



## *KR-100 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

#### General Specifications

Supply Port Size	1 in. NPT or SAE ORB (2X)
Outlet Port Size	1-1/2 in. NPT or SAE ORB
Vent Port Size	1 in. NPT or SAE ORB
Working Pressure Options (Liquid)	3000 or 5000 psi
Regulated Outlet Pressure Options	See Product Configurator
Cv Factor Outlet	9.4
Cv Factor Vent	1.4
Rated Flow	75 gpm
Temperature Rating (Regulators and Failsafe Air Motors)	-40° to 250°F
Fluid Media	Hydraulic oil or lubricated water <sup>1</sup>
Weight	See installation drawings

#### Materials

ShearFlo Sealing Components (i.e. Rotor and Seal Rings)	400 series hardened stainless steel <sup>1</sup>
Body	Carbon Steel
Flanges and Operators	Carbon Steel
Hardware	Coated Carbon Steel
O-rings	Buna-N (N), Viton (V), or EPR (E)
Backup Rings	Teflon

<sup>1</sup>For water based media, special alloy seal rings may be required for optimum performance and durability - Contact PacSeal for details.

Model	Supply Pressure [psi]	Regulated Outlet Pressure [psi]	Deadband Range [psi]*
L	3000/5000	200-1700	50-150
R		300-2000	100-200
P		50-5000	0-100

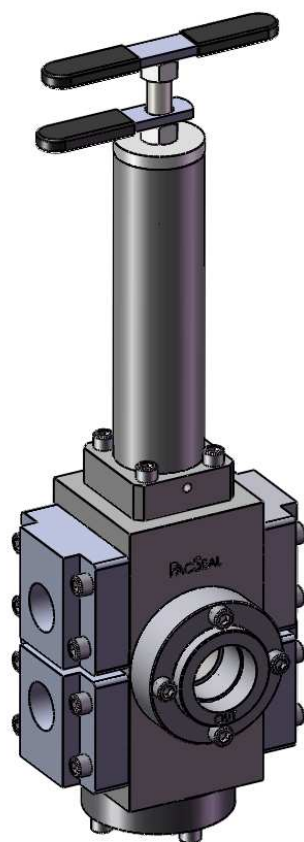
\*Deadband is the difference between the set pressure and the actual outlet pressure that triggers the KR to open or vent. The deadband will vary depending on factors that influence the friction between the seal rings and flow plates, such as: type of fluid and lubricity properties, temperature, differential 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.

**Model Number Configurator**

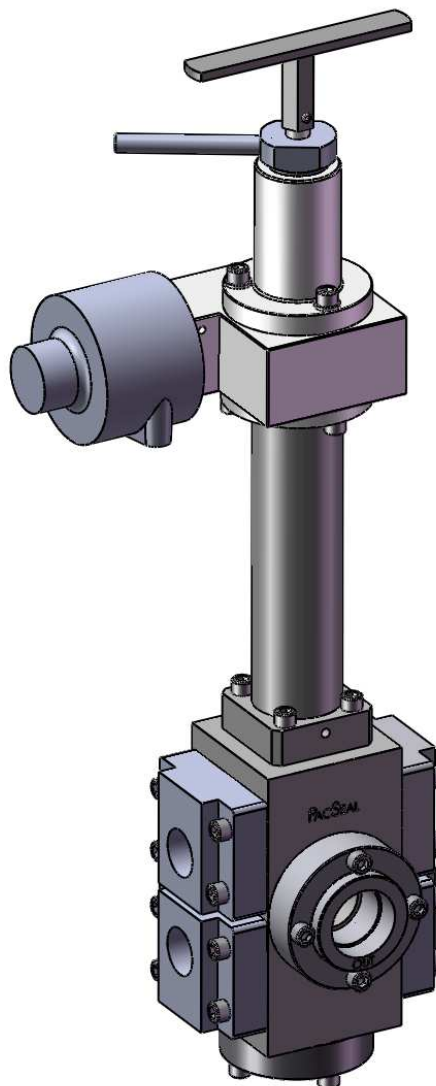
Basic Model	Ports	Supply Pressure	Regulated Outlet Pressure		Operator
			Rated Range <sup>1</sup>	Deadband	
<b>KR-100</b>	<b>N</b> NPT	<b>3</b> 3000 psi	<b>L</b> 200-1700 psi	50-150 psi	<b>M</b> Manual
	<b>S</b> SAE	<b>5</b> 5000 psi	<b>R</b> 300-2000 psi	100-200 psi	<b>FSA</b> Failsafe Air Motor
			<b>P</b> <sup>2</sup> 50-5000 psi	0-100 psi	<b>FSH</b> Failsafe Hydraulic Motor
					<b>H</b> Hydraulic Pilot

Notes: <sup>1</sup> Rated Regulated Outlet Pressure cannot exceed supply pressure. Absolute Outlet Pressure is 0 psi up to 25% above the maximum operating pressure.

