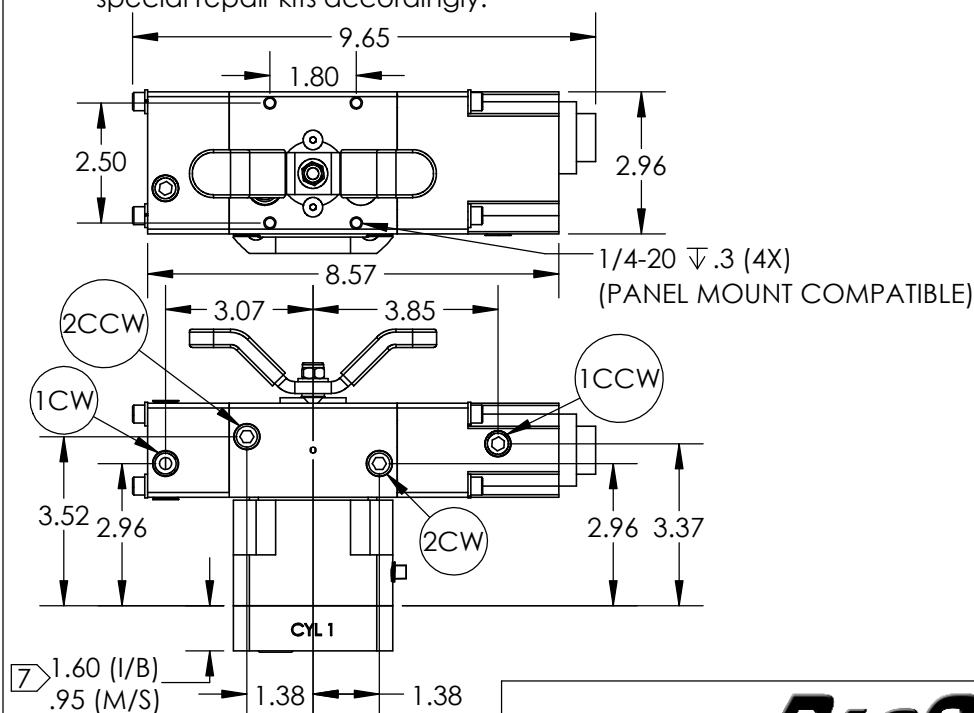
## 1/4 NPT Air Inlet Porting Location Options

| Clockwise (CW) Option # | Counter-Clockwise (CCW) Option # |
|-------------------------|----------------------------------|
| 1CW                     | 1CCW                             |
| 2CW                     | 2CCW                             |



## Notes:

- Model displays SVX with 2-Position 45° Spring Centered Direct Air actuation.
- Center (2nd) position is accomplished when air/hydraulic pilot pressure is relieved.
- Recommended air actuator operating pressure - 100 to 125 psi
- Recommended hydraulic actuator operating pressure - 350 to 1200 psi
  - If operating at > 800 psi, then it is strongly recommended to include flow restrictors or a flow control valve just upstream.
- Actuator material - Aluminum (anodized)
- Retrofitting an existing valve is not an option.
- See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for other porting details.
- For 6000 psi working pressure, high pressure seal rings are required - request special repair kits accordingly.



## Weight (lb.) of Manual Valve Porting Option

|              |    |
|--------------|----|
| Inline (I)   | 14 |
| Bottom (B)   | 14 |
| Manifold (M) | 13 |
| Subplate (S) | 16 |

