# KR-150 Regulator Specifications
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All PacSeal Hydraulics' KR Pressure Regulators 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 KR Regulators 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' KR Pressure Regulators serve as pressure reducing and regulating valves to maintain system pressure at a desired value (set pressure) which is below that of the supply pressure.

The operator controls the outlet pressure by modulating the compression of springs that act on a pressurized piston. This in turn balances the hydraulic load inside the body. The operator options are as follows:

- Manual
- Failsafe Air Motor with Manual Override
- Failsafe Hydraulic Motor with Manual Override
- Hydraulic Pilot

The internal override bypass operator provides a lean solution for tight space applications by allowing full accumulator pressure to be supplied downstream of the regulator without a dedicated 4-way bypass valve in the hydraulic circuit.

| General Specifications | |
|---|---|
| Supply Port Size | 1 in. NPT or SAE (2X) |
| Outlet Port Size | 1-1/2 in. NPT or SAE |
| Vent Port Size | 1 in. NPT or SAE (2X) |
| Working Pressure Options (Liquid) | 3000, 5000, or 6000 psi |
| Regulated Outlet Pressure Options | See Product Configurator |
| Cv Factor Outlet | 27 |
| Cv Factor Vent | 4.1 |
| Rated Flow | 250 GPM |
| Temperature Rating (Regulators and Failsafe Air Motors) | -40° to 250°F |
| Fluid Media | Hydraulic oil or lubricated water[1] |
| Weight | See installation drawings |
| **Materials** | |
| ShearFlo Sealing Components (i.e. Rotor and Seal Rings) | Hardened stainless steel[1] |
| Body | Stainless steel |
| Flanges and Operators | Coated carbon steel |
| Hardware | Coated carbon steel |
| O-rings | Buna-N (N), Viton (V), or EPR (E) |
| Backup Rings | Teflon |

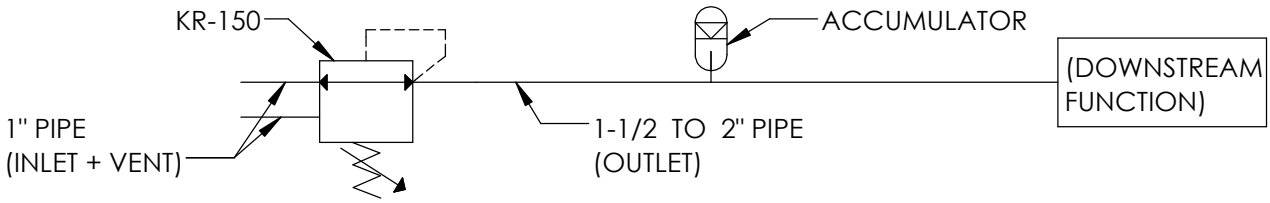
[1]*For water based media, special alloy seal rings may be required for optimum perfomance and durability - Contact PacSeal for details.*

| Model | Supply Pressure [psi] | Regulated Outlet Pressure [psi] | Deadband Range [psi]* |
|---|---|---|---|
| L | 3000/5000 | 300-1800 | 100-150 |
| D | 5000/6000 | 500-3000 | 200-300 |
| H | 5000/6000 | 500-3300 | 100-150 |
| W | 6000 | 700-4500 | 200-300 |
| P | 3000/5000/ 6000 | 50-6000 | 0-100 |

*Deadband is the difference between the set pressure and the actual outlet pressure that triggers the KR to open or vent. The deadband will vary depending on factors that influence the friction between the seal rings and flow plates, such as: type of fluid and lubricity properties, temperature, differential pressure between supply and regulated outlet, seal ring and flow plate wear condition, and lastly interpretation influenced by gauge sensitivity. The Reset Range or Hysteresis is within +/- 150 psi for all models.

**Circuit Design Considerations**

The KR-150, -175, and -200 regulators are subject to hammering if the outlet flow is restricted or not adequate to match the inlet flow rate. To prevent hammering, the downstream hydraulic circuit must have adequate flow; such that the pipe/hose diameter matches or is greater than that of the KR-150 outlet, there are little to no restrictions after the outlet (minimize bends, no check valves, no ball valves, etc.). To safeguard this further, a 1 Qt - 2.5 gal. accumulator with 1 to 1-1/4 NPT port (with precharge set to ~1/3 of the system pressure) is recommended to be used just downstream, in close proximity to the regulator's outlet. The larger the accumulator and port, the better. See circuit schematic example, below.




**System Start-up**

Upon system start-up, there must be load on the pressure regulator piston to prevent hammering/shock that may damage the KR.

- For KR regulators with a manual operator, the top of the manual adjustment handle must be about 2-3/4 inches from the top of the adjustment head.
- For KR regulators with failsafe air/hydraulic remote operators, the top of the manual adjustment handle must be about 4-1/4 inches from the top of the adjustment head.
- For KR regulators with hydraulic pilot operators, there should be about 1500 psi (500 psi minimum) supplied to the pilot inlet.

**Rated Regulated Outlet Pressure**

KR pressure regulators are rated to output a regulated pressure range that is tested and verified prior to shipment. Operating at a pressure outside of this range is possible, but may diminish as the KR wears during service. 0 psi can be achieved by completely unloading the pressure adjustment (decompressing spring to its free state). To match the supply pressure, the pressure adjustment must be completely loaded (compressing springs to solid), which allows the supply pressure to free-flow through the regulator.

NOTE: Although 0 psi is the output, DO NOT attempt to perform maintenance or disassemble any components downstream of the KR while in this state.

To maximize the regulated outlet pressure range, the hydraulic pilot operator is the best option. This operator regulates pressure down to 50 psi and up to the supply pressure.

**Set Pressure Adjustment**

When the set pressure on a spring operator is being changed or adjusted, the outlet needs to be briefly opened and closed a few times to allow the operator and pressure to stabilize. This can be achieved by operating a manifold control valve or installing a separate, much smaller valve directly on the outlet line near the KR. The control valve should be briefly opened and closed after the KR has been adjusted; this will stabilize the pressure reading. Once satisfied with the set pressure, tighten the locking handle down to the adjustment head.

**Avoid Series Installation**

It is NOT recommended that KRs be installed in series (e.g. do NOT connect the outlet of one KR to the inlet of another). Doing so may prevent set pressure stabilization.

**Pressure Relieving Feature**

The KRs are designed to self-relieve (vent) at an over-pressurization condition to maintain the regulated set pressure. Thus, the vent port must always be connected without any restrictions and not joined with any other common returns to the reservoir or tank at ambient pressure (i.e. solo low pressure hydraulic hose or tubing from KR to tank) to ensure proper safety and function.

In the event of a supply seal ring or flow plate failure, the supply pressure will leak into the KR body through the vent seal ring port and then be directed to the reservoir or tank.

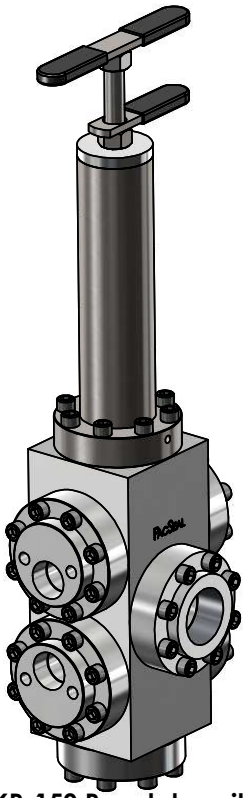
## Model Code Configurator

| Basic Model | Ports | Supply Pressure | Regulated Outlet Pressure: Operating Range[2] | Regulated Outlet Pressure: Deadband | Operator | | Water Glycol App's | |
|---|---|---|---|---|---|---|---|---|
| KR-150 | N NPT<br>S SAE | 3 3000 psi<br>5 5000 psi | L 300-1800 psi | 100-150 psi | M Manual<br>FSA Failsafe Air Motor<br>FSH Failsafe Hydraulic | -IO Direct<br>-IS with SV-<br>-IX with SVx- | -W[1] | Special Alloy Seal Rings |
| | C Code-61[1]<br>D Code-62[1] | 5 5000 psi<br>6 6000 psi | D 500-3000 psi<br>H 500-3300 psi | 200-300 psi<br>100-150 psi | | | | |
| | | 6 6000 psi | W 700-4500 psi | 200-300 psi | | | | |
| | | 3, 5, or 6 | P[3] 50-6000 psi | 0-100 psi | H Hydraulic Pilot | | | |

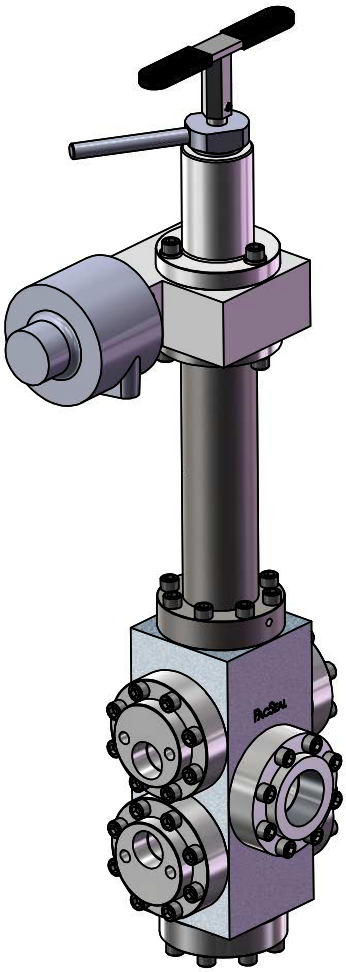
*Notes:* [1] *Not a standard option - special order only*

[2] *Regulated Outlet Pressure cannot exceed supply pressure. Absolute Outlet Pressure is 0 psi up to 25% above the maximum operating pressure.*

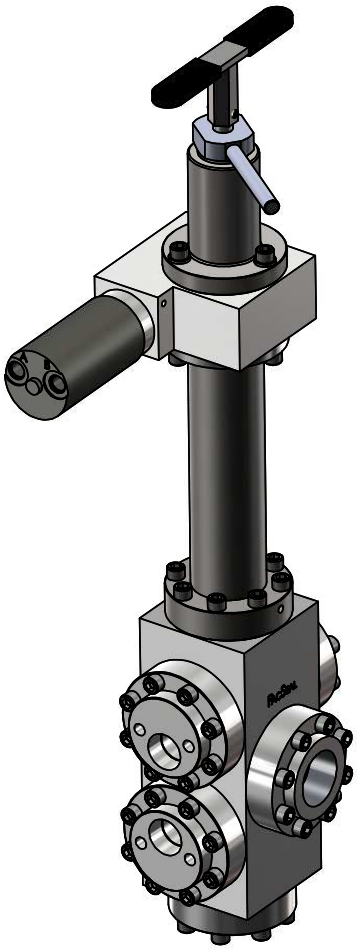
[3] *Maximum regulated outlet pressure matches the supply pressure for a regulator with the Hydraulic Pilot operator*



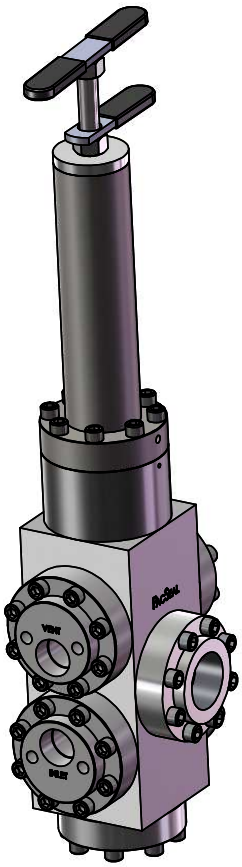
**KR-150 Regulator with Manual Operator**
*Example: KR-150N3LM*



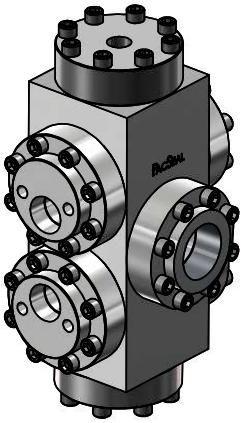
**KR-150 Regulator with Failsafe Air Motor Operator**
*Example: KR-150S5DFSA*



**KR-150 Regulator with Failsafe Hydraulic Motor Operator**
*Example: KR-150S6HFSH*



**KR-150 Regulator with Direct Internal Override**
*Example: KR-150N5DM-IO*



**Hydraulic Pilot Operator**
*Example: KR-150S3PH*

*NOTES:*

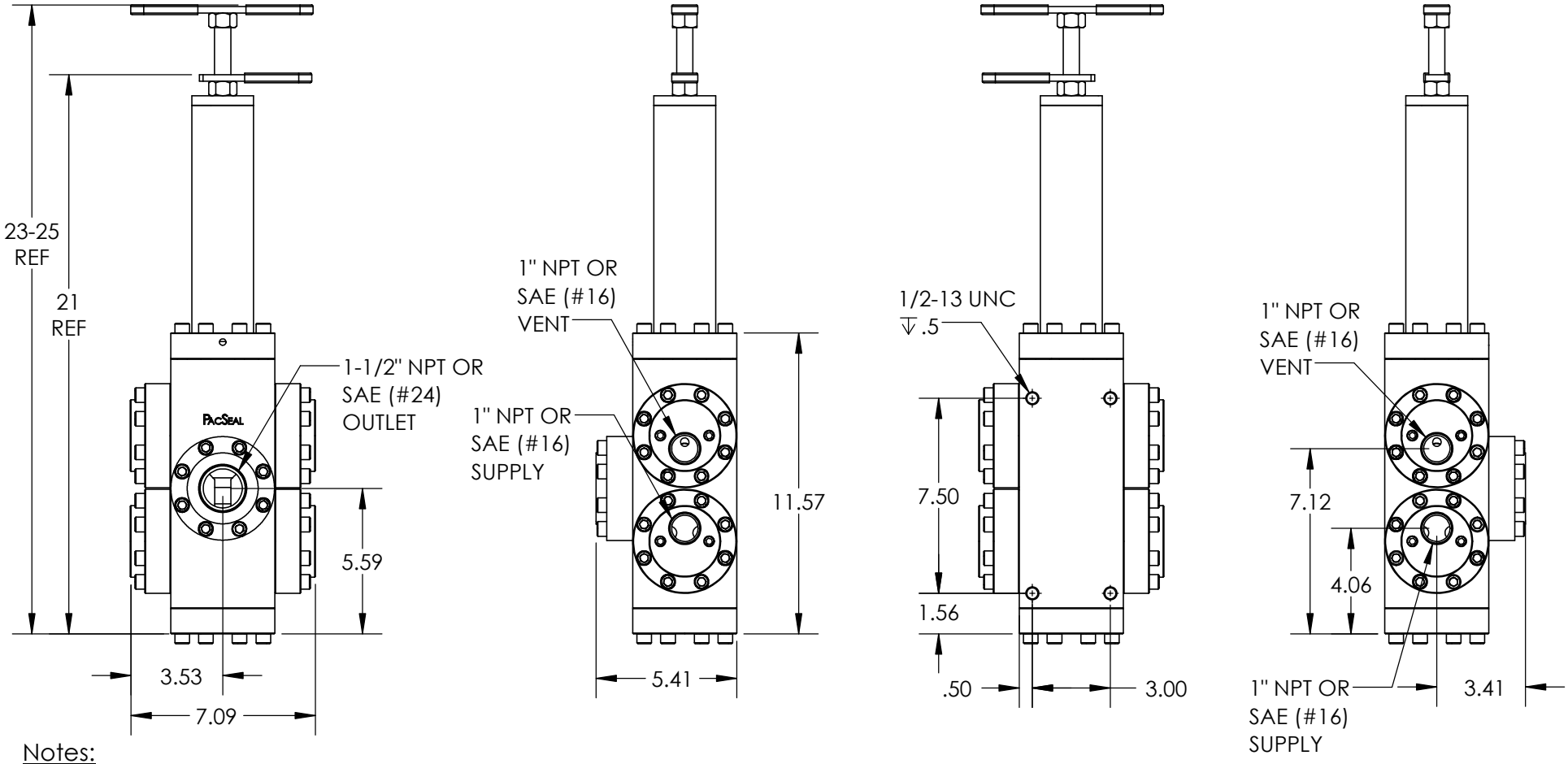
1. *Displayed models are just a few examples of the many potential configurations*

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TITLE: **Configuration Overview**

SIZE: A | REV: 10




Notes:

1. Adjustment handle can be threaded in or out to increase or decrease compression on the spring and thus on the regulated outlet pressure.
2. Model configuration (Regulated Outlet Pressure) options: L, D
3. Weight - 72 lb.
4. All dimensions are consistent for KR-150 NPT or SAE ORB porting options, regardless of supply/outlet pressure and operator selection.