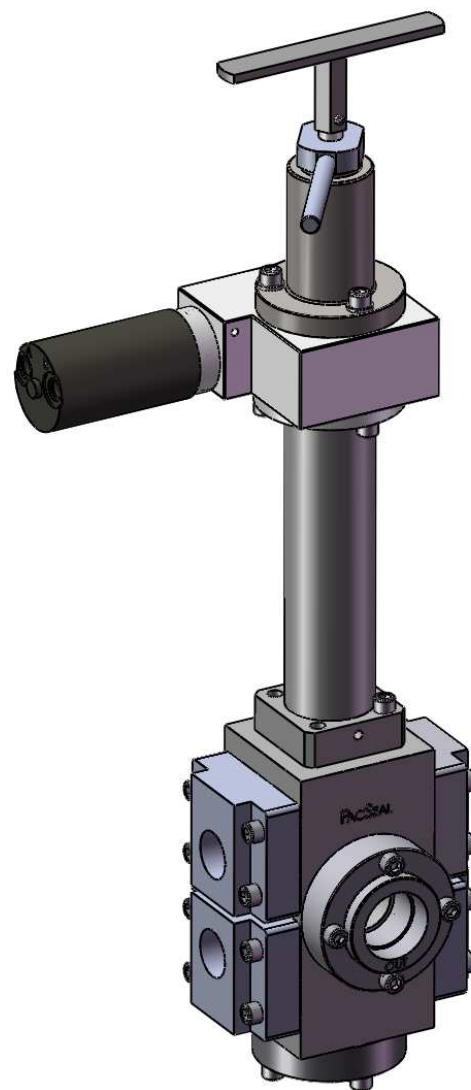
<sup>2</sup> Maximum rated regulated outlet pressure matches the supply pressure for a regulator with the Hydraulic Pilot operator



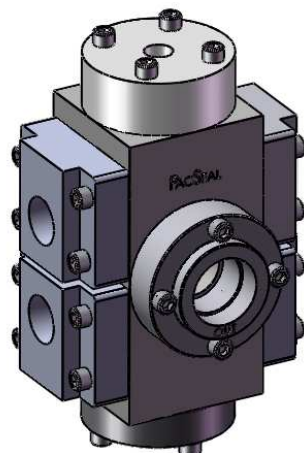
**KR-100 Regulator with Standard Ports (NPT/SAE) and Manual Operator**  
Example: KR-100N3LM



