

Rotary Actuators- Heavy Duty, Flange Output

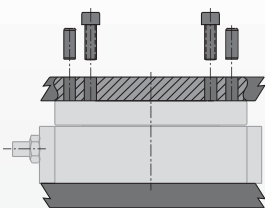
RR SERIES

3.42

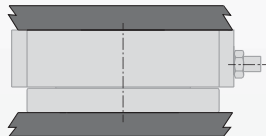
- Tight spaces:**
 The "Ultra Thin" profile and bearing supported flange provide an extremely compact package for tight space applications. Payload can be connected directly to the flange without the need for extra bearing support.
- Large Payload, High Torque:**
 The RR-55, RR-66, RR-76 are design for heavy-duty industrial and foundry applications
- Precision applications:**
 Zero backlash, preloaded ball bearings, and slip fit dowel pins make this a very precise and repeatable rotary actuator.
- Rotary Air Manifold**
 Eliminates twisting airlines.
- Pneumatic/Hydraulic Operation:**
 The RR-76 can be used for either pneumatic or hydraulic operation.

Mounting Information:

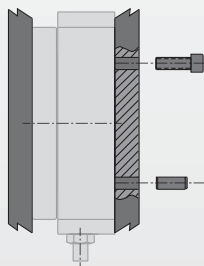
Mounts and operates in any orientation



Payload attaches to flange with screws and locates by using dowel pins



Unit can operate inverted with payload attached to the flange.



Body mounts with screws and locates with dowel pins for accuracy

Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Dual Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	

Air Quality Requirements	40 Micron or Better
Air Filtration	Not Necessary*
Air Lubrication	Low Moisture Content (dry)
Air Humidity	

Temperature Operating Range	-30°~180° F	-35°~80° C
Buna-N Seals (standard)	-20°~300° F	-30°~150° C
Viton Seals (optional)		

Maintenance Specifications [†]	1 million cycles
Expected Life	5 million cycles
with Shock Absorbers	10+ million cycles*
without Shock Absorbers	Yes
w/ Preventative Maintenance	Yes
Field Repairable	Yes
Seal Repair Kits Available	

*Addition of lubrication will greatly increase service life
[†]See Maintenance Section

Product Features

Quality Components

One piece high strength 6013-T6 aircraft quality aluminum body and flange

Anodized Components

Body and flange are hard-coat anodize to 60RC with Teflon® impregnation

Dowel Holes

Slip fit dowel holes in body and flange

Adjustable Flow Controls

Sensors, External Shock Absorbers

(sold separately-see Accessories Section for more info)

Optional Mid Position Stop

Mid position stop for three position applications

Hardened Tool Steel

Rack and pinion components are made from hardened tool steels

Preloaded Bearing

Precision bearing is preloaded for maximum support and zero play

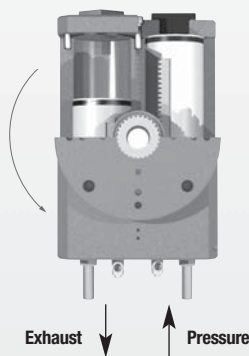
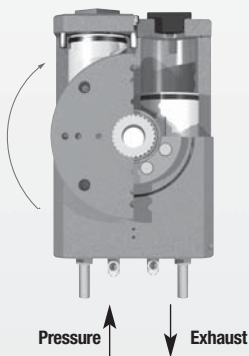
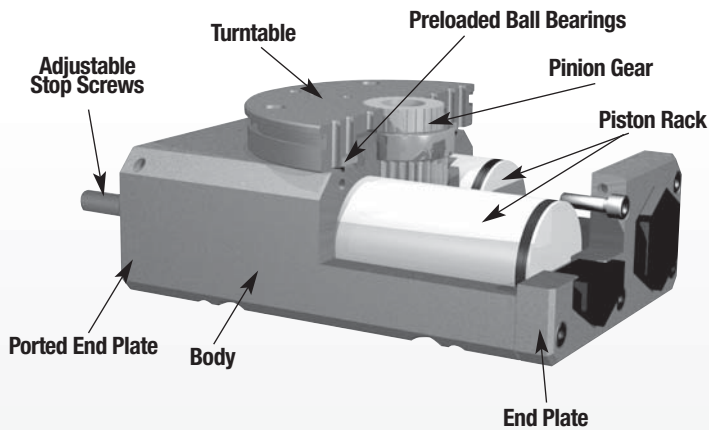
Self-Lubricating Seals