**PACSEAL** →  
← **HYDRAULICS**

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## TITLE

**SVX-50 2-Position 45°  
Spring Centered (A/H)  
Actuation Installation  
and Assembly Drawing**

## SIZE

**A**

## REV

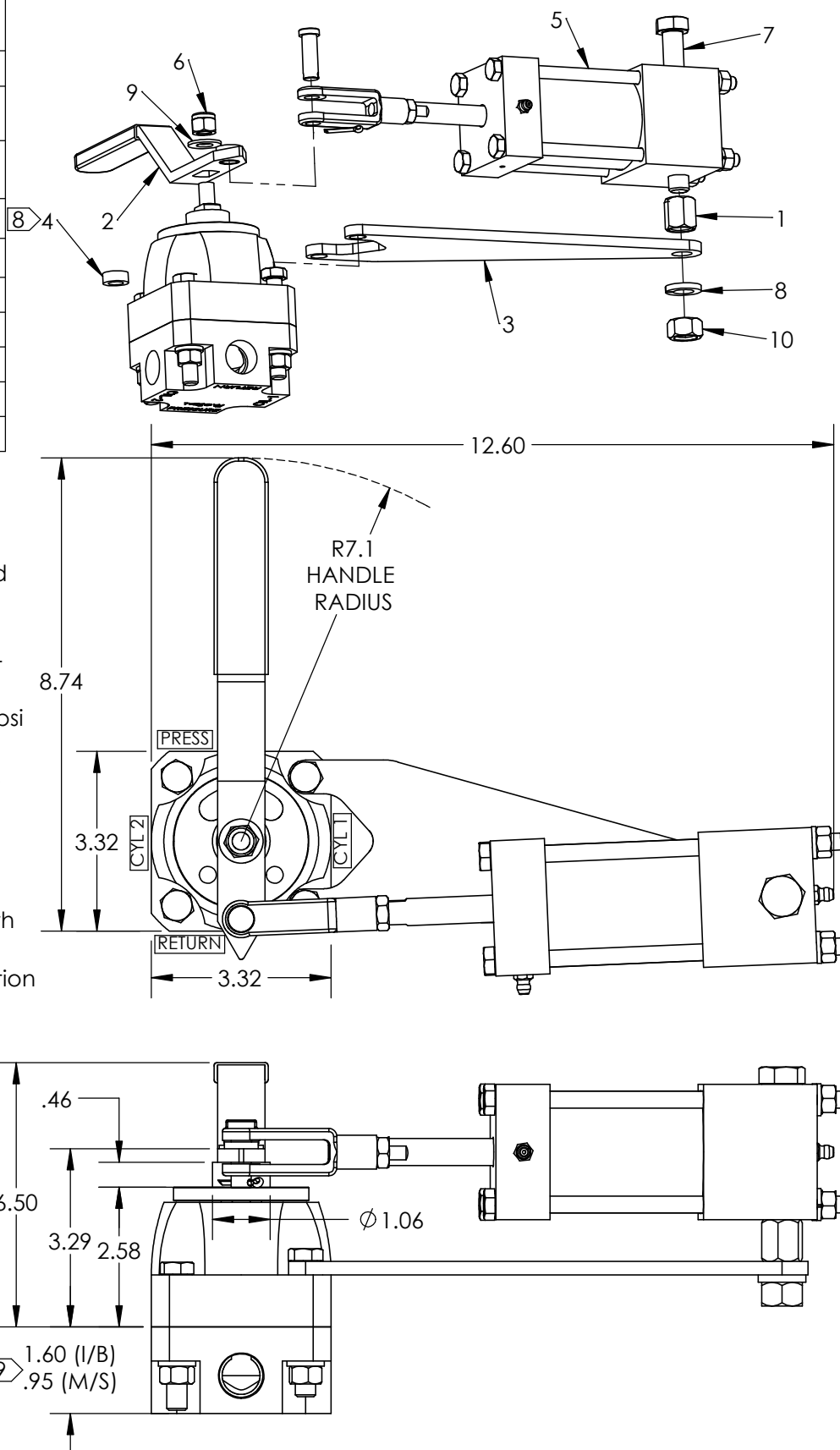
**16**

SHEET 18 OF 20

| ITEM NO. | PART NUMBER | DESCRIPTION          | QTY. |
|----------|-------------|----------------------|------|
| 1        | 40-0558     | Spacer Nut           | 1    |
| 2        | 40-0647     | Handle, Remote       | 1    |
| 3        | 40-1441     | Air Cylinder Bracket | 1    |
| 4        | 40-2616     | Spacer               | 1    |
| 5        | 40-4191     | AAC-202              | 1    |
| 6        | 50-0092     | Locknut              | 1    |
| 7        | 50-0100     | Bolt                 | 1    |
| 8        | 50-0104     | Lock Washer          | 1    |
| 9        | 50-0107     | Washer, Shaft        | 1    |
| 10       | 50-0110     | Hex Nut              | 1    |