**KR-100 Regulator with Failsafe Air Motor Operator**  
Example: KR-100S3LFSA



**KR-100 Regulator with Failsafe Hydraulic Motor Operator**  
Example: KR-100N5RFSH



**KR-100 Regulator with Hydraulic Pilot Operator**  
Example: KR-100N5PH



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TITLE

**Configuration Overview**

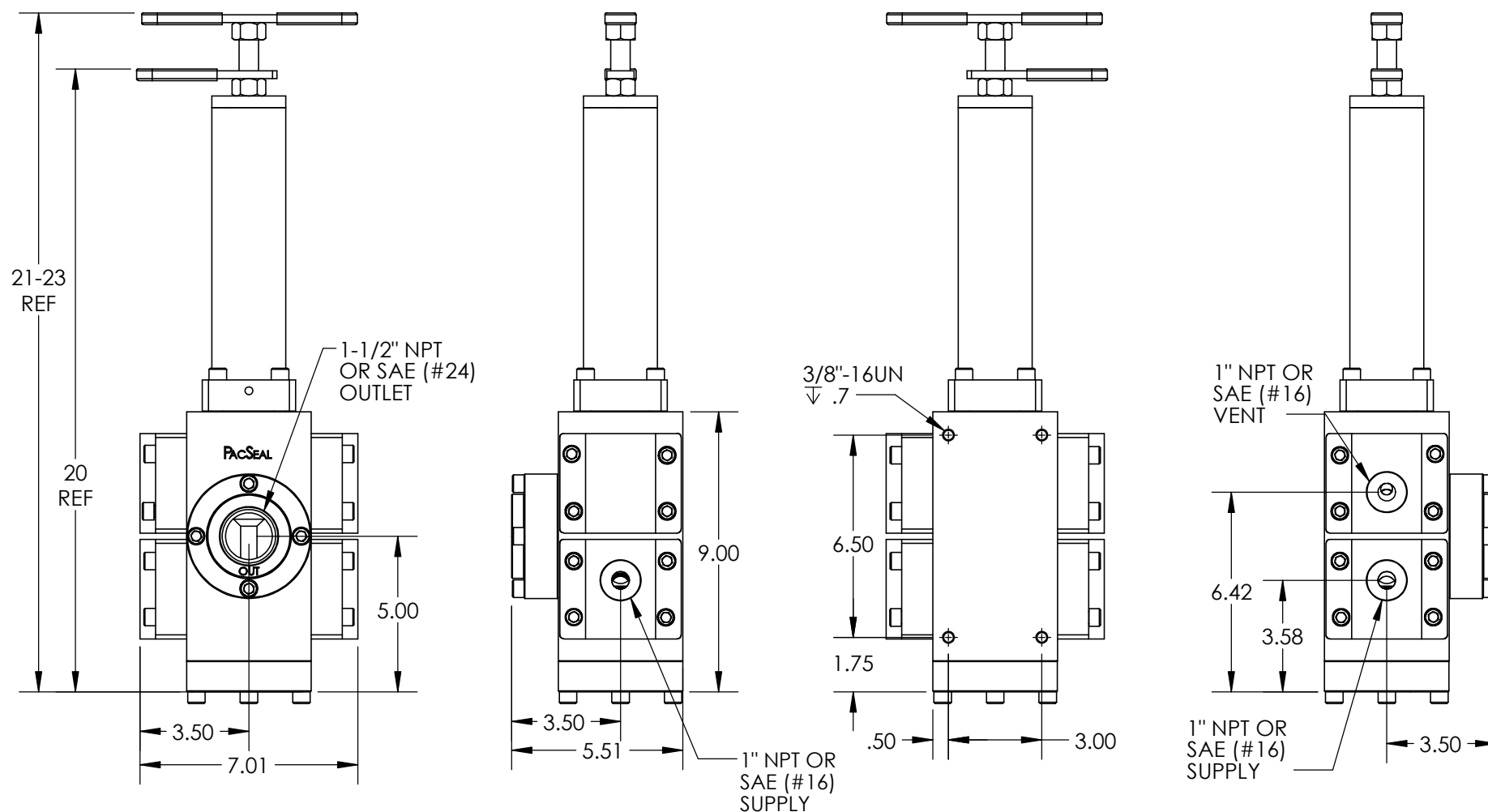
SIZE

**A**

REV

**1**

SHEET 3 OF 11



# 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, R
3. Weight - 68 lb.
4. All dimensions are consistent for KR-100 NPT or SAE porting options, regardless of supply/outlet pressure and operator selection.

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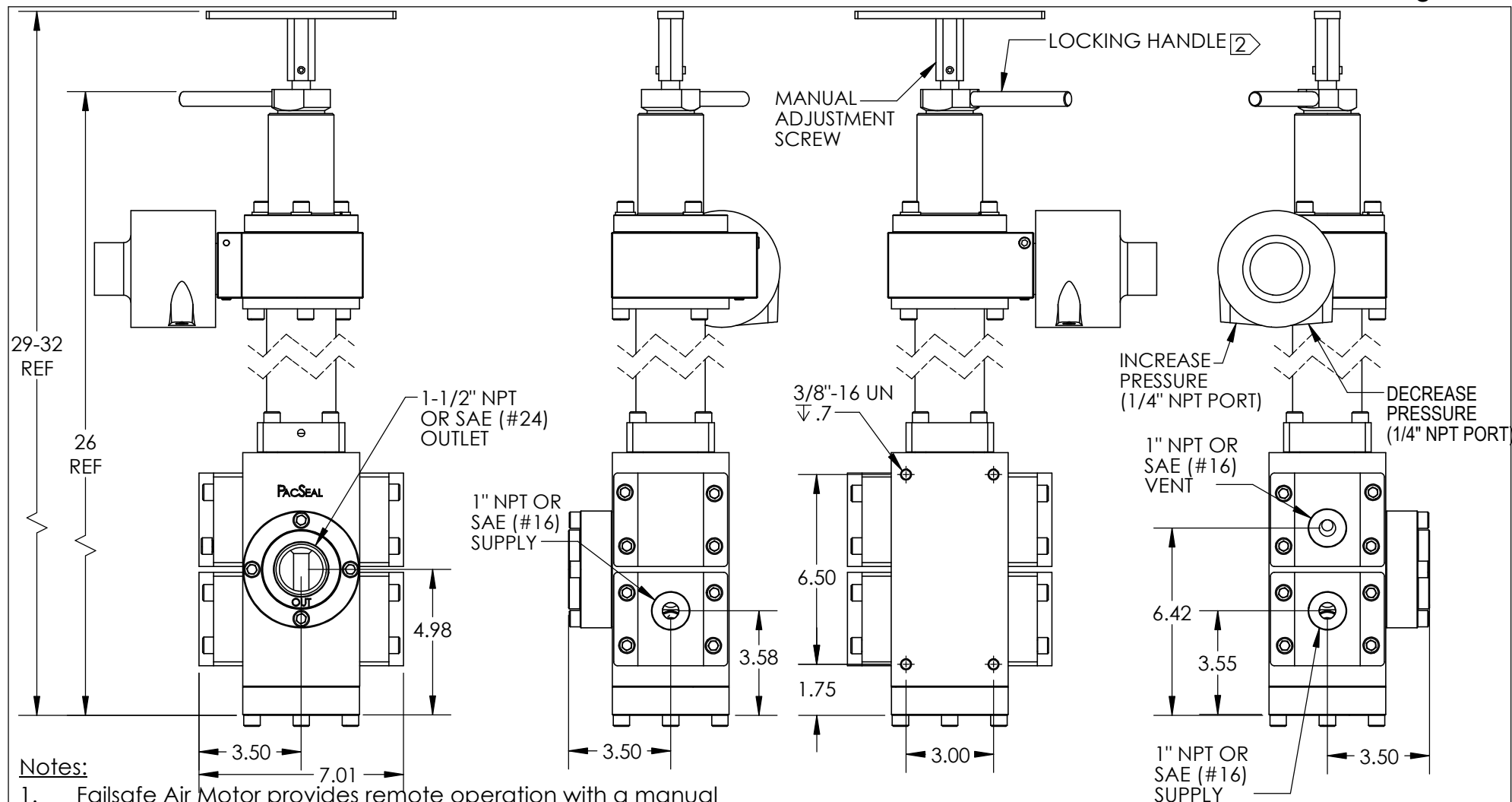
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TITLE  
**KR-100 Regulator w/  
Manual Operator (NPT/SAE)  
Installation Drawing**

SIZE  
**A**

REV  
**2**

SHEET 4 OF 11



# 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 operation. Turn locking handle counter-clockwise to unlock for manual operation/override.
3. Minimum Air Supply - 78 CFM at 100-150 PSI thru 1/4" ID tubing.
4. Model configuration (Regulated Outlet Pressure) options: L, R
5. Weight - 96 lb.
6. All dimensions are consistent for KR-75 NPT or SAE porting options, regardless of supply/outlet pressure and operator selection.