Self lubricating dynamic seals (Viton® only)

Optional Rotary Manifold

Eliminates twisting air lines

Operating Principle



- Air pressure supplied to both cylinders simultaneously using internal porting, drives the piston racks in opposite directions.
- The piston racks simultaneously drive the pinion gear which is attached to the flange.
- The flange is supported in the body by a preloaded ball bearing

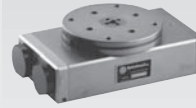
Designed and manufactured in the USA

Style-RR Rotary Actuator

Size -56M

Style:	RR-56	RR-56M
Max. Payload: [†]	30 lbs.	13 Kg
Torque:	311 in/lbs	35 N-m
Weight: [*]	11.6 lbs.	5.3 Kg

[†] Max. payload based on -A shock option.
*Base unit.



See Page **3.44**

Style-RR Rotary Actuator

Size -66M

Style:	RR-66	RR-66M
Max. Payload: [†]	75 lbs.	34 Kg
Torque:	728 in/lbs	82 N-m
Weight: [*]	26.8 lbs.	11.8 Kg

[†] Max. payload based on -A shock option.
*Base unit.



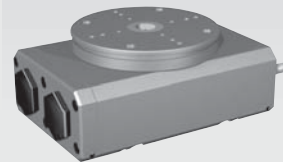
See Page **3.46**

Style-RR Rotary Actuator

Size -76M

Style:	RR-76	RR-76M
Max. Payload: [†]	200 lbs.	91 Kg
Torque:	1900 in/lbs	215 N-m
Weight: [*]	53 lbs.	24 Kg

[†] Max. payload based on -A shock option.
*Base unit.



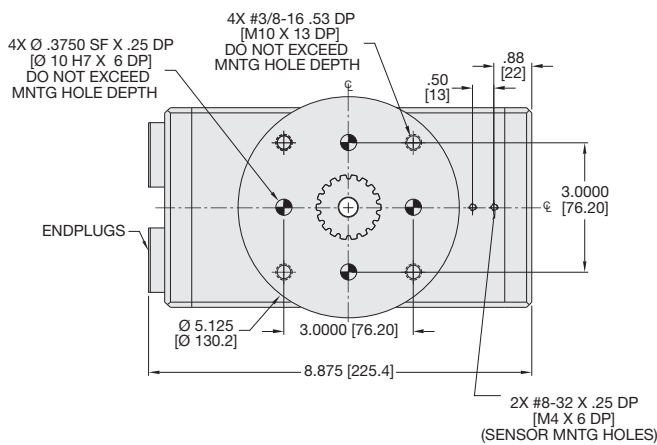
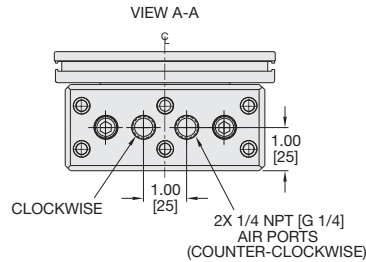
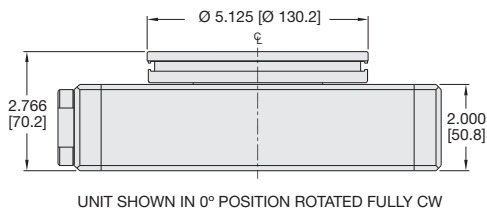