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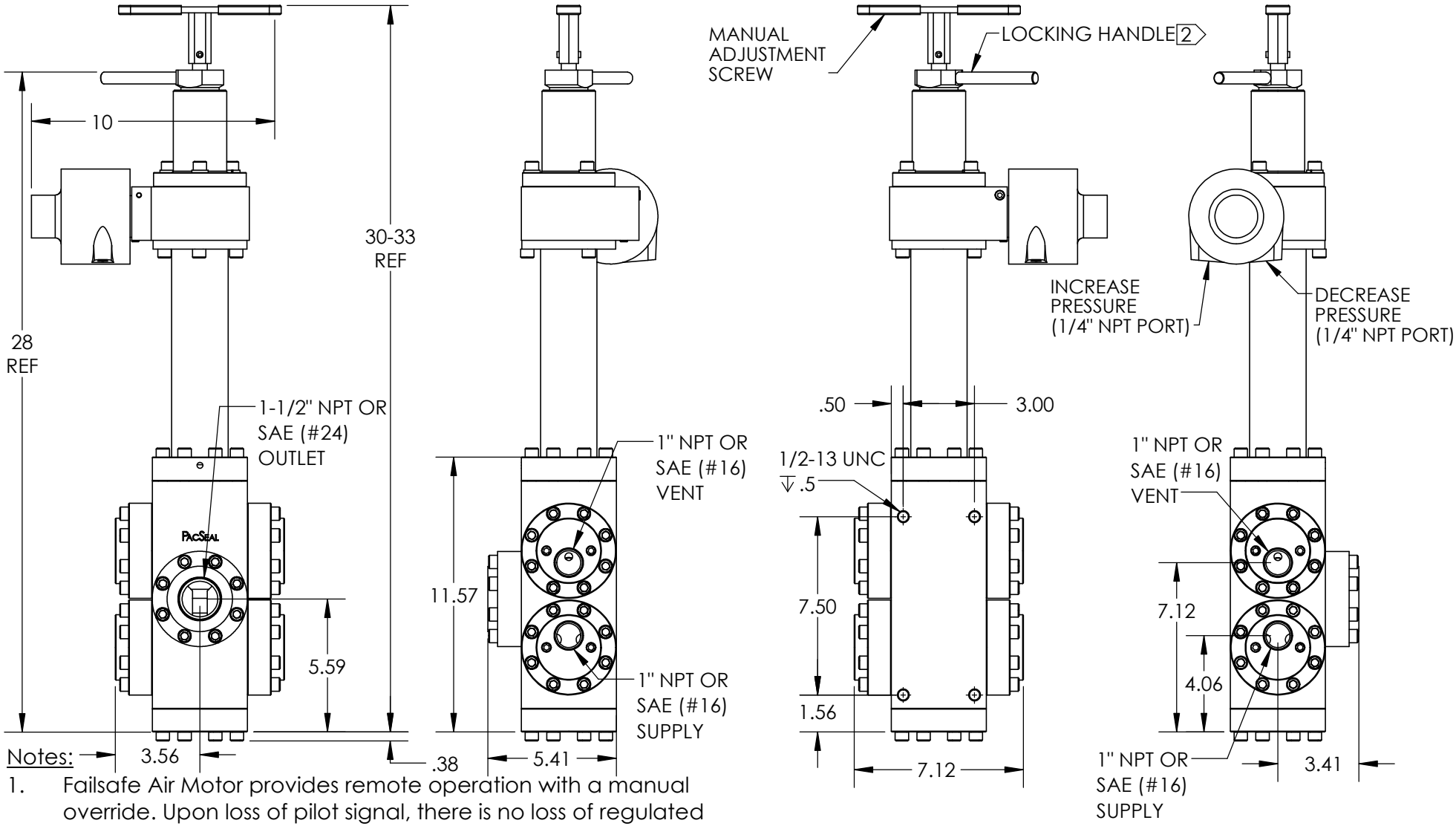
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TITLE
**Regulator w/ Manual Operator (NPT/SAE) Installation Drawing**

SIZE A | REV 10



5 4 3 2 1




Notes:

1. Failsafe Air Motor provides remote operation with a manual override. Upon loss of pilot signal, there is no loss of regulated outlet pressure.
2. Turn locking handle clockwise to lock for failsafe remote operation. Turn locking handle counter-clockwise to unlock for manual operation/override.
3. Recommended Air Supply - 115 psi max with 1/2" tubing.
4. Model configuration (Regulated Outlet Pressure) options: L, D
5. Weight - 100 lb.
6. All dimensions are consistent for KR-150 NPT or SAE ORB porting options, regardless of supply/outlet pressure and operator selection.

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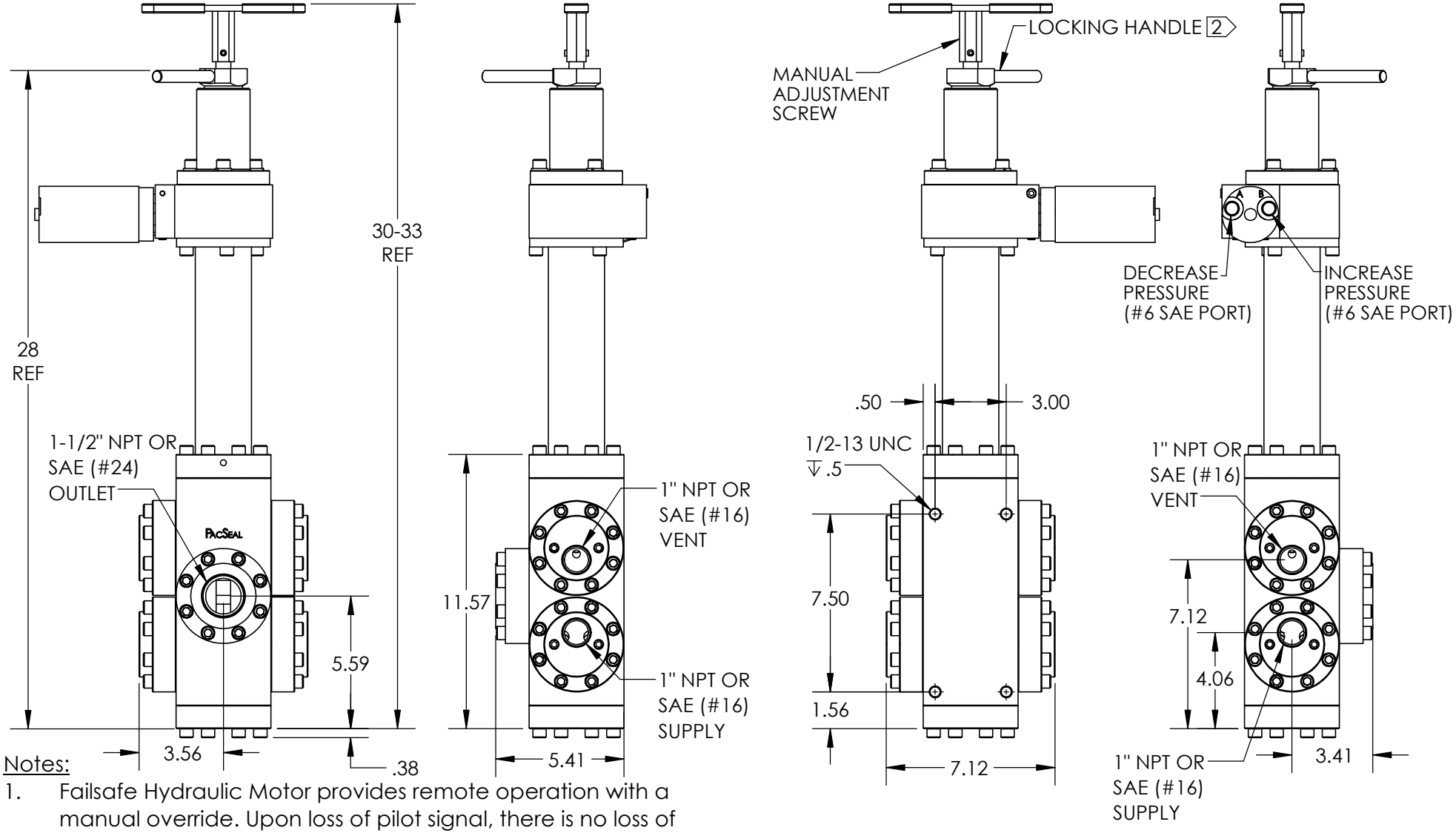
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TITLE
**Regulator w/ Failsafe Air Operator (NPT/SAE) Installation Drawing**

SIZE A | REV 10



5 4 3 2 1




Notes:

1. Failsafe Hydraulic Motor provides remote operation with a manual override. Upon loss of pilot signal, there is no loss of regulated outlet pressure.
2. Turn locking handle clockwise to lock for failsafe remote operation. Turn locking handle counter-clockwise to unlock for manual operation/override.
3. Max Hydraulic Supply Pressure - 1500 psi
4. Model configuration (Regulated Outlet Pressure) options: L, D
5. Weight - 98 lb.
6. All dimensions are consistent for KR-150 NPT or SAE ORB porting options, regardless of supply/outlet pressure and operator selection.

PACSEAL HYDRAULICS

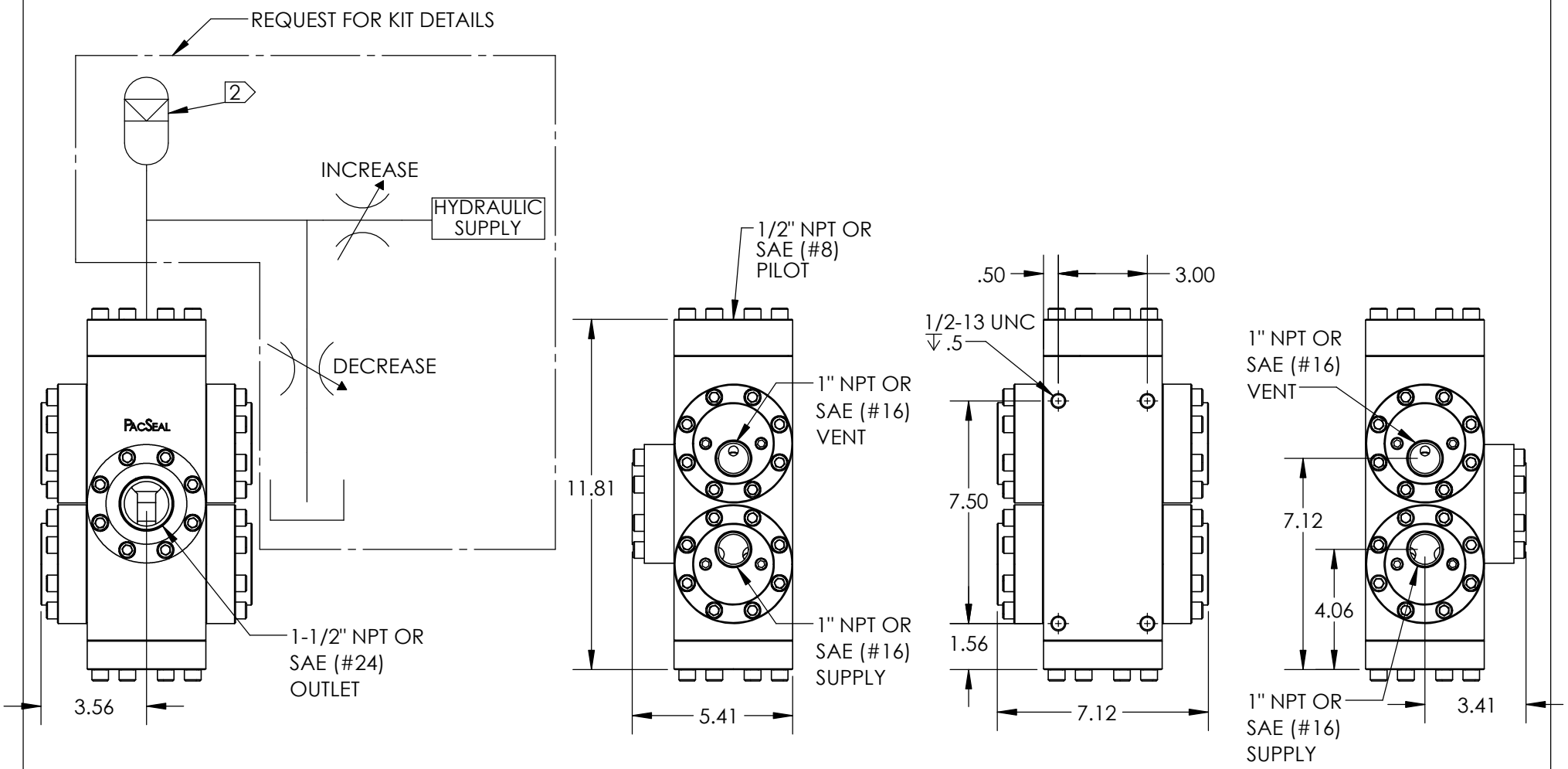
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TITLE **Regulator w/ Failsafe Hydarulic Operator (NPT/SAE) Installation Drawing**

SIZE A | REV 10



5 4 3 2 1




Notes:

1. A remote, variable hydraulic signal operates on a piston with a 1:1 ratio which allows for the most precisely controlled outlet pressures of all options. Loss of hydraulic pilot pressure will result in the outlet venting to tank.
2. Requires a minimum 1 Pint Accumulator for operation
3. Model configuration (Regulated Outlet Pressure) option: P
4. Weight - 61 lb.
5. All dimensions are consistent for KR-150 NPT or SAE porting options, regardless of supply/outlet pressure and operator selection.