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

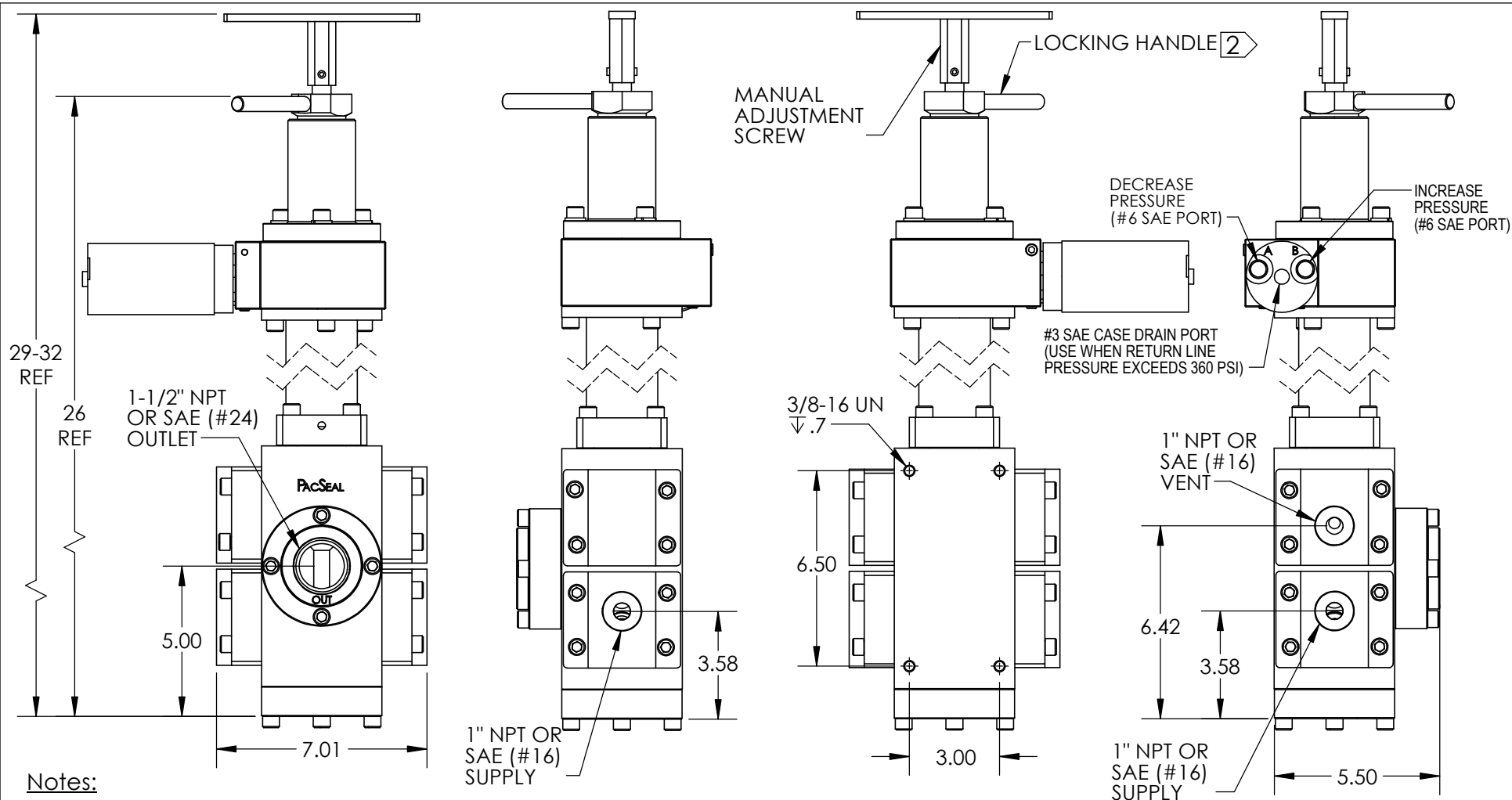
SIZE

**A**

REV

**2**

SHEET 5 OF 11



# 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 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) options: L, R
5. Weight - 93 lb.
6. All dimensions are consistent for KR-100 NPT or SAE porting options, regardless of supply/outlet pressure and operator selection.