**Notes:**

- Model displays Right Mounted Air Cylinder Actuator
- Cylinder Positions - 2
- Cylinder Air working pressure - 80 to 150 psi
- Cyl max pressure rating - 250 psi
- Cylinder Stroke - 2.13 in.
- Cylinder Bore/Rod - 2 X 1/2 in.
- Actuator Material - Aluminum (anodized)
- Spacer is only necessary if a name plate is used.
- See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for installation dimensions of other porting options.



| Standalone Actuator and Bracket Kit  |          |
|--------------------------------------|----------|
| Model Description                    | Part No. |
| Air Cylinder, AAC-202                | 40-4191  |
| Air Cylinder, AAC-202 w/ Bracket Kit | 40-4256  |
| Bracket Kit, AAC-202                 | 40-1608  |

| Weight (lb.) of Manual Valve Porting Option |    |
|---------------------------------------------|----|
| Inline (I)                                  | 15 |
| Bottom (B)                                  | 15 |
| Manifold (M)                                | 14 |
| Subplate (S)                                | 17 |

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TITLE  
**SV-50 Air Cylinder Actuator Installation and Assembly Drawing**

SIZE  
**A**

REV  
**16**

SHEET 19 OF 20

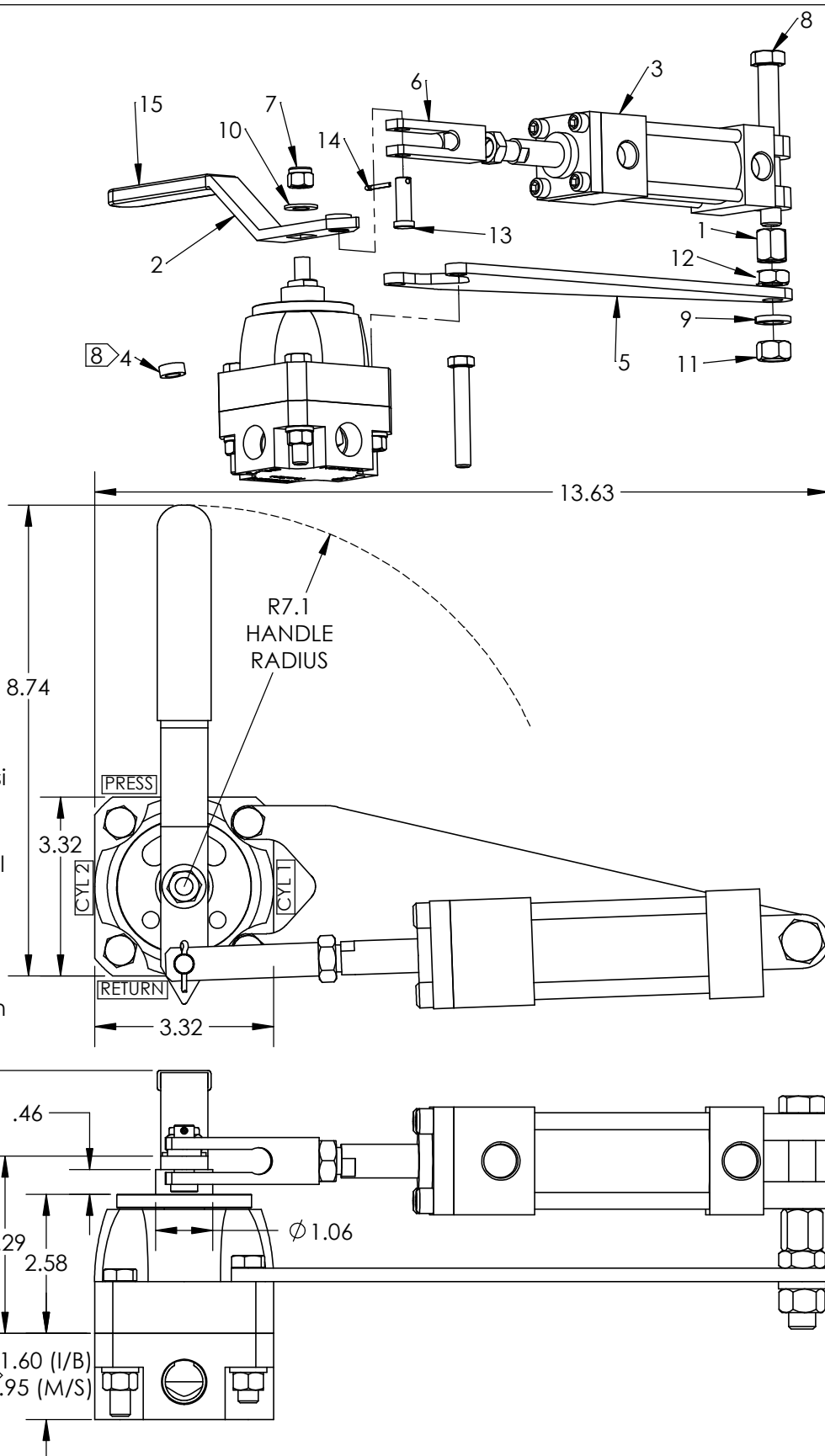
| ITEM NO. | PART NUMBER | DESCRIPTION          | QTY. |
|----------|-------------|----------------------|------|
| 1        | 40-0558     | Spacer Nut           | 1    |
| 2        | 40-0647     | Handle, Remote SV-50 | 1    |
| 3        | 40-1412     | HHC-202              | 1    |
| 4        | 40-2616     | Spacer               | 1    |
| 5        | 40-3649     | Bracket, Hydraulic   | 1    |
| 6        | 40-3650     | Clevis, Hydraulic    | 1    |
| 7        | 50-0092     | Locknut              | 1    |
| 8        | 50-0100     | Bolt                 | 1    |