PACSEAL HYDRAULICS

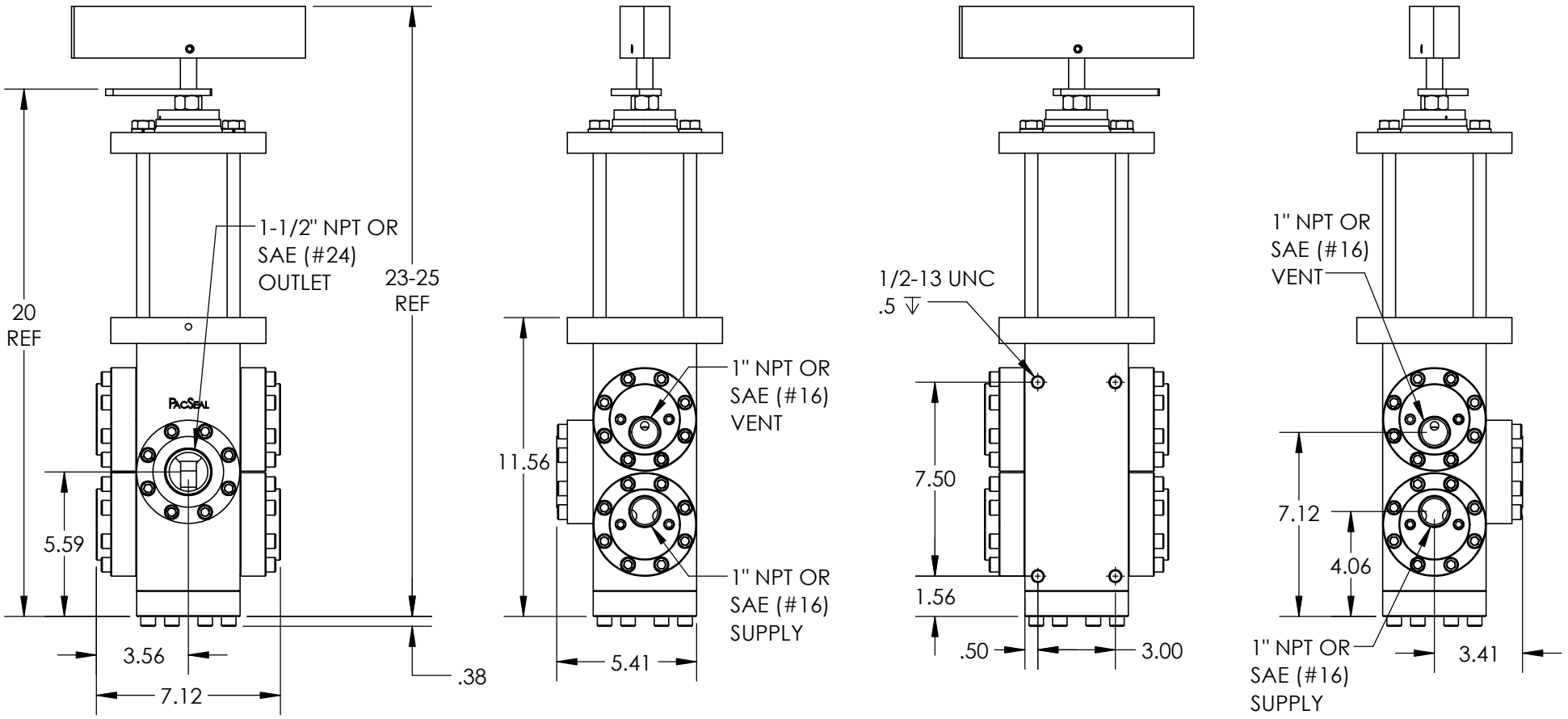
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TITLE
**Regulator w/ Hydraulic Pilot Operator (NPT/SAE) Installation Drawing**

SIZE **A** | REV 10

SHEET 8 OF 25

5 4 3 2 1




Notes:

1. Adjustment handle can be threaded in or out to increase or decrease compression on the spring and thus on the regulated outlet pressure.
2. Model configuration (Regulated Outlet Pressure) options: H (5000 psi supply) and W (6000 psi supply)
3. Weight - 96 lb.
4. All dimensions are consistent for KR-150 NPT or SAE ORB porting options, regardless of supply/outlet pressure and operator selection.

PACSEAL HYDRAULICS

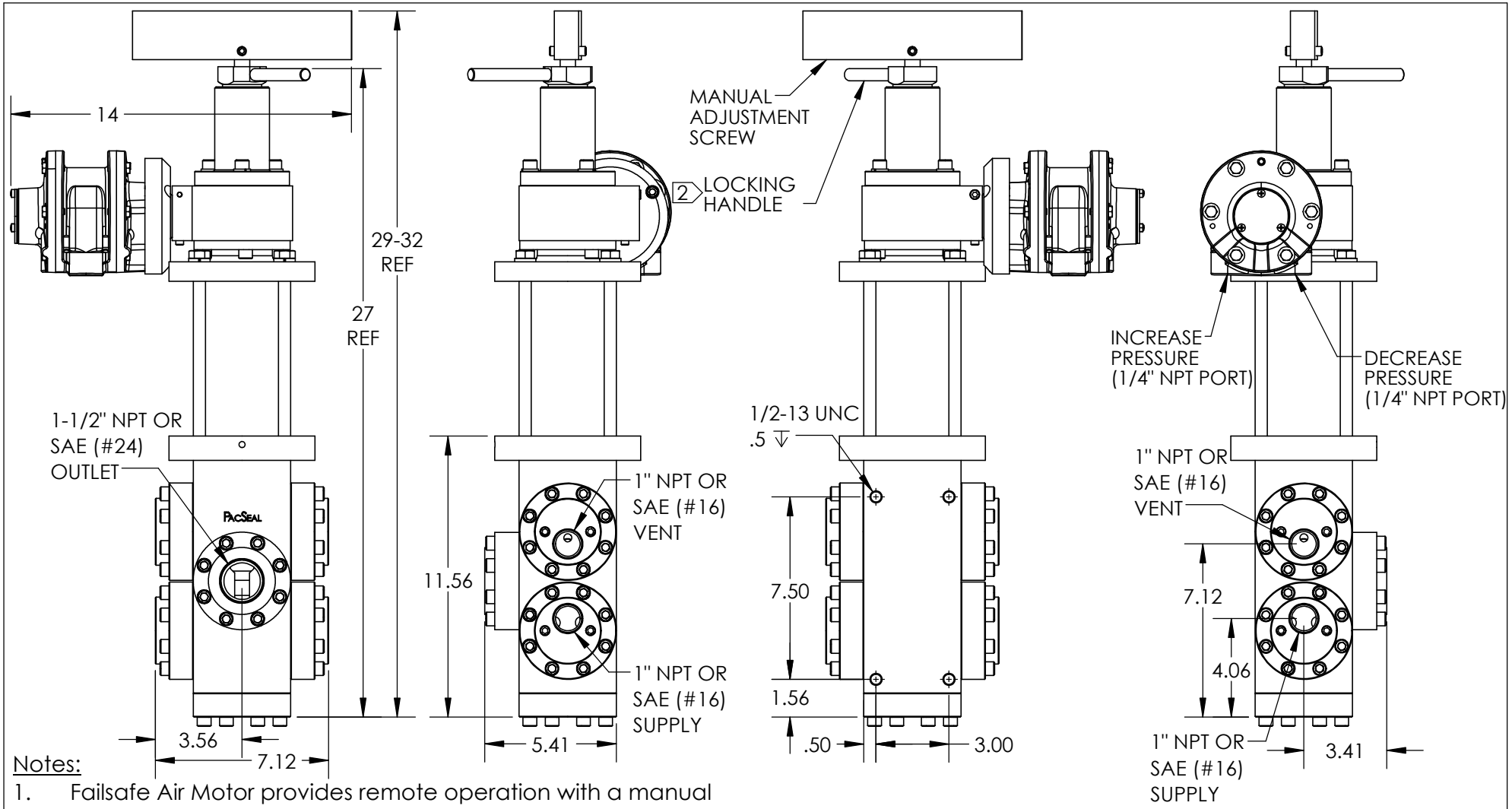
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TITLE: **High Pressure Output w/ Manual Operator**

SIZE: A | REV: 10



5 4 3 2 1




Notes:

1. Failsafe Air Motor provides remote operation with a manual override. Upon loss of pilot signal, there is no loss of regulated outlet pressure.
2. Turn locking handle clockwise to lock for failsafe remote operation. Turn locking handle counter-clockwise to unlock for manual operation/override.
3. Recommended air supply - 115 psi max w/ 1/2" tubing.
4. Model configuration (Regulated Outlet Pressure) option: H (5000/6000 psi supply)and W (6000 psi supply)
5. Weight - 141 lb.
6. All dimensions are consistent for KR-150 NPT or SAE ORB porting options, regardless of supply/outlet pressure and operator selection.

PACSEAL HYDRAULICS

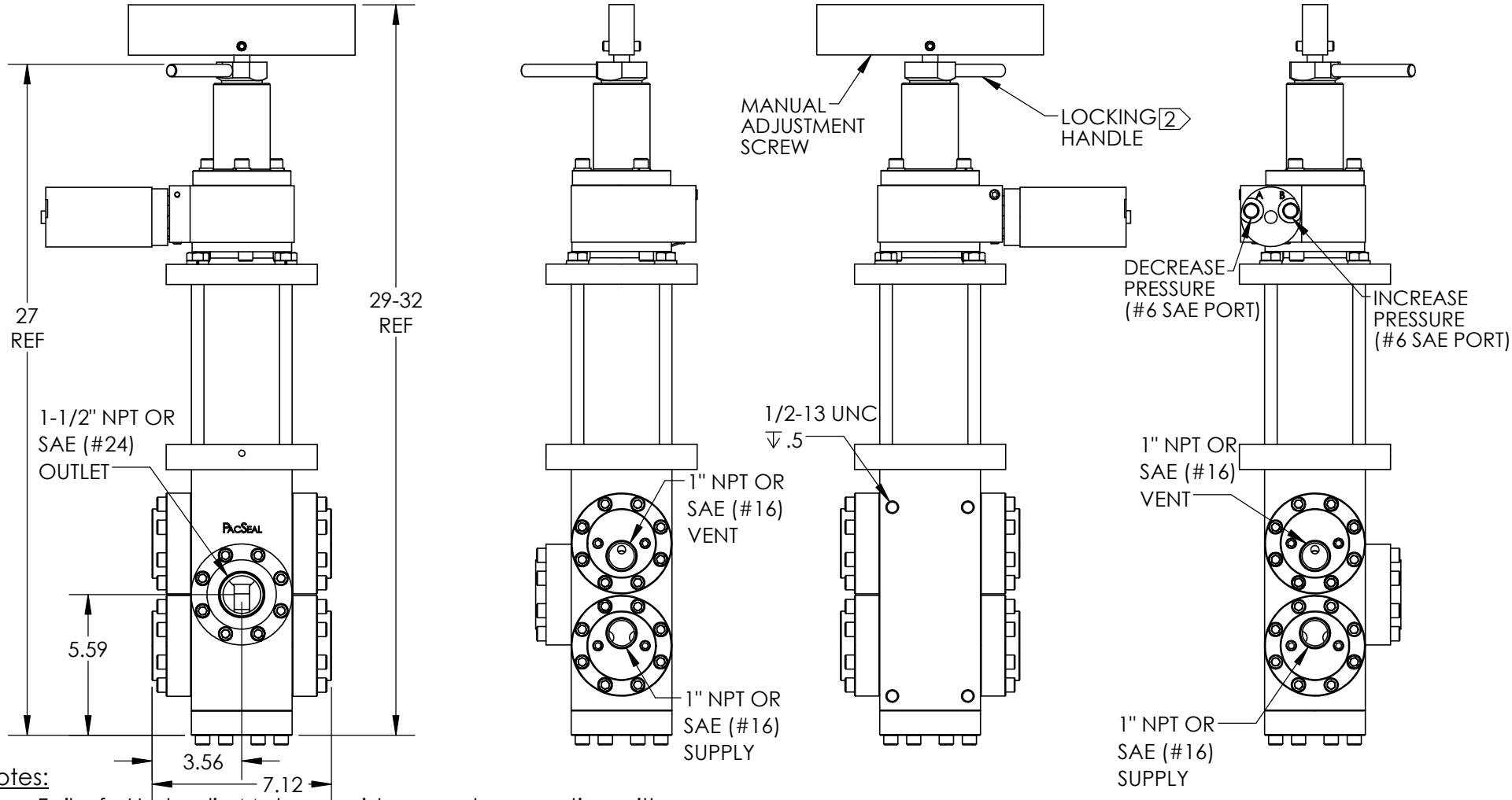
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TITLE: **High Pressure Output Regulator w/ High Torque Failsafe Air Operator**

SIZE: A | REV: 10



5 4 3 2 1




Notes:

1. Failsafe Hydraulic Motor provides remote operation with a manual override. Upon loss of pilot signal, there is no loss of regulated outlet pressure.
2. Turn locking handle clockwise to lock for failsafe remote operation. Turn locking handle counter-clockwise to unlock for manual operation/override.
3. Max Hydraulic Motor Supply Pressure - 1500 psi
4. Model configuration (Regulated Outlet Pressure) option: H (5000/6000 psi supply) and W (6000 psi supply).
5. Weight - 116 lb.
6. All dimensions are consistent for KR-150 NPT or SAE ORB porting options, regardless of supply/outlet pressure and operator selection.