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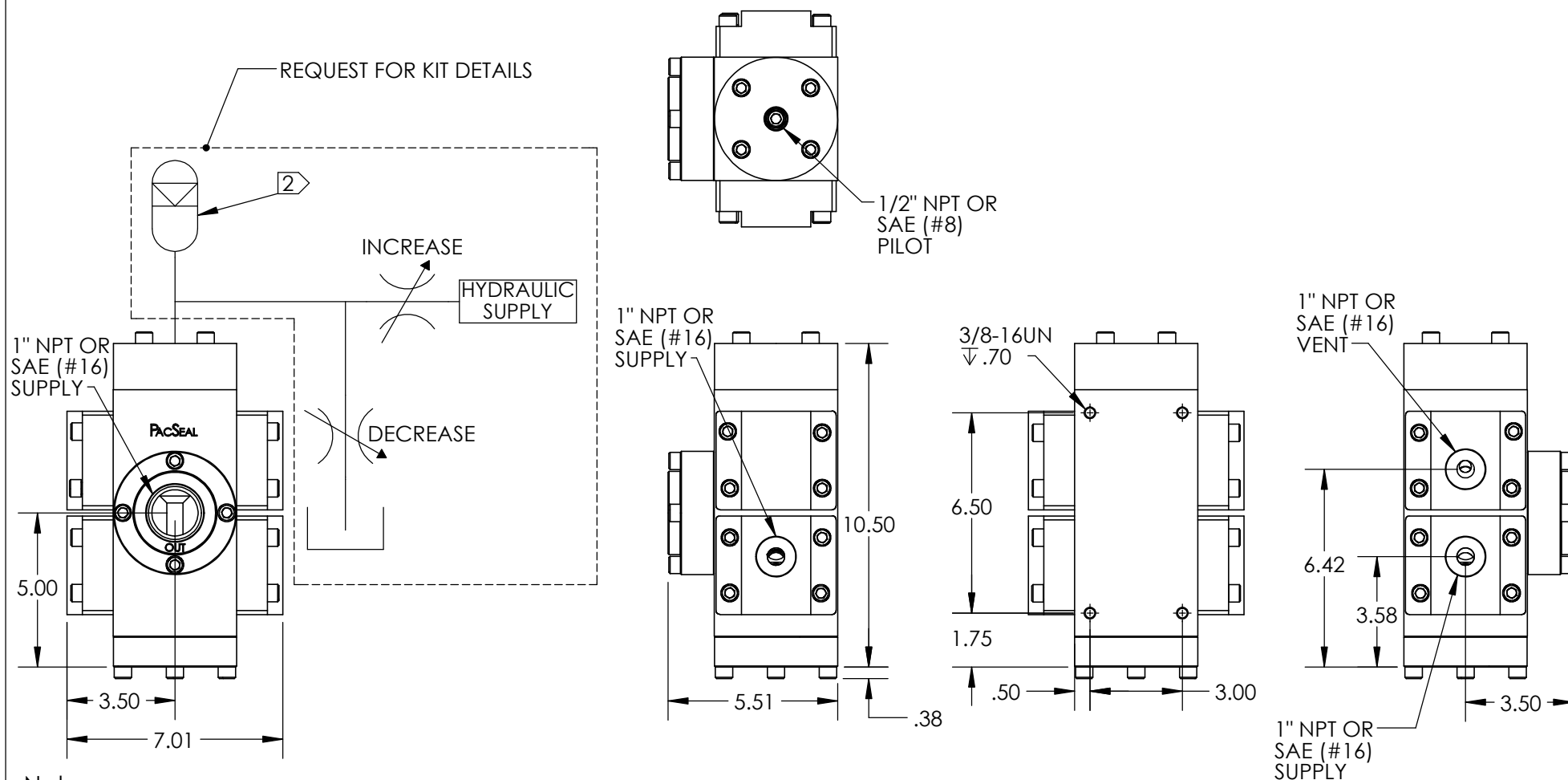
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TITLE **Regulator w/ Failsafe Hydraulic Operator (NPT/SAE) Installation Drawing**

SIZE **A**

REV **2**

SHEET 6 OF 11

**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 Minimum 1 Pint Accumulator is recommended for operation
3. Model configuration (Regulated Outlet Pressure) option: P
4. Weight - 58 lb.
5. All dimensions are consistent for KR-100 NPT or SAE porting options, regardless of supply/outlet pressure and operator selection.

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**TITLE** KR-100 Regulator w/  
Hydraulic Pilot  
Operator (NPT/SAE)  
Installation Drawing