| 9        | 50-0104     | Lock Washer          | 1    |
| 10       | 50-0107     | Washer, Shaft        | 1    |
| 11       | 50-0110     | Hex Nut              | 1    |
| 12       | 50-0163     | Hex Jam Nut          | 1    |
| 13       | 50-0195     | Clevis Pin           | 1    |
| 14       | 50-0196     | Cotter Pin           | 1    |
| 15       | 50-0237     | Grip, Handle         | 1    |
| 16       | 50-0394     | Jam Nut              | 1    |

**Notes:**

- Model displays Right Mounted Air Cylinder Actuator
- Cylinder Positions - 2
- Cylinder Hyd. working pressure - 500 to 1200 psi
- Cyl max pressure rating - 1500 psi
- Cylinder Stroke - 2.13 in.
- Cylinder Bore/Rod - 2 X 1/2 in.
- Actuator Material - Carbon Steel
- 8> Spacer is only necessary if a name plate is used.
- 9> See "SV-50 Porting Options with Manual Operator Installation Drawing" (Sheet 9) for installation dimensions of other porting options.

| Standalone Actuator and Bracket Kit   |          |
|---------------------------------------|----------|
| Model Description                     | Part No. |
| Hyd Cylinder, HAC-202                 | 40-1412  |
| Hyd. Cylinder, AAC-202 w/ Bracket Kit | 40-4221  |
| Bracket Kit, HAC-202                  | TBD      |

| Weight (lb.) of Manual Valve Porting Option |    |
|---------------------------------------------|----|
| Inline (I)                                  | 17 |
| Bottom (B)                                  | 17 |
| Manifold (M)                                | 16 |
| Subplate (S)                                | 19 |



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**TITLE SV-50 Hydraulic  
Cylinder Actuator  
Installation and  
Assembly Drawing**

|                  |                  |
|------------------|------------------|
| SIZE<br><b>A</b> | REV<br><b>16</b> |
| SHEET 20 OF 20   |                  |