PACSEAL HYDRAULICS

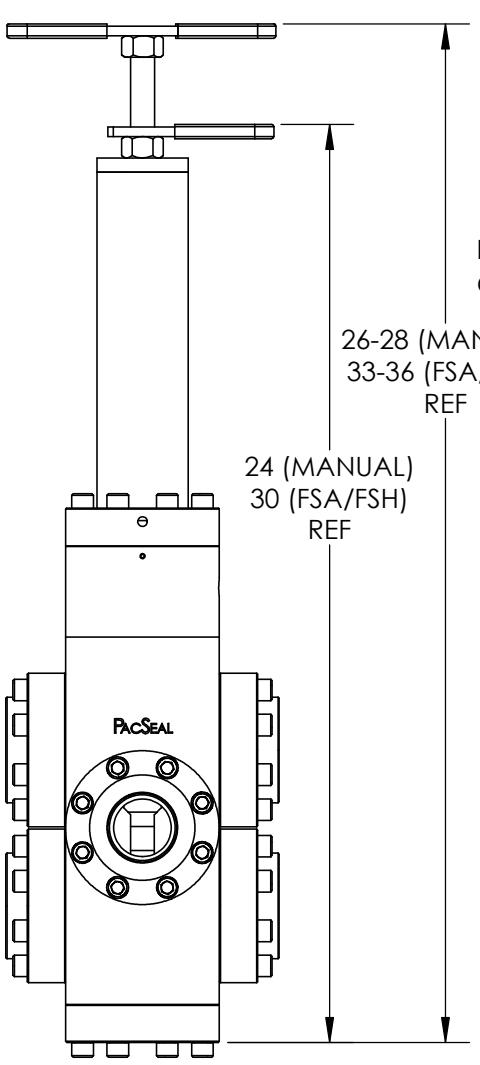
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TITLE: High Pressure Output Regulator w/ Failsafe Hydraulic Operator

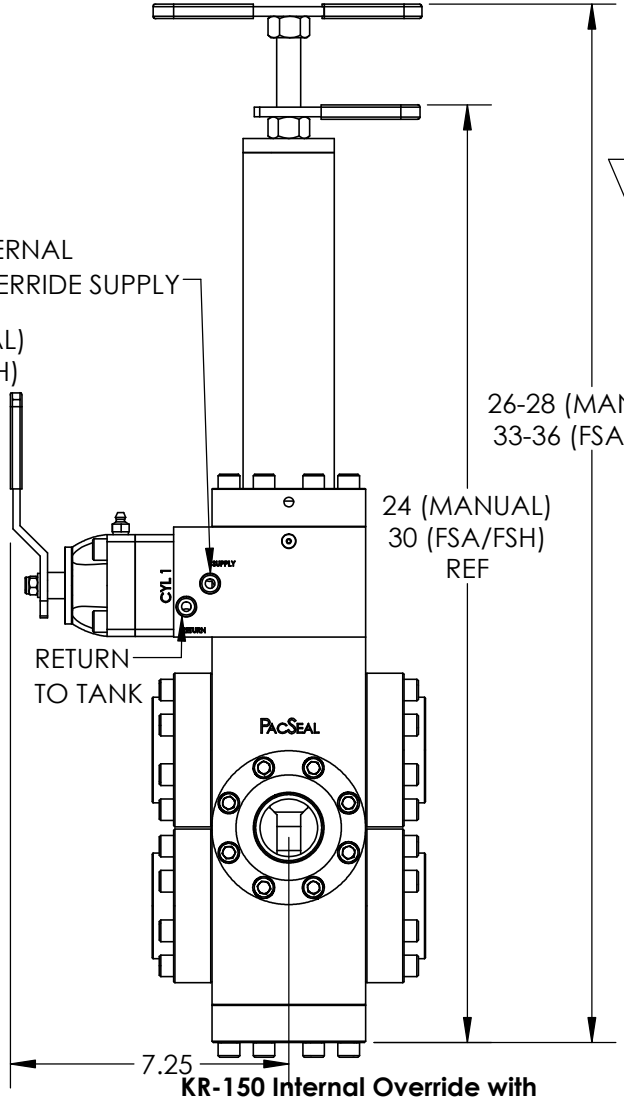
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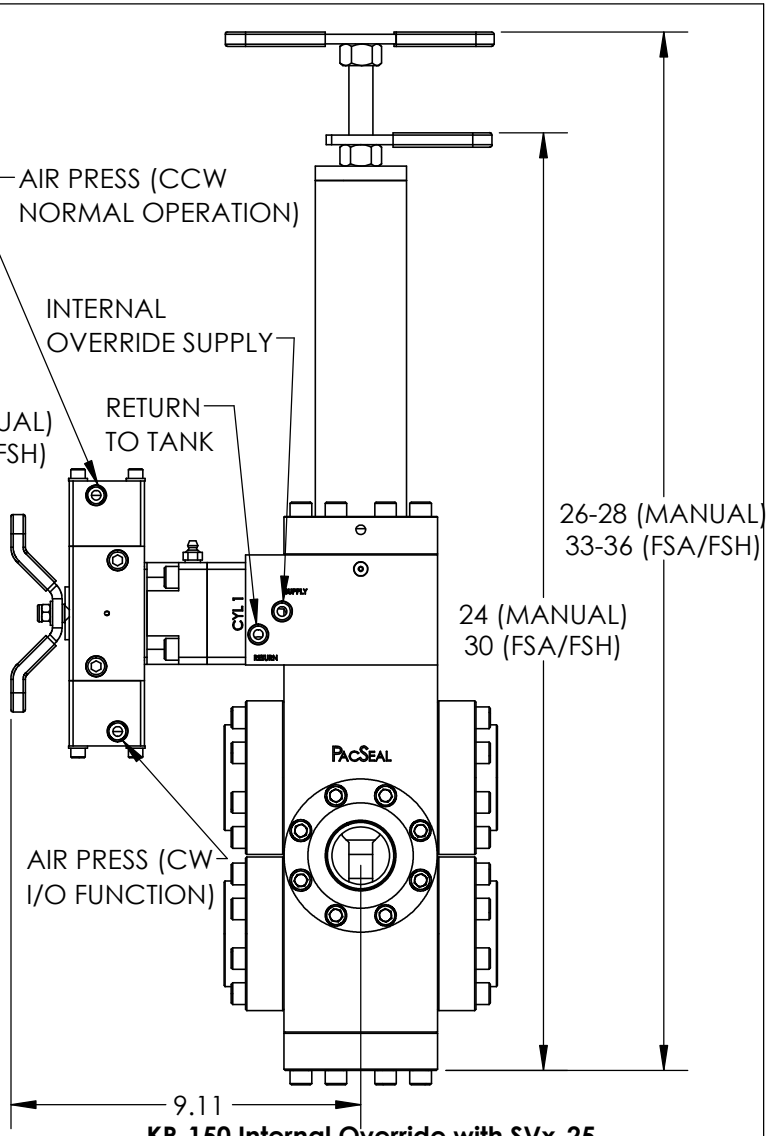
5 4 3 2 1




**KR-150 Internal Override**
**Remote Pilot Operation (-IO)**




**KR-150 Internal Override with**
**1 SV-25 Open Center Pilot Valve (-IS)**




**KR-150 Internal Override with SVx-25**
**2 Open Center Pilot Air Actuated Valve (-IX)**
**(80-150 psi air inlet)**
**(3000 psi working pressure)**

*The I/O Bypass operator allows full accumulator pressure to be supplied downstream of the regulator without a dedicated 4-way bypass valve in the circuit. The over-ride bypass is accomplished by applying a pilot signal to the I/O operator which is equal to or greater than the accumulator pressure. The pilot pressure forces the piston/ seal container assembly to the full open position where supply pressure flows through the regulator to the output circuit. Relieving the pilot signal allows the regulator to return to the original set pressure.*

Notes:
1. See SV-25 product information for further details
2. See SVx-25 product information for further details
3. Regulated outlet pressure options: L, D

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TITLE
**Internal Override Options Installation Drawing**

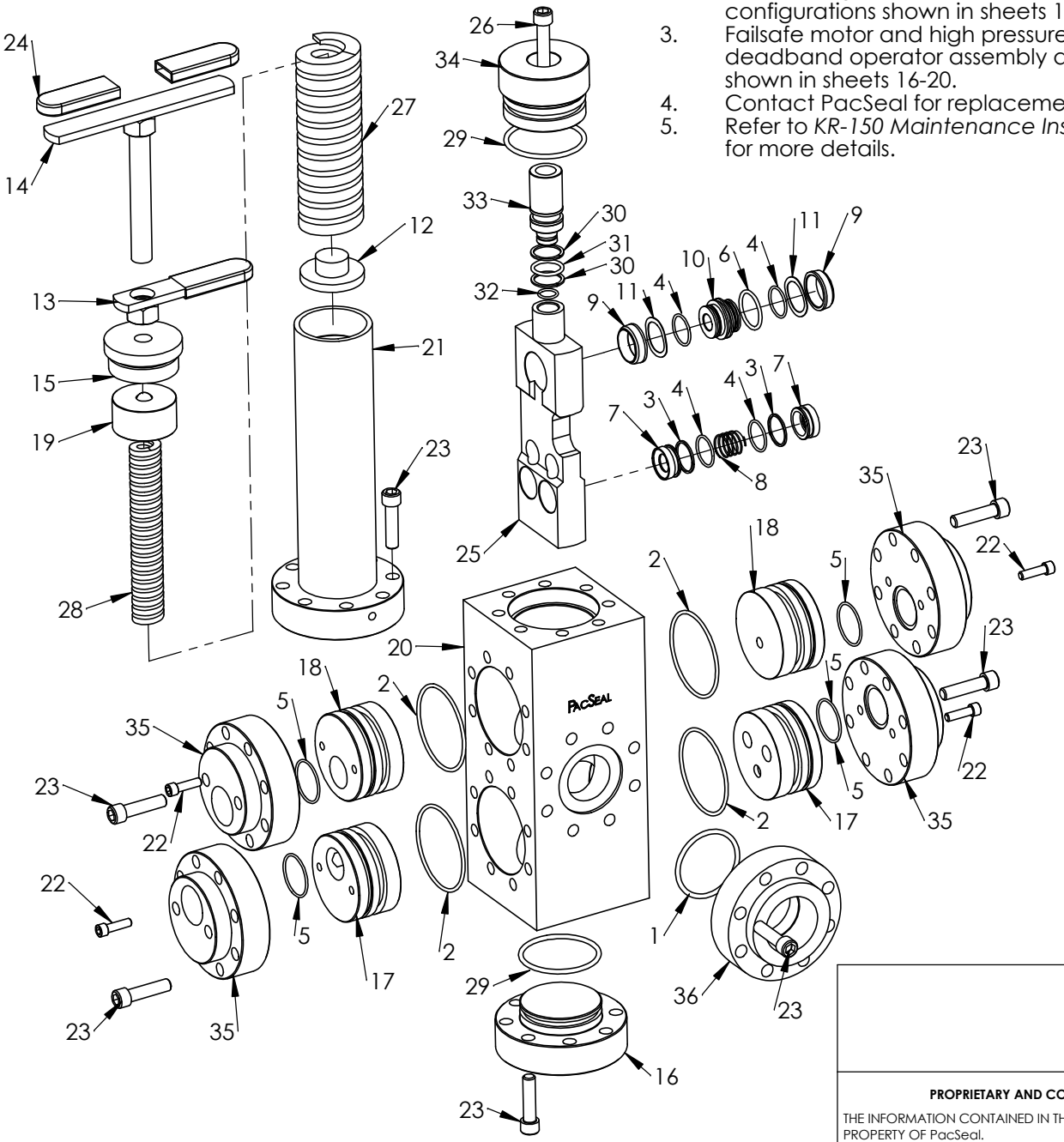
SIZE **A** | REV 10



5 4 3 2 1

Notes:

1. KR-150 "D" Manual Regulator shown for illustration purposes.
2. All other regulated outlet pressure model configurations shown in sheets 13-15.
3. Failsafe motor and high pressure low deadband operator assembly drawings shown in sheets 16-20.
4. Contact PacSeal for replacement parts.
5. Refer to *KR-150 Maintenance Instructions* for more details.




| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1126 | O-Ring | 1 |
| 2 | 23-1263 | O-Ring | 4 |
| 3 | 23-1322 | Backup Ring | 4 |
| 4 | 23-1323 | O-Ring | 6 |
| 5 | 23-1325 | O-Ring | 4 |
| 6 | 23-1334 | O-Ring | 1 |
| 7 | 40-0014 | Seal Ring, Supply | 4 |
| 8 | 40-0110 | Spring | 2 |
| 9 | 40-0113 | Seal Ring, Vent | 2 |
| 10 | 40-0114 | Valve Cage | 1 |
| 11 | 40-0115 | Wave Spring | 2 |
| 12 | 40-0134 | Spring Plate | 1 |
| 13 | 40-0135 | Lock Handle | 1 |
| 14 | 40-0136 | Adjusting Screw & Handle | 1 |
| 15 | 40-0140 | Plug, Adjustment Head | 1 |
| 16 | 40-0197 | Flange, Lower | 1 |
| 17 | 40-0285 | Flow Plate, Supply | 2 |
| 18 | 40-0286 | Flow Plate, Vent | 2 |
| 19 | 40-0300 | Spring Guide | 1 |
| 20 | 40-0323 | Body | 1 |
| 21 | 40-0383 | Ajustment Head | 1 |
| 22 | 50-0066 | Bolt, SHCS | 8 |
| 23 | 50-0069 | Bolt, SHCS | 56 |
| 24 | 50-0239 | Grip, Handle | 3 |
| 25 | Note 2 | Seal Container | 1 |
| 26 | Note 2 | SHCS | 1 |
| 27 | Note 2 | Spring, Outer | 1 |
| 28 | Note 2 | Spring, Inner | 1 |
| 29 | Note 2 | O-Ring | 2 |
| 30 | Note 2 | Backup Ring | 2 |
| 31 | Note 2 | O-Ring | 1 |
| 32 | Note 2 | O-Ring | 1 |
| 33 | Note 2 | Piston, Manual | 1 |
| 34 | Note 2 | Piston Guide, KR-150 Manual | 1 |
| 35 | Note 4 | Flange, Inlet & Vent | 4 |
| 36 | Note 4 | Flange, Outlet | 1 |

PACSEAL HYDRAULICS

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TITLE

**General Assembly Overview**

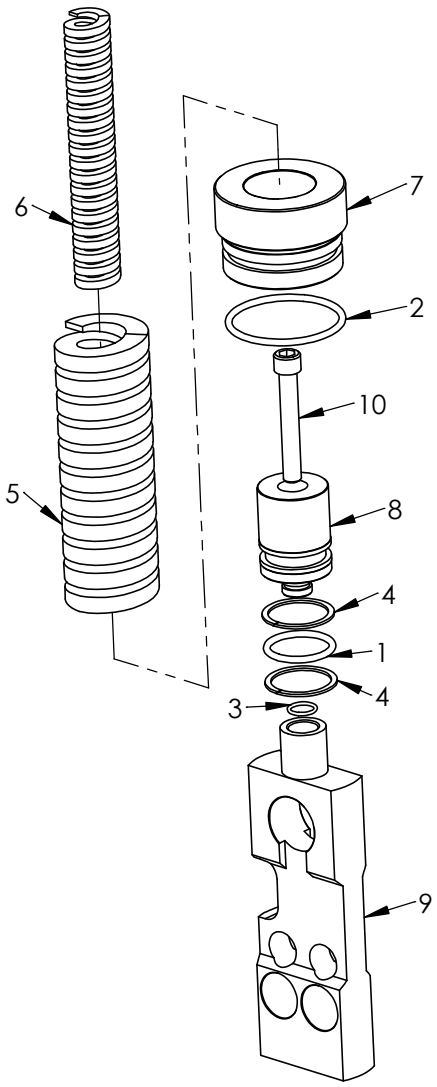
SIZE **A** | REV 10



5 4 3 2 1

Notes:

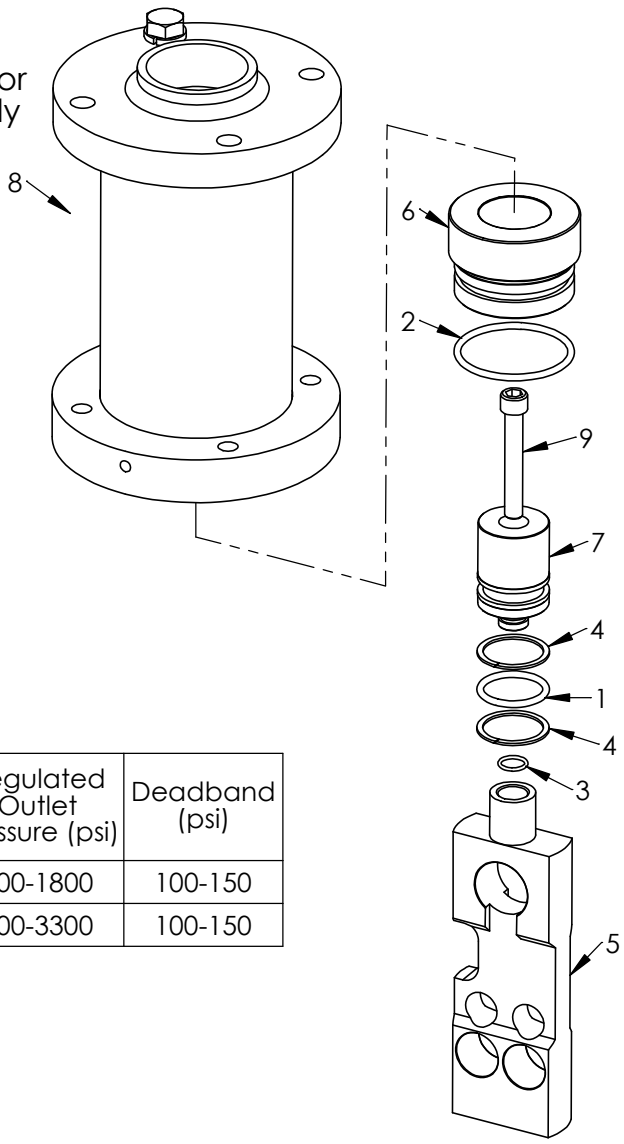
1. The listed components vary based on Supply and Regulated Outlet Pressures, while all other regulator components (shown in sheet 13 "General Assembly Overview") are shared.