SIZE

**A**

REV

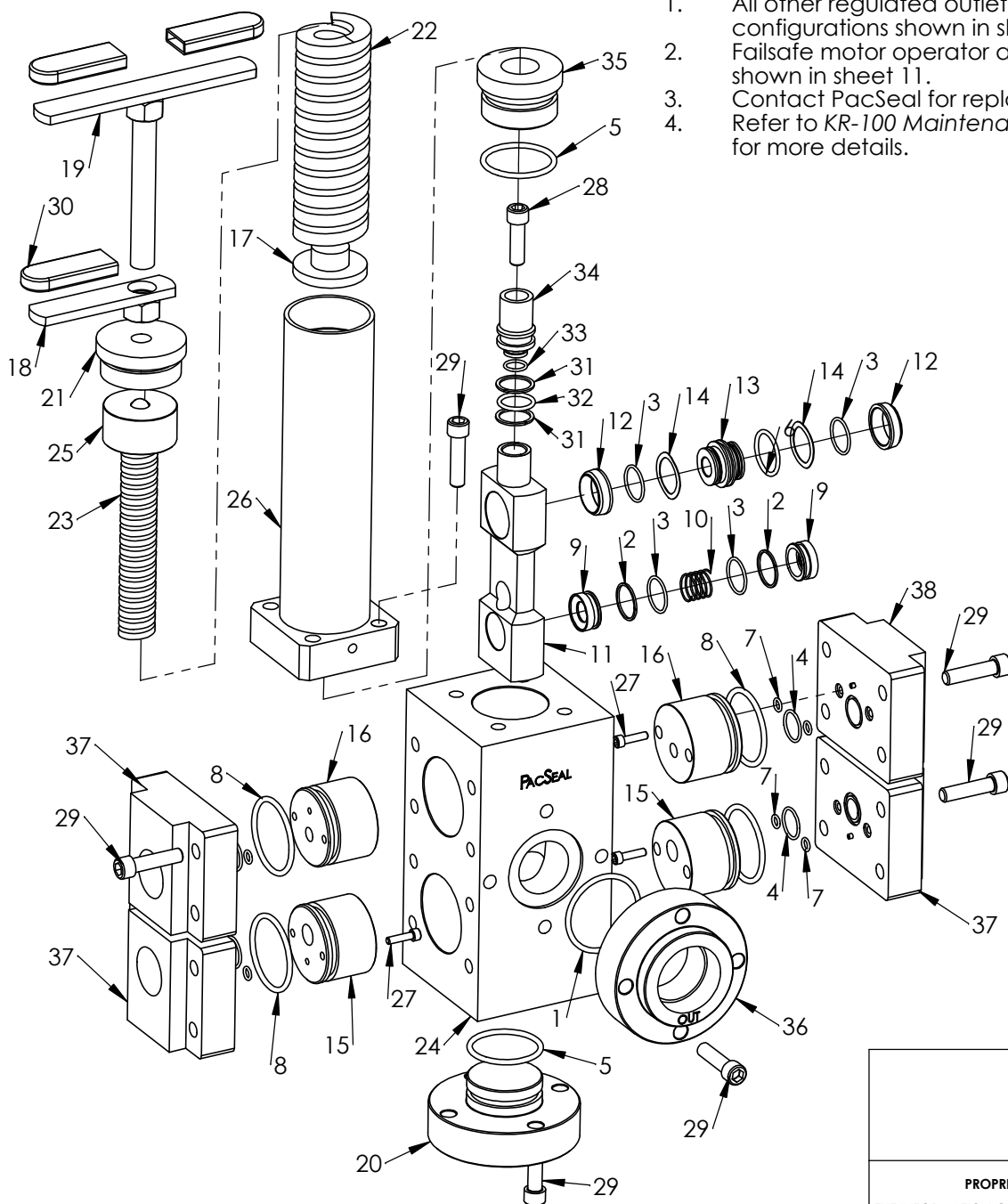
**2**

SHEET 7 OF 11



## Notes:

1. All other regulated outlet pressure model configurations shown in sheet 9 and 10.
2. Failsafe motor operator assembly drawings shown in sheet 11.
3. Contact PacSeal for replacement parts.
4. Refer to KR-100 Maintenance Instructions for more details.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	23-1126	O-Ring	1
2	23-1322	Backup Ring	2
3	23-1323	O-Ring	4
4	23-1326	O-Ring	4
5	23-1330	O-Ring	2
6	23-1334	O-Ring	1
7	23-1335	O-Ring	8
8	23-1336	O-Ring	4
9	40-0014	Seal Ring, Supply	2
10	40-0110	Spring	1
11	40-0111	Seal Container	1
12	40-0113	Seal Ring, Vent	2
13	40-0114	Valve Cage	1
14	40-0115	Wave Spring	2
15	40-0117	Flow Plate, Supply	2
16	40-0118	Flow Plate, Vent	2
17	40-0134	Spring Plate	1
18	40-0135	Lock Handle	1
19	40-0136	Adjusting Screw & Handle	1
20	40-0137	Flange, Lower	1
21	40-0140	Plug, Adjustment Head	1
22	40-0143	Spring, Outer	1
23	40-0144	Spring, Inner	1
24	40-0148	Body, KR-100	1
25	40-0300	Spring Guide	1
26	40-0388	Adjustment Head	1
27	50-0067	Bolt, SHCS	8
28	50-0068	Bolt, SHCS	1
29	50-0069	Bolt, SHCS	28
30	50-0239	Grip, Handle	3
31	Note 1	Backup Ring	2
32	Note 1	O-Ring	1
33	Note 1	O-Ring	1
34	Note 1	Piston	1
35	Note 1	Guide Plunger	1
36	Note 3	Flange, Outlet	1
37	Note 3	Flange, Inlet & Vent	3
38	Note 3	Flange, Blind	1

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## TITLE

**General Assembly  
Overview**

## SIZE

**A**

## REV

**2**

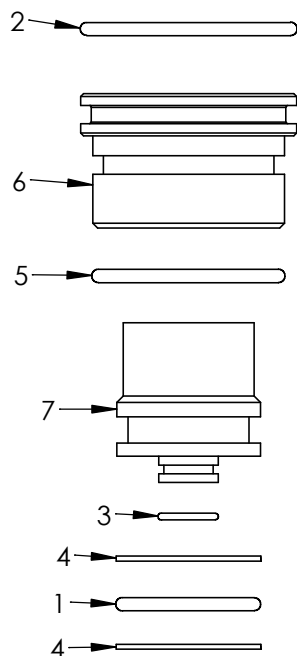
SHEET 8 OF 11



**Notes:**

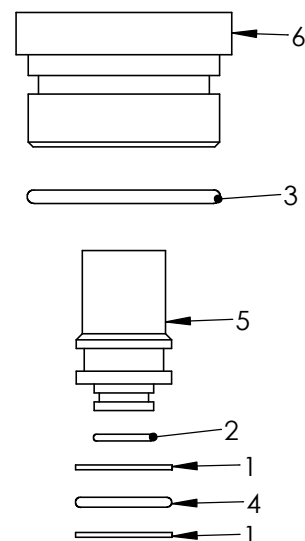
- The listed components vary based on Regulated Outlet Pressure, while all other regulator components (shown in sheet 8 "General Assembly Overview") are shared.