**KR-150 L Regulator**

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1124 | O-Ring | 1 |
| 2 | 23-1319 | O-Ring | 1 |
| 3 | 23-1333 | O-Ring | 1 |
| 4 | 23-1342 | Backup Ring | 2 |
| 5 | 40-0143 | Spring, Outer | 1 |
| 6 | 40-0144 | Spring, Inner | 1 |
| 7 | 40-1351 | Piston Guide, L | 1 |
| 8 | 40-1352 | Piston, L | 1 |
| 9 | 40-0714 | Seal Container | 1 |
| 10 | 50-0331 | Screw | 1 |

| Model | Supply Pressure (psi) | Regulated Outlet Pressure (psi) | Deadband (psi) |
|---|---|---|---|
| L | 3000/5000 | 300-1800 | 100-150 |
| H | 5000/6000 | 500-3300 | 100-150 |




**KR-150 H Regulator**
*With High Pressure Output Adjustment Head*

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1124 | O-Ring | 1 |
| 2 | 23-1319 | O-Ring | 1 |
| 3 | 23-1333 | O-Ring | 1 |
| 4 | 23-1342 | Backup Ring | 2 |
| 5 | 40-0714 | Seal Container | 1 |
| 6 | 40-1351 | Piston Guide, L | 1 |
| 7 | 40-1352 | Piston, L | 1 |
| 8 | 40-2927 | KR-75/140/150 L-HP Manual Operator | 1 |
| 9 | 50-0331 | Screw | 1 |

PACSEAL HYDRAULICS

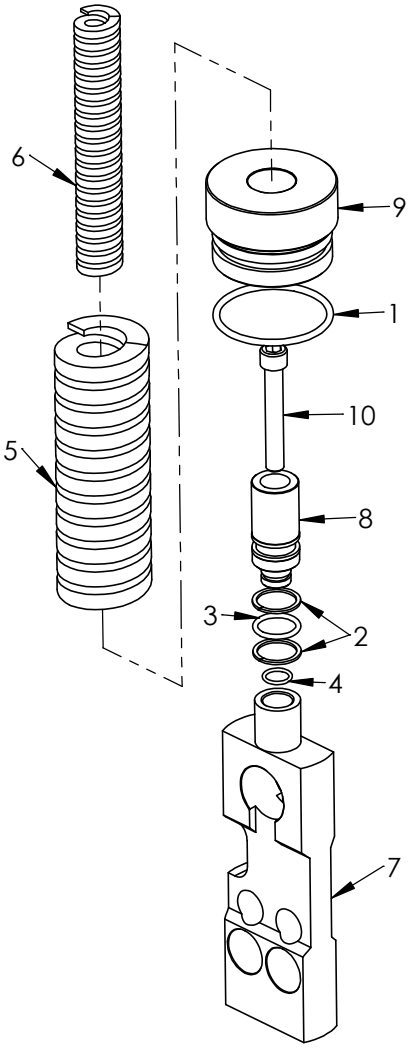
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TITLE: **L and H Model Configurations Assembly Drawing**

SIZE: A | REV: 10

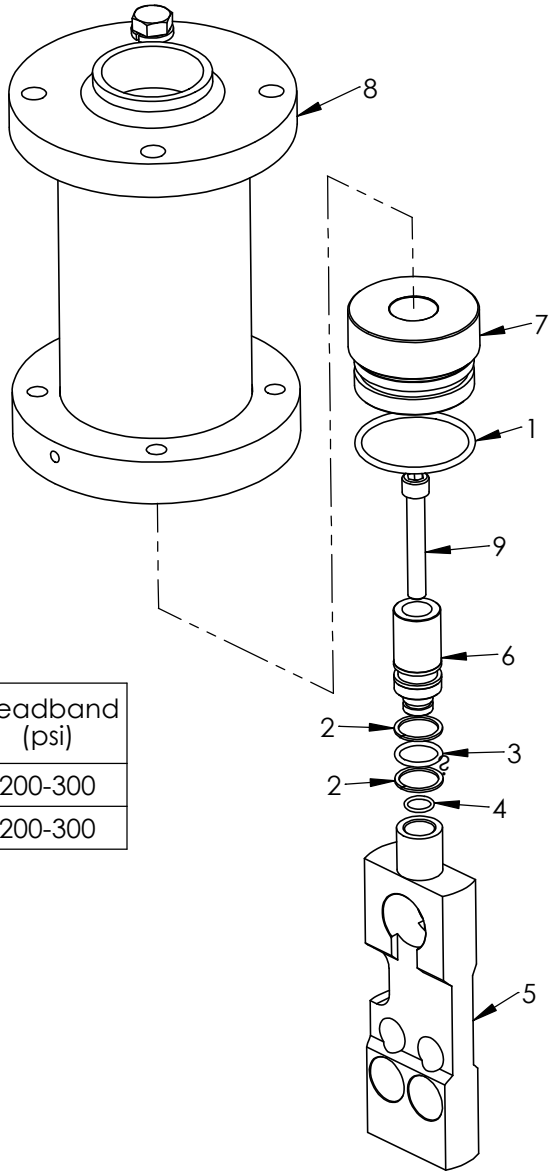
Notes:

1. The listed components vary based on Supply and Regulated Outlet Pressures, while all other regulator components (shown in sheet 13 "General Assembly Overview") are shared.




**KR-150 D Regulator**

| Model | Supply Pressure (psi) | Regulated Outlet Pressure (psi) | Deadband (psi) |
|---|---|---|---|
| D | 5000 | 500-3000 | 200-300 |
| W | 6000 | 700-4500 | 200-300 |




**KR-150 W Regulator**
*with High Pressure Output Adjustment Head*

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1319 | O-Ring | 1 |
| 2 | 23-1331 | Backup Ring | 2 |
| 3 | 23-1332 | O-Ring | 1 |
| 4 | 23-1333 | O-Ring | 1 |
| 5 | 40-0143 | Spring, Outer | 1 |
| 6 | 40-0144 | Spring, Inner | 1 |
| 7 | 40-0714 | Seal Container | 1 |
| 8 | 40-0717 | Piston, D | 1 |
| 9 | 40-0718 | Piston Guide, D | 1 |
| 10 | 50-0331 | SHCS | 1 |

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1319 | O-Ring | 1 |
| 2 | 23-1331 | Backup Ring | 2 |
| 3 | 23-1332 | O-Ring | 1 |
| 4 | 23-1333 | O-Ring | 1 |
| 5 | 40-0714 | Seal Container | 1 |
| 6 | 40-0717 | Piston, D | 1 |
| 7 | 40-0718 | Piston Guide, D | 1 |
| 8 | 40-2927 | High Pressure Output Adj. Head | 1 |
| 9 | 50-0331 | SHCS | 1 |

PACSEAL HYDRAULICS

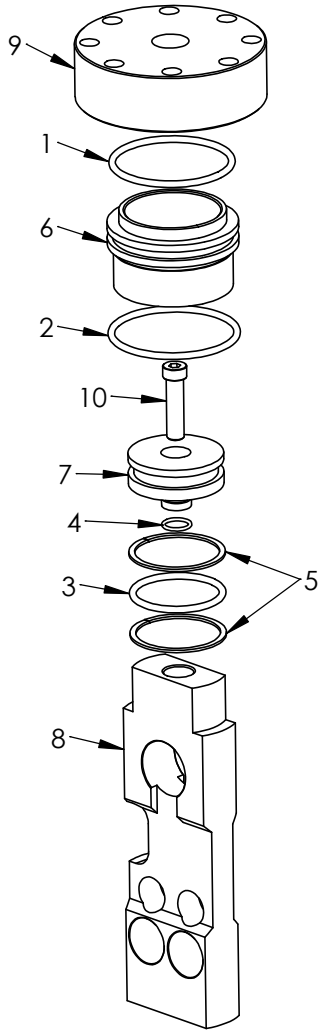
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TITLE: **D and W Model Configurations Assembly Drawing**

SIZE: A | REV: 10

Notes:

1. The listed components vary based on Supply and Regulated Outlet Pressures, while all other regulator components (shown in sheet 13 "General Assembly Overview") are shared.




**KR-150 P Regulator (Hydraulic Pilot)**

| Model | Supply Pressure (psi) | Regulated Outlet Pressure (psi) | Deadband (psi) |
|---|---|---|---|
| P | 3000/5000/6000 | 50-6000 | 0-100 |

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1128 | O-Ring | 1 |
| 2 | 23-1327 | O-Ring | 1 |
| 3 | 23-1330 | O-Ring | 1 |
| 4 | 23-1333 | O-Ring | 1 |
| 5 | 23-1413 | Backup Ring | 2 |
| 6 | 40-0318 | Piston Guide | 1 |
| 7 | 40-0319 | Piston | 1 |
| 8 | 40-0320 | Seal Container | 1 |
| 9 | 40-0324 | Hydraulic Head | 1 |
| 10 | 50-0068 | Bolt, SHCS | 1 |

PacSeal Hydraulics

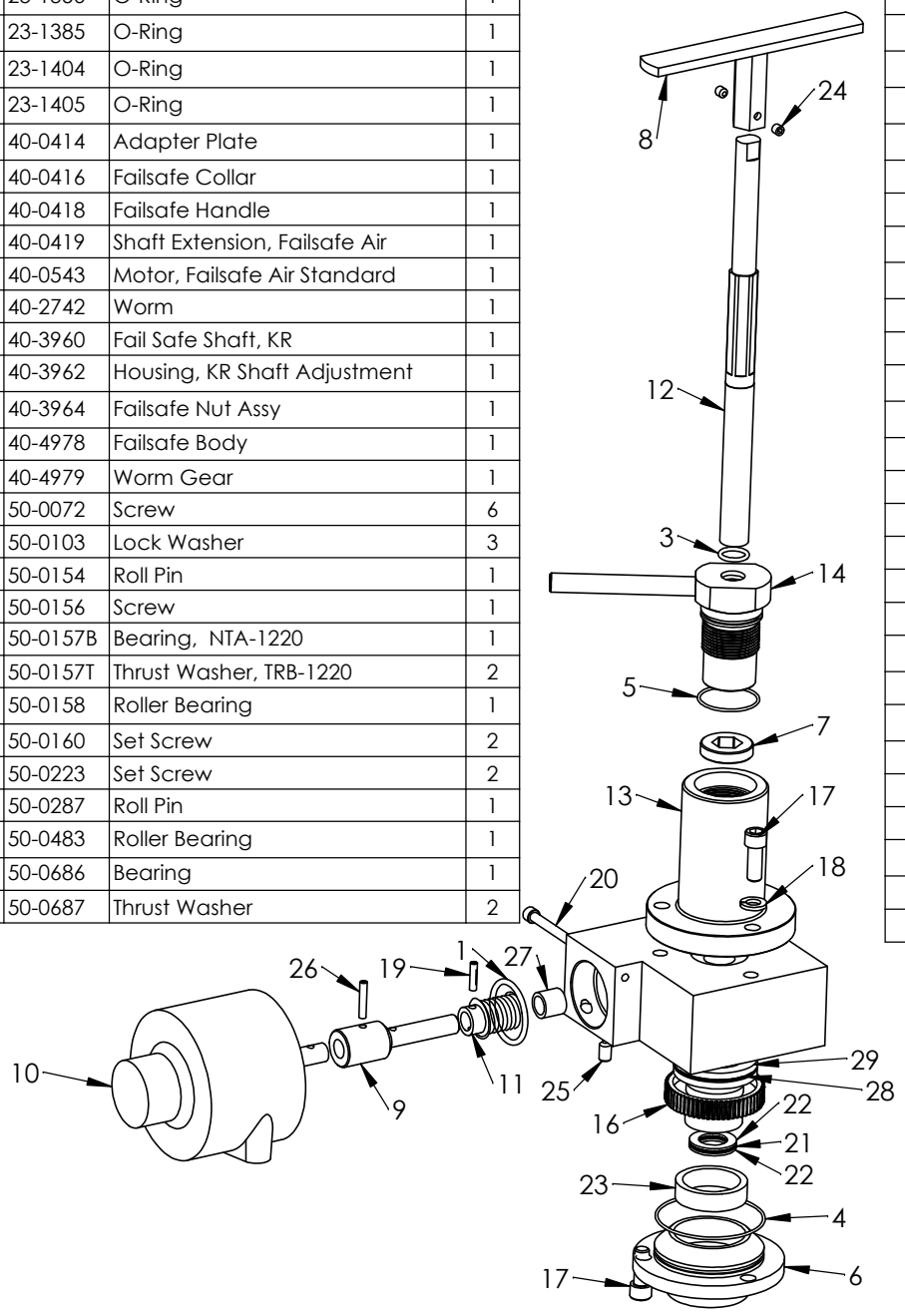
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TITLE: **P Model Configurations Assembly Drawing**