Model	Supply Pressure (psi)	Regulated Outlet Pressure (psi)	Deadband (psi)
L	3000/5000	200-1700	50-150
R	3000/5000	300-2000	100-200



**KR-100 L Regulator**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	23-1124	O-Ring	1
2	23-1126	O-Ring	1
3	23-1333	O-Ring	1
4	23-1342	Backup Ring	2
5	23-1330	O-Ring	1
6	40-0315	Piston Guide, L	1
7	40-2713	Piston, L	1



**KR-100 R Regulator**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	23-1331	Backup Ring	2
2	23-1333	O-Ring	1
3	23-1330	O-Ring	1
4	23-1547	O-Ring	1
5	40-0112	Piston, R	1
6	40-0139	Piston Guide, R	1



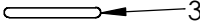
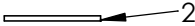
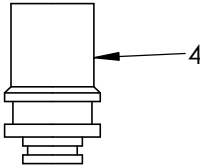
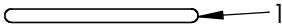
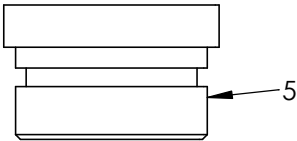
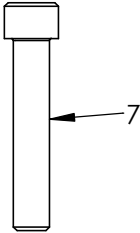
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**TITLE**  
**L and R Model**  
**Configurations**  
**Assembly Drawing**

<b>SIZE</b>	<b>REV</b>
<b>A</b>	<b>1</b>
SHEET 9 OF 11	

Notes:

1. The listed components vary based on Regulated Outlet Pressure, while all other regulator components (shown in sheet 8 "General Assembly Overview") are shared.



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

KR-100 P Regulator  
(Hydraulic Pilot)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	23-1330	O-Ring	1
2	23-1331	Backup Ring	2
3	23-1332	O-Ring	1
4	40-0112	Piston, R	1
5	40-0139	Piston Guide, R	1
6	40-0304	Hydraulic Head	1
7	50-0080	Bolt	1



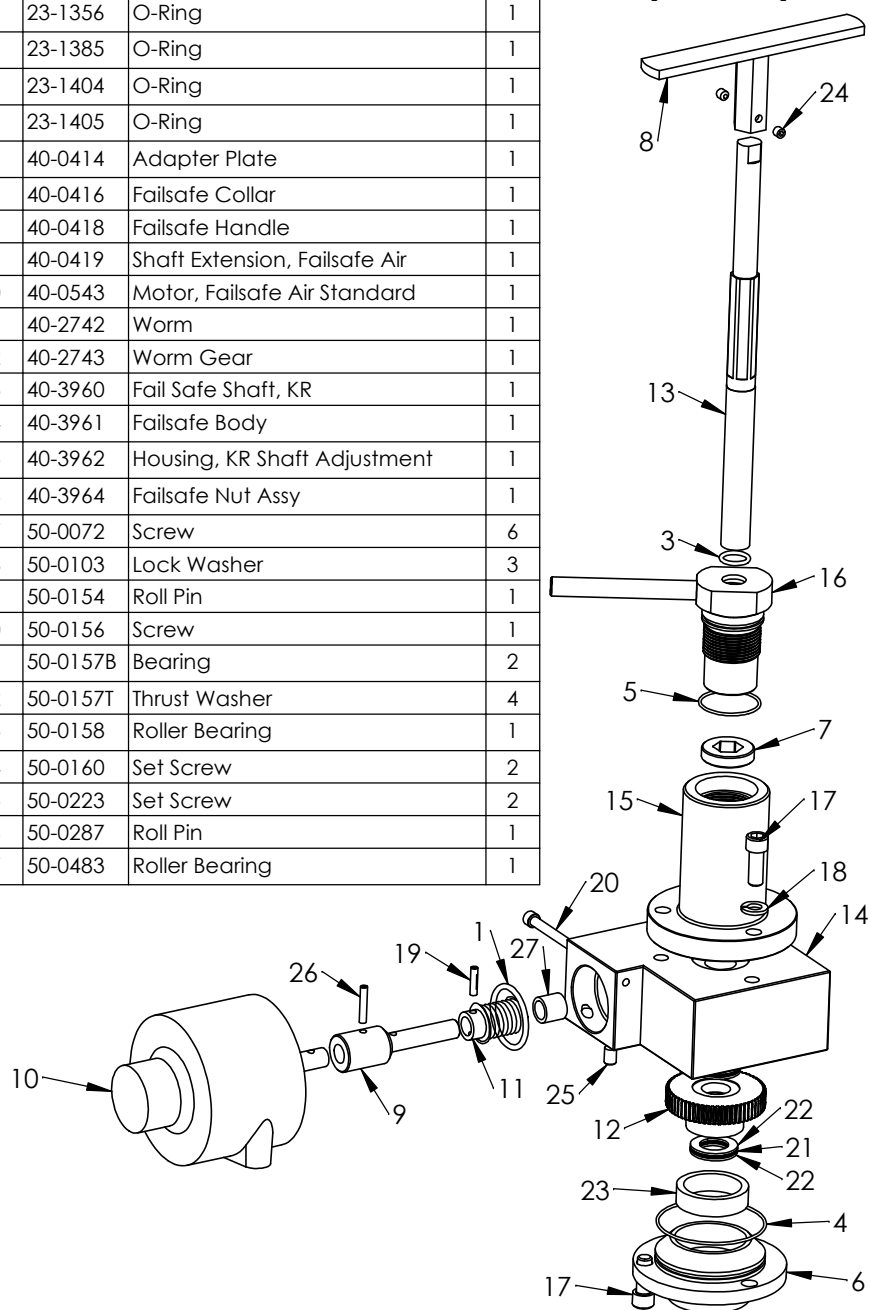
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TITLE  
**P Model  
Configuration  
Assembly Drawing**