SIZE: A | REV: 10

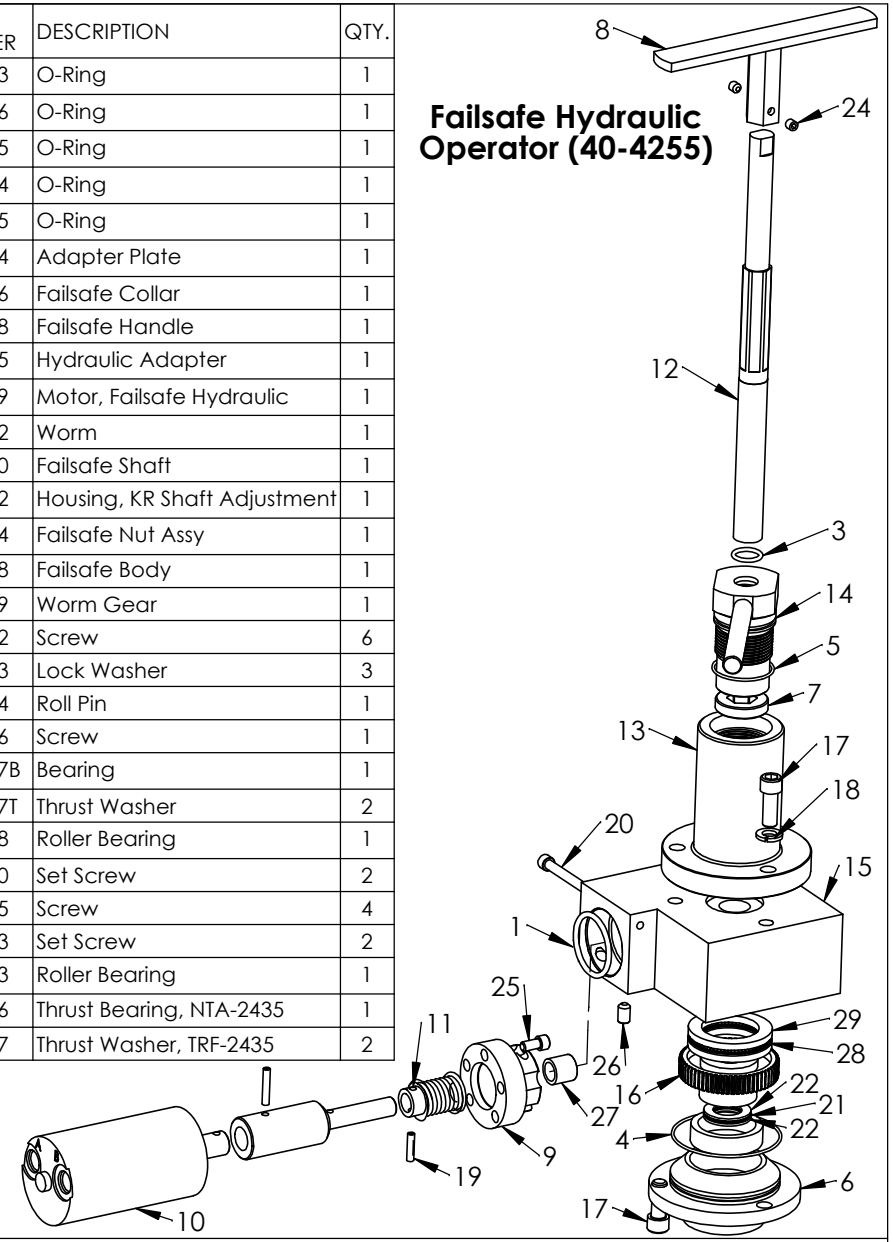
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1123 | O-Ring | 1 |
| 2 | 23-1356 | O-Ring | 1 |
| 3 | 23-1385 | O-Ring | 1 |
| 4 | 23-1404 | O-Ring | 1 |
| 5 | 23-1405 | O-Ring | 1 |
| 6 | 40-0414 | Adapter Plate | 1 |
| 7 | 40-0416 | Failsafe Collar | 1 |
| 8 | 40-0418 | Failsafe Handle | 1 |
| 9 | 40-0419 | Shaft Extension, Failsafe Air | 1 |
| 10 | 40-0543 | Motor, Failsafe Air Standard | 1 |
| 11 | 40-2742 | Worm | 1 |
| 12 | 40-3960 | Fail Safe Shaft, KR | 1 |
| 13 | 40-3962 | Housing, KR Shaft Adjustment | 1 |
| 14 | 40-3964 | Failsafe Nut Assy | 1 |
| 15 | 40-4978 | Failsafe Body | 1 |
| 16 | 40-4979 | Worm Gear | 1 |
| 17 | 50-0072 | Screw | 6 |
| 18 | 50-0103 | Lock Washer | 3 |
| 19 | 50-0154 | Roll Pin | 1 |
| 20 | 50-0156 | Screw | 1 |
| 21 | 50-0157B | Bearing, NTA-1220 | 1 |
| 22 | 50-0157T | Thrust Washer, TRB-1220 | 2 |
| 23 | 50-0158 | Roller Bearing | 1 |
| 24 | 50-0160 | Set Screw | 2 |
| 25 | 50-0223 | Set Screw | 2 |
| 26 | 50-0287 | Roll Pin | 1 |
| 27 | 50-0483 | Roller Bearing | 1 |
| 28 | 50-0686 | Bearing | 1 |
| 29 | 50-0687 | Thrust Washer | 2 |

## Failsafe Air Operator (40-3963)




| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1123 | O-Ring | 1 |
| 2 | 23-1356 | O-Ring | 1 |
| 3 | 23-1385 | O-Ring | 1 |
| 4 | 23-1404 | O-Ring | 1 |
| 5 | 23-1405 | O-Ring | 1 |
| 6 | 40-0414 | Adapter Plate | 1 |
| 7 | 40-0416 | Failsafe Collar | 1 |
| 8 | 40-0418 | Failsafe Handle | 1 |
| 9 | 40-0715 | Hydraulic Adapter | 1 |
| 10 | 40-0719 | Motor, Failsafe Hydraulic | 1 |
| 11 | 40-2742 | Worm | 1 |
| 12 | 40-3960 | Failsafe Shaft | 1 |
| 13 | 40-3962 | Housing, KR Shaft Adjustment | 1 |
| 14 | 40-3964 | Failsafe Nut Assy | 1 |
| 15 | 40-4978 | Failsafe Body | 1 |
| 16 | 40-4979 | Worm Gear | 1 |
| 17 | 50-0072 | Screw | 6 |
| 18 | 50-0103 | Lock Washer | 3 |
| 19 | 50-0154 | Roll Pin | 1 |
| 20 | 50-0156 | Screw | 1 |
| 21 | 50-0157B | Bearing | 1 |
| 22 | 50-0157T | Thrust Washer | 2 |
| 23 | 50-0158 | Roller Bearing | 1 |
| 24 | 50-0160 | Set Screw | 2 |
| 25 | 50-0215 | Screw | 4 |
| 26 | 50-0223 | Set Screw | 2 |
| 27 | 50-0483 | Roller Bearing | 1 |
| 28 | 50-0686 | Thrust Bearing, NTA-2435 | 1 |
| 29 | 50-0687 | Thrust Washer, TRF-2435 | 2 |

## Failsafe Hydraulic Operator (40-4255)




PACSEAL HYDRAULICS

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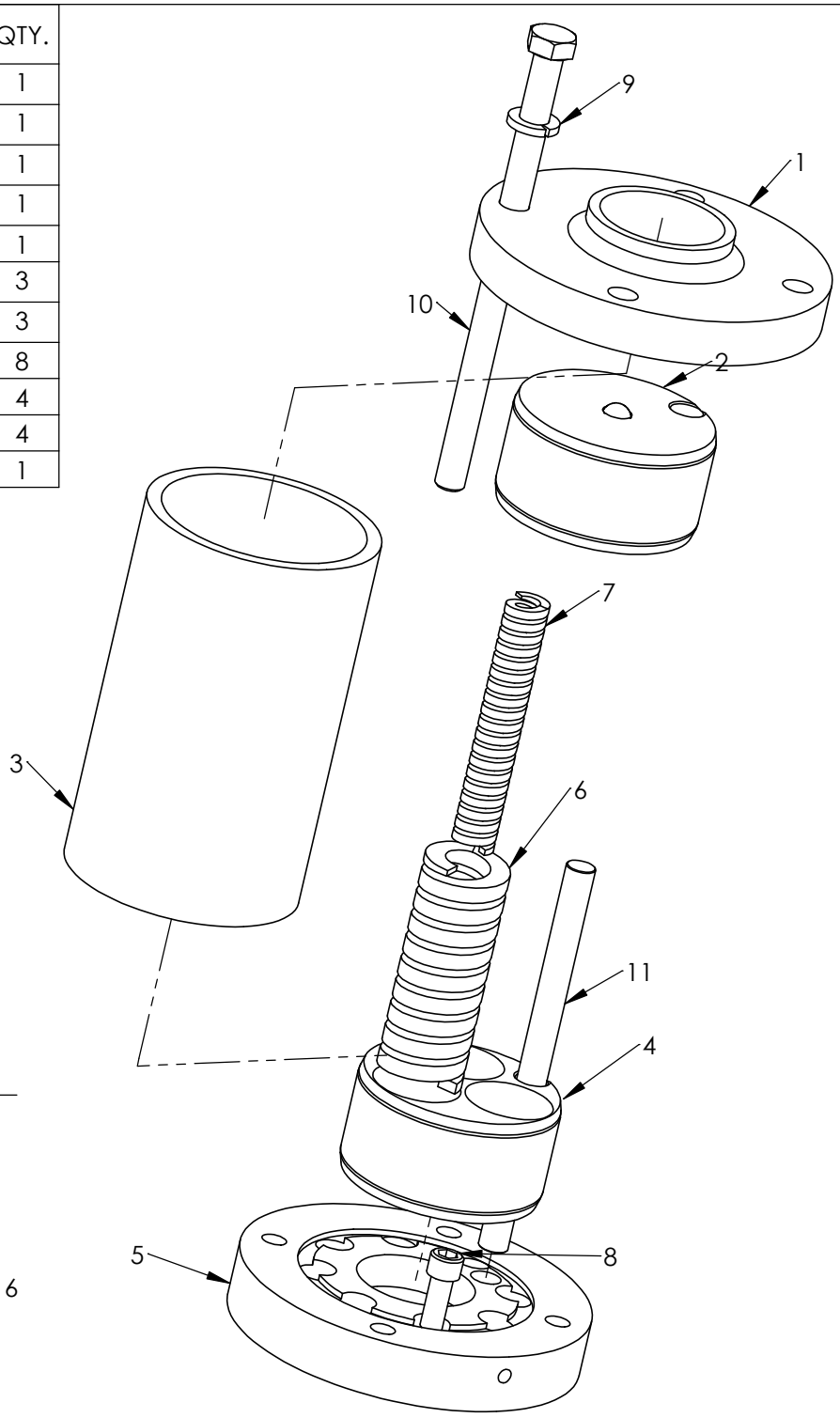
TITLE **Failsafe Air and Hydraulic Operators Assembly Drawing**

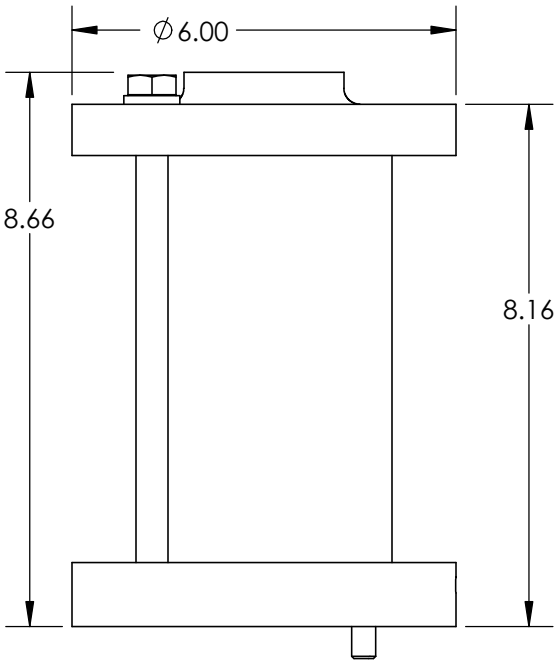
SIZE **A** REV **10**

SHEET 17 OF 25

5 4 3 2 1

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 40-2654 | Plate, Upper Actuator | 1 |
| 2 | 40-2655 | Plate, Upper Spring | 1 |
| 3 | 40-2656 | Cylinder, Actuator | 1 |
| 4 | 40-2657 | Plate, Lower Spring | 1 |
| 5 | 40-2658 | Plate, Lower Actuator | 1 |
| 6 | 40-2659 | Spring, Outer | 3 |
| 7 | 40-2660 | Spring, Inner | 3 |
| 8 | 50-0072 | SHCS | 8 |
| 9 | 50-0104 | Lock Washer | 4 |
| 10 | 50-0434 | Bolt | 4 |
| 11 | 50-0435 | Rod | 1 |




# KIT PART NUMBER
# 40-2927

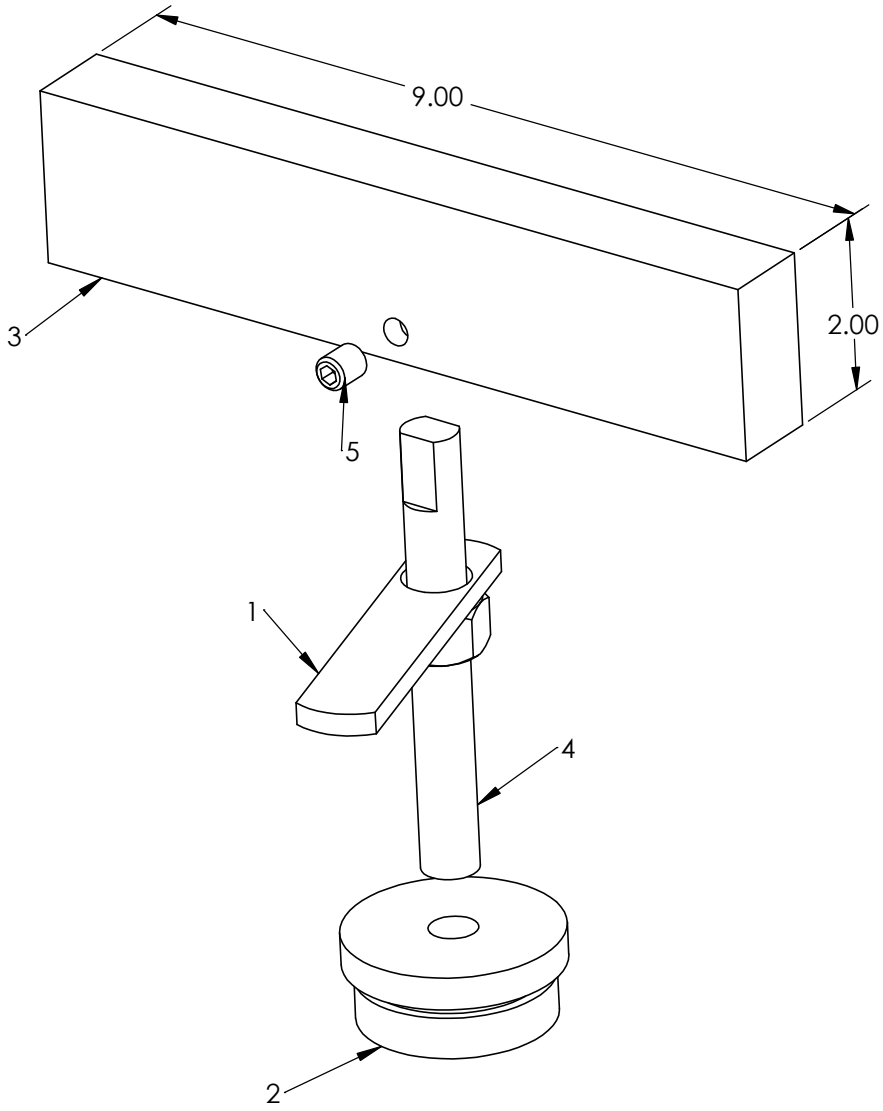
PACSEAL HYDRAULICS

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TITLE **High Pressure Low Deadband Adjustment Head Assembly Drawing**