SIZE <b>A</b>	REV <b>1</b>
SHEET 10 OF 11	

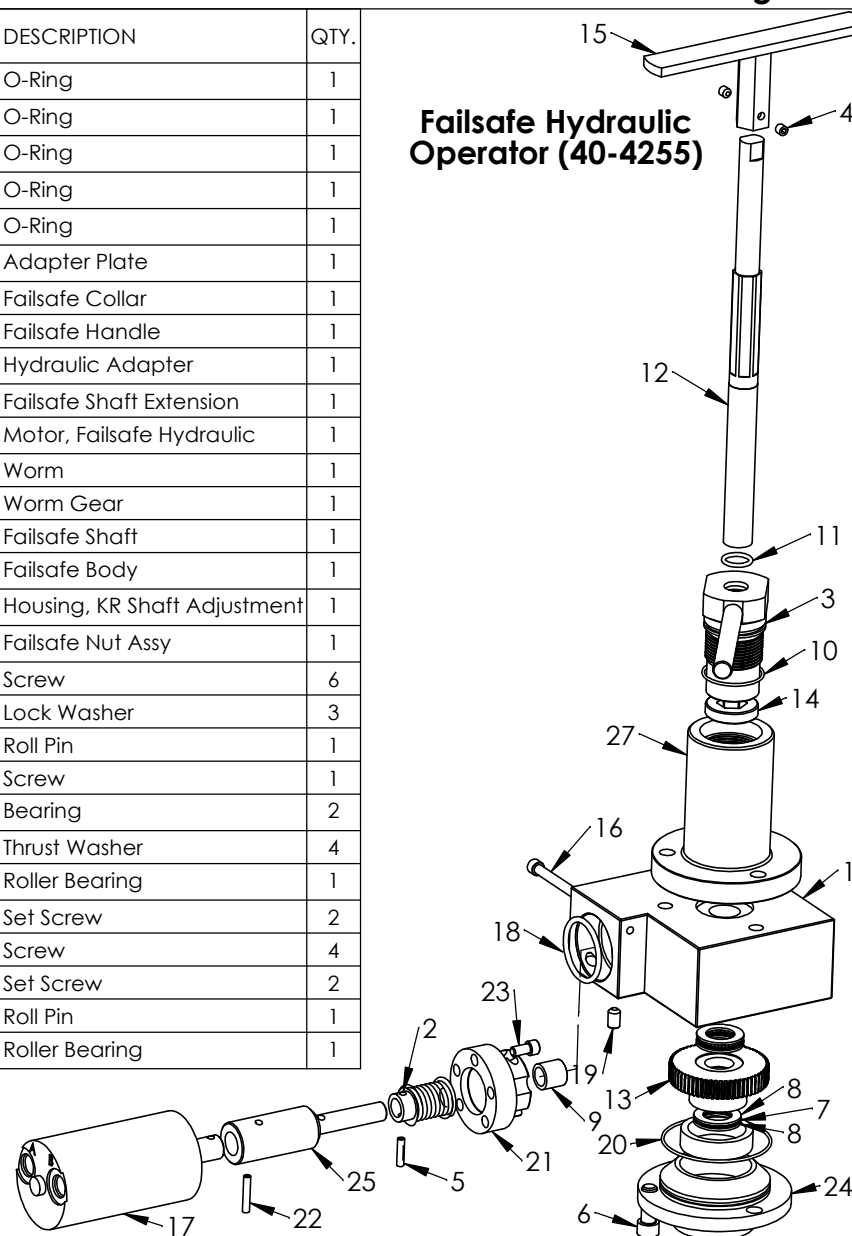
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	23-1123	O-Ring	1
2	23-1356	O-Ring	1
3	23-1385	O-Ring	1
4	23-1404	O-Ring	1
5	23-1405	O-Ring	1
6	40-0414	Adapter Plate	1
7	40-0416	Failsafe Collar	1
8	40-0418	Failsafe Handle	1
9	40-0419	Shaft Extension, Failsafe Air	1
10	40-0543	Motor, Failsafe Air Standard	1
11	40-2742	Worm	1
12	40-2743	Worm Gear	1
13	40-3960	Fail Safe Shaft, KR	1
14	40-3961	Failsafe Body	1
15	40-3962	Housing, KR Shaft Adjustment	1
16	40-3964	Failsafe Nut Assy	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	2
22	50-0157T	Thrust Washer	4
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

### 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	40-0716	Failsafe Shaft Extension	1
11	40-0719	Motor, Failsafe Hydraulic	1
12	40-2742	Worm	1
13	40-2743	Worm Gear	1
14	40-3960	Failsafe Shaft	1
15	40-3961	Failsafe Body	1
16	40-3962	Housing, KR Shaft Adjustment	1
17	40-3964	Failsafe Nut Assy	1
18	50-0072	Screw	6
19	50-0103	Lock Washer	3
20	50-0154	Roll Pin	1
21	50-0156	Screw	1
22	50-0157B	Bearing	2
23	50-0157T	Thrust Washer	4
24	50-0158	Roller Bearing	1
25	50-0160	Set Screw	2
26	50-0215	Screw	4
27	50-0223	Set Screw	2
28	50-0287	Roll Pin	1
29	50-0483	Roller Bearing	1

### Failsafe Hydraulic Operator (40-4255)



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

SIZE

**A**

REV

**2**

SHEET 11 OF 11