SIZE **A** REV 10

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 40-0135 | Lock Handle | 1 |
| 2 | 40-0140 | Plug, Adjustment Head | 1 |
| 3 | 40-3237 | Handle, Fail Safe HP | 1 |
| 4 | 40-3414 | Adjusting Rod | 1 |
| 5 | 50-0482 | Set Screw | 2 |




# KIT PART NUMBER
# 40-3558

PACSEAL HYDRAULICS

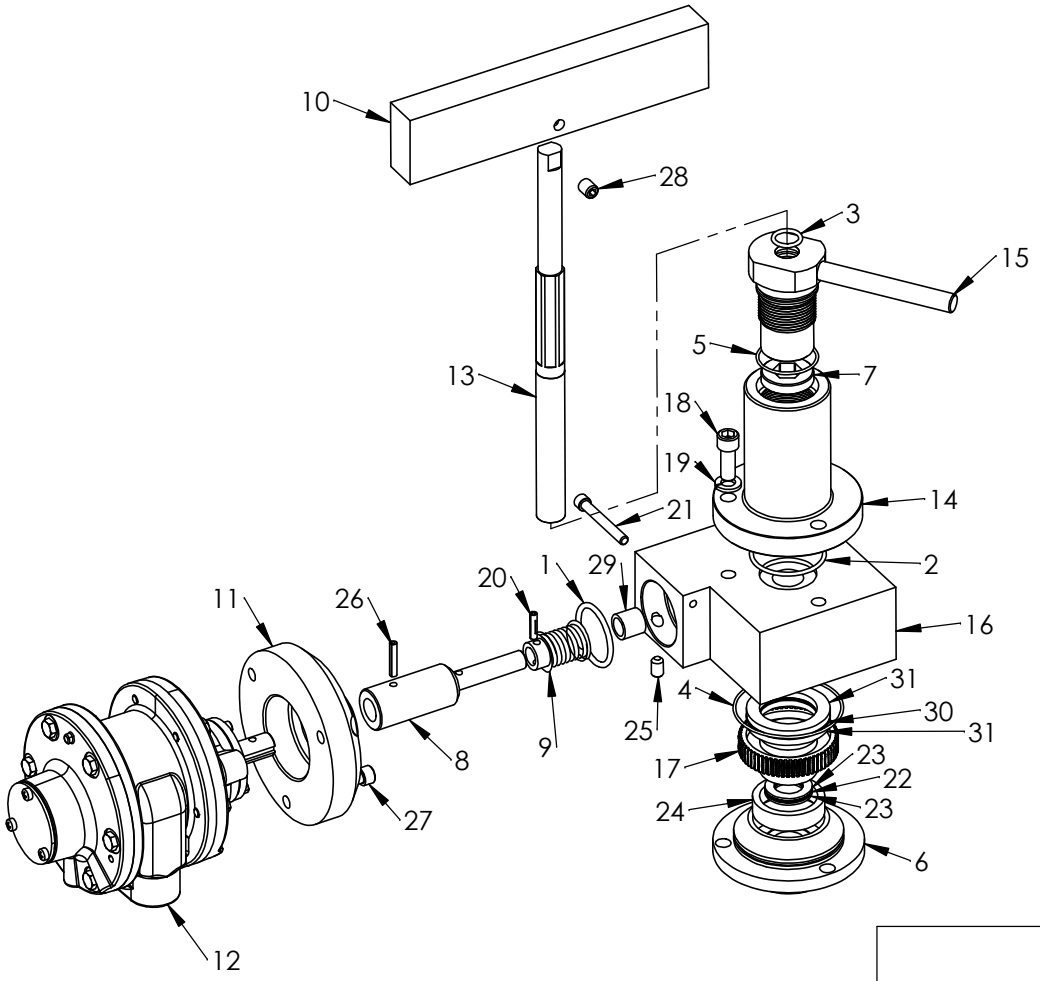
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TITLE
**High Pressure Output Manual Handle Assembly Drawing**

SIZE **A** | REV 10

## High Pressure Output Failsafe Air Actuator (40-4982) with Standard Motor

*Used exclusively with "H" and"W" Regulators*




| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1123 | O-Ring | 1 |
| 2 | 23-1356 | O-Ring | 1 |
| 3 | 23-1385 | O-Ring | 1 |
| 4 | 23-1404 | O-Ring | 1 |
| 5 | 23-1405 | O-Ring | 1 |
| 6 | 40-0414 | Adapter Plate | 1 |
| 7 | 40-0416 | Collar | 1 |
| 8 | 40-0716 | Shaft Extension | 1 |
| 9 | 40-2742 | Worm | 1 |
| 10 | 40-3237 | Handle | 1 |
| 11 | 40-3757 | Adapter Plate | 1 |
| 12 | 40-3761 | Air Motor | 1 |
| 13 | 40-3960 | Fail Safe Shaft | 1 |
| 14 | 40-3962 | Housing | 1 |
| 15 | 40-3964 | Fail Safe Nut Assy | 1 |
| 16 | 40-4978 | Fail Safe Body | 1 |
| 17 | 40-4979 | Worm Gear | 1 |
| 18 | 50-0072 | SHCS | 6 |
| 19 | 50-0103 | Lock Washer | 3 |
| 20 | 50-0154 | Roll Pin | 1 |
| 21 | 50-0156 | Screw | 1 |
| 22 | 50-0157B | Bearing | 1 |
| 23 | 50-0157T | Thrust Washer | 2 |
| 24 | 50-0158 | Roller Bearing | 1 |
| 25 | 50-0223 | Hex Socket Set Screw | 2 |
| 26 | 50-0287 | Roll Pin | 1 |
| 27 | 50-0319 | Screw | 3 |
| 28 | 50-0482 | Set Screw, Cup Point | 2 |
| 29 | 50-0483 | Roller Bearing | 1 |
| 30 | 50-0686 | Thrust Bearing | 1 |
| 31 | 50-0687 | Thrust Washer | 2 |

PACSEAL HYDRAULICS

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TITLE
**High Pressure Output Failsafe Air Operators Assembly Drawing**

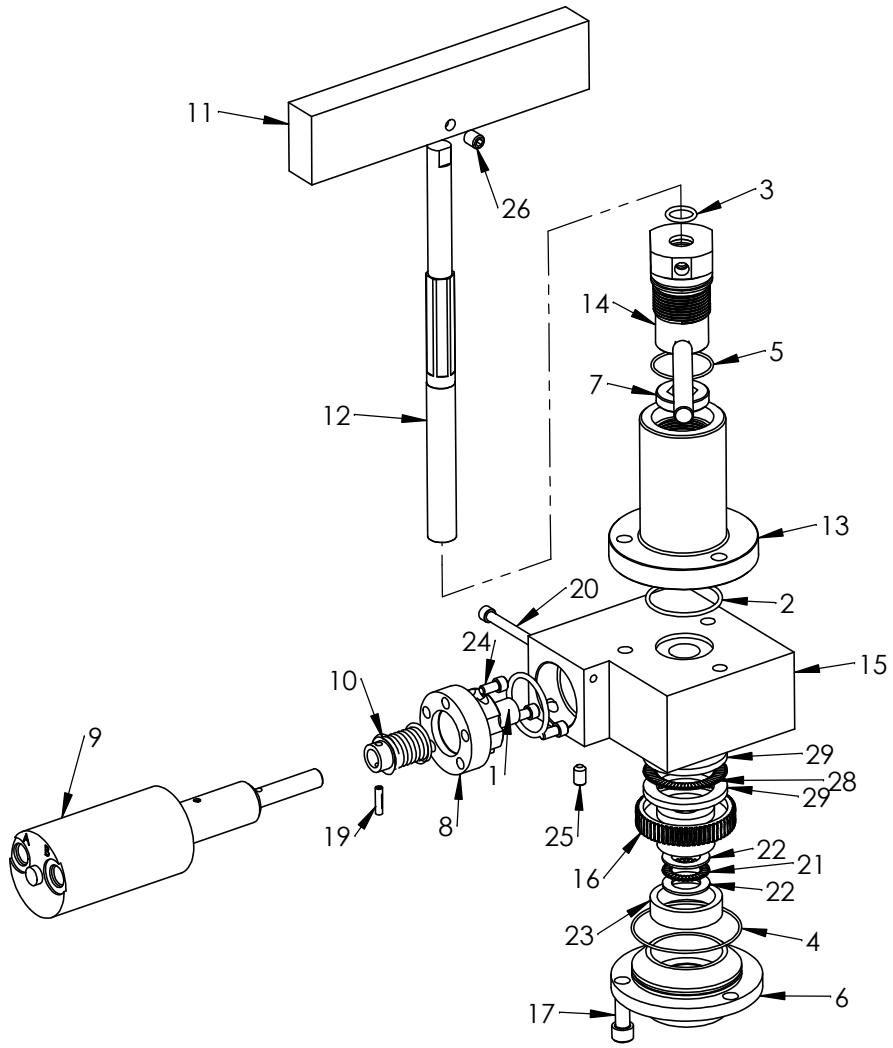
SIZE **A** REV **10**



5 4 3 2 1

## High Pressure Output Failsafe Hydraulic Actuator (40-4981) with High Torque Motor

*Used exclusively with "H" and "W" Regulator*




| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1123 | O-Ring | 1 |
| 2 | 23-1356 | O-Ring | 1 |
| 3 | 23-1385 | O-Ring | 1 |
| 4 | 23-1404 | O-Ring | 1 |
| 5 | 23-1405 | O-Ring | 1 |
| 6 | 40-0414 | Adapter Plate | 1 |
| 7 | 40-0416 | Collar | 1 |
| 8 | 40-0715 | Hydraulic Adapter | 1 |
| 9 | 40-0719 | Motor | 1 |
| 10 | 40-2742 | Worm | 1 |
| 11 | 40-3237 | Handle | 1 |
| 12 | 40-3960 | Shaft | 1 |
| 13 | 40-3962 | Housing | 1 |
| 14 | 40-3964 | Fail Safe Nut Assy | 1 |
| 15 | 40-4978 | Fail Safe Body | 1 |
| 16 | 40-4979 | Worm Gear | 1 |
| 17 | 50-0072 | Screw | 6 |
| 18 | 50-0103 | Lock Washer | 3 |
| 19 | 50-0154 | Roll Pin | 1 |
| 20 | 50-0156 | Screw | 1 |
| 21 | 50-0157B | Bearing | 1 |
| 22 | 50-0157T | Thrust Washer | 2 |
| 23 | 50-0158 | Roller Bearing | 1 |
| 24 | 50-0215 | Screw | 5 |
| 25 | 50-0223 | Set Screw | 2 |
| 26 | 50-0482 | Set Screw | 2 |
| 27 | 50-0483 | Roller Bearing | 1 |
| 28 | 50-0686 | Thrust Bearing | 1 |
| 29 | 50-0687 | Thrust Washer | 2 |

PACSEAL HYDRAULICS

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TITLE
**High Pressure Output Failsafe Hydraulic Operator Assembly Drawing**

SIZE **A** | REV 10

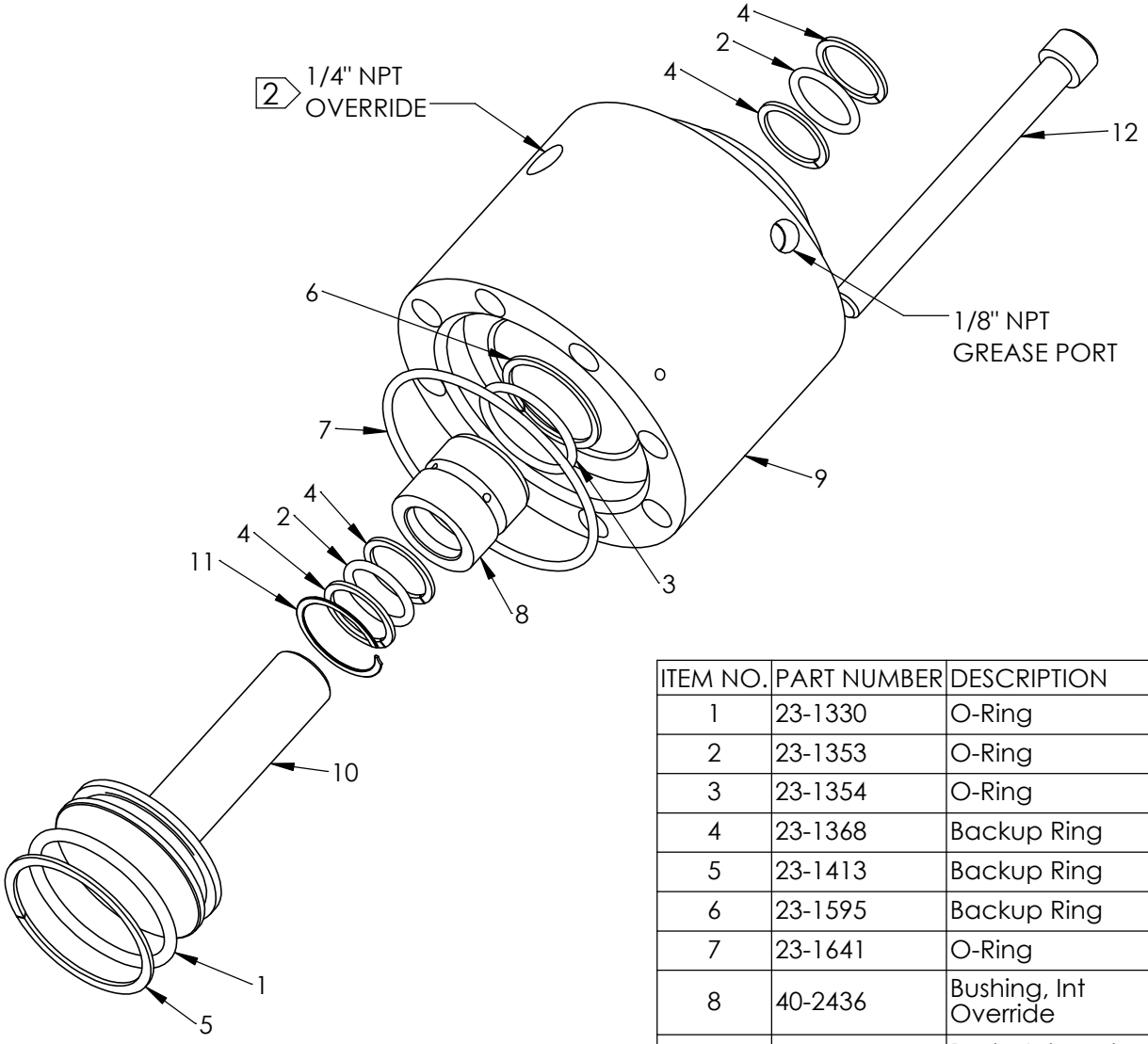


5 4 3 2 1

# KIT PART NUMBER
# 40-4886

NOTES:

1. IO to KR Mounting Bolts (8 required, not included)
   - 50-0493: FOR MODELS "L", "R", "D" & "V"
   - 50-0327: FOR MODELS "H" & "W"
2. OVERRIDE PRESSURE MUST BE EQUAL TO OR EXCEED INLET PRESSURE. NORMAL OPERATION MUST BE VENTED.




| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 23-1330 | O-Ring | 1 |
| 2 | 23-1353 | O-Ring | 2 |
| 3 | 23-1354 | O-Ring | 1 |
| 4 | 23-1368 | Backup Ring | 4 |
| 5 | 23-1413 | Backup Ring | 1 |
| 6 | 23-1595 | Backup Ring | 1 |
| 7 | 23-1641 | O-Ring | 1 |
| 8 | 40-2436 | Bushing, Int Override | 1 |
| 9 | 40-4887 | Body, Internal Override | 1 |
| 10 | 40-4888 | Piston, Override | 1 |
| 11 | 50-0409 | Retaining Ring | 1 |
| 1 12 | NOTE 1 | SHCS | 8 |

PacSeal Hydraulics

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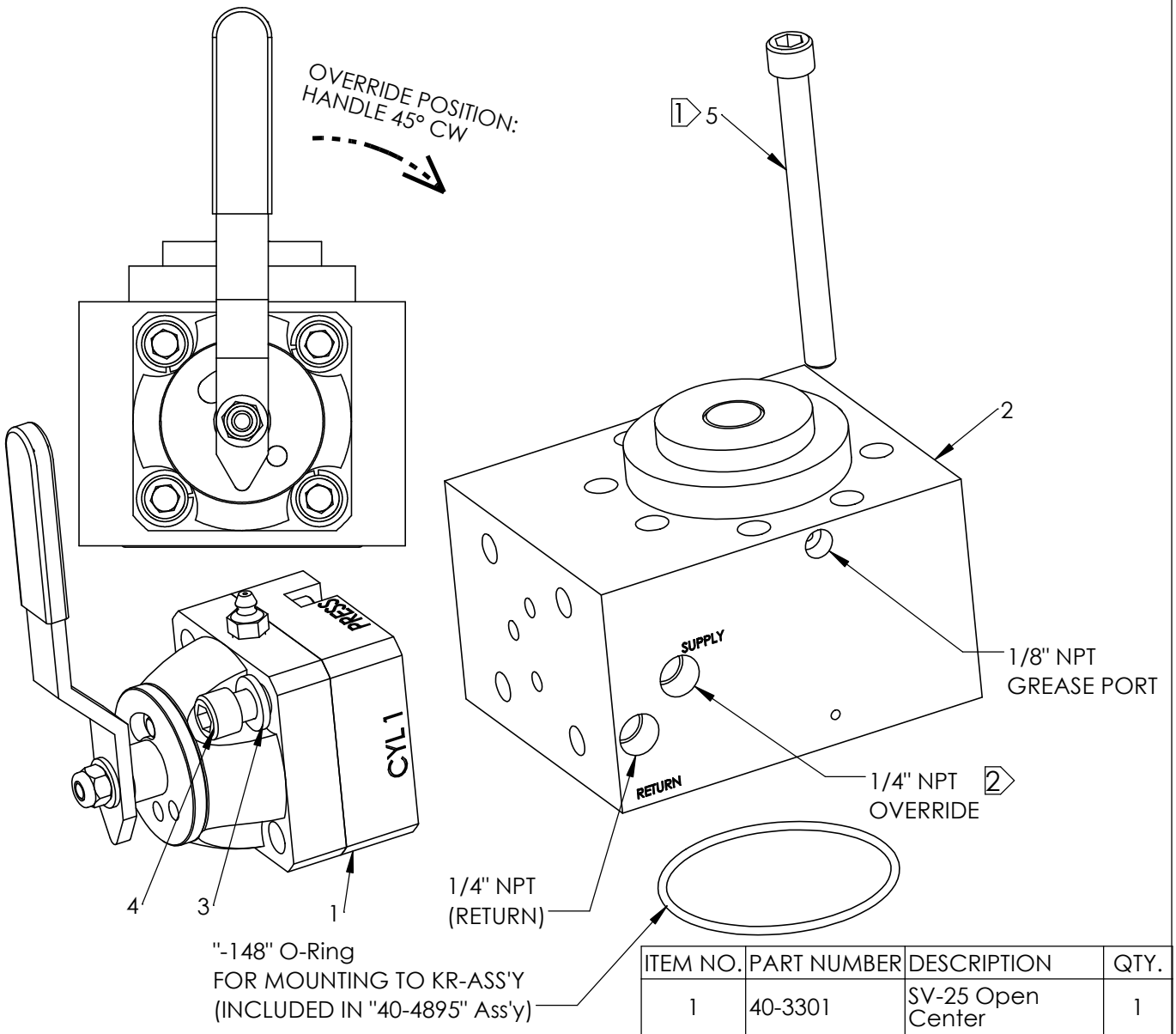
TITLE **Internal Override Bypass Direct Operation Assembly Drawing**

SIZE A | REV 10

# KIT PART NUMBER
# 40-4899

NOTES:

1. IO to KR Mounting Bolts (8 required, not included)
   - 50-0493: FOR MODELS "L", "R", "D" & "V"
   - 50-0327: FOR MODELS "H" & "W"
2. OVERRIDE PRESSURE MUST BE EQUAL TO OR EXCEED INLET PRESSURE. NORMAL OPERATION MUST BE VENTED.




| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 40-3301 | SV-25 Open Center | 1 |
| 2 | 40-4895 | Internal Override, SV | 1 |
| 3 | 50-0103 | Lock Washer | 4 |
| 4 | 50-0338 | SHCS | 4 |
| 1 5 | NOTE 1 | SHCS | 8 |

PacSeal Hydraulics

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TITLE: **Internal Override Bypass w/ SV-25 Assembly Drawing**

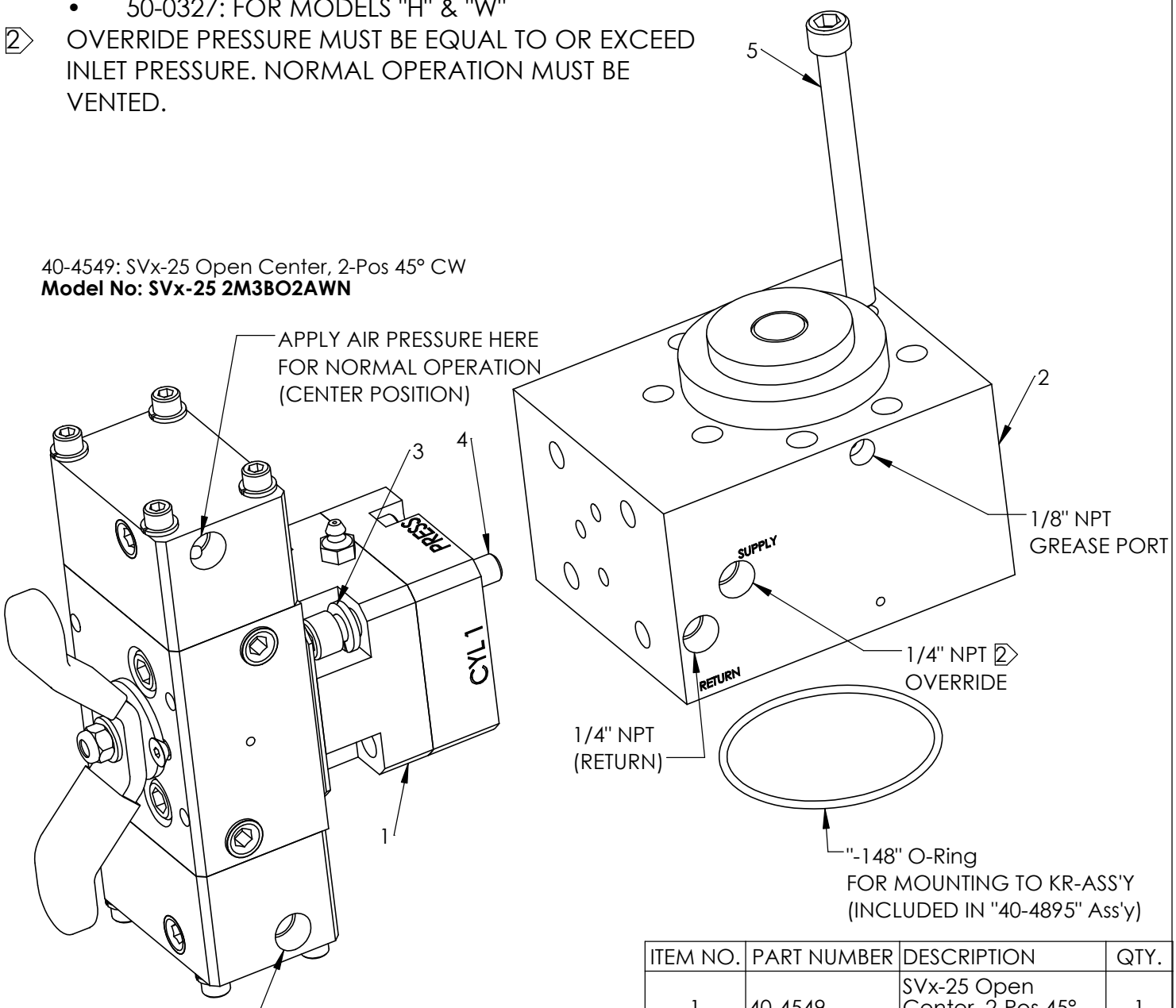
SIZE: A | REV: 10

# KIT PART NUMBER
# 40-4894

NOTES:

1. IO to KR Mounting Bolts (8 required, not included)
   - 50-0493: FOR MODELS "L", "R", "D" & "V"
   - 50-0327: FOR MODELS "H" & "W"
2. OVERRIDE PRESSURE MUST BE EQUAL TO OR EXCEED INLET PRESSURE. NORMAL OPERATION MUST BE VENTED.

40-4549: SVx-25 Open Center, 2-Pos 45° CW
**Model No: SVx-25 2M3BO2AWN**



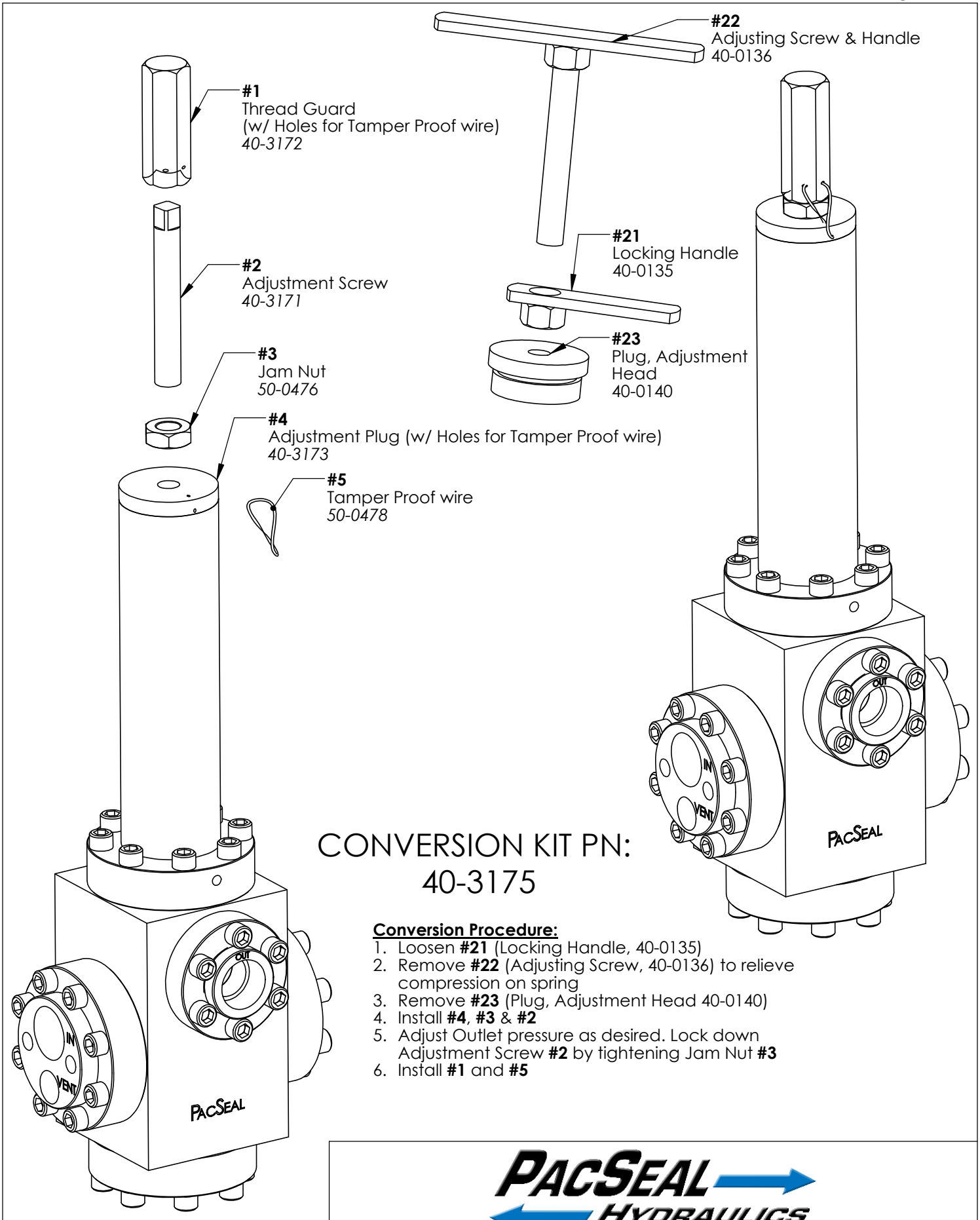

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 40-4549 | SVx-25 Open Center, 2-Pos 45° CW | 1 |
| 2 | 40-4895 | Internal Override, SVX | 1 |
| 3 | 50-0103 | Lock Washer | 4 |
| 4 | 50-0549 | SHCS | 4 |
| 5 | NOTE 1 | SHCS | 8 |

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TITLE: **Internal Override Bypass w/ SVX-25 Assembly Drawing**

SIZE: A | REV: 10




# CONVERSION KIT PN: 40-3175

**Conversion Procedure:**

1. Loosen **#21** (Locking Handle, 40-0135)
2. Remove **#22** (Adjusting Screw, 40-0136) to relieve compression on spring
3. Remove **#23** (Plug, Adjustment Head 40-0140)
4. Install **#4**, **#3** & **#2**
5. Adjust Outlet pressure as desired. Lock down Adjustment Screw **#2** by tightening Jam Nut **#3**
6. Install **#1** and **#5**

PACSEAL HYDRAULICS

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TITLE
**Tamper Proof Conversion Kit**

SIZE **A** | REV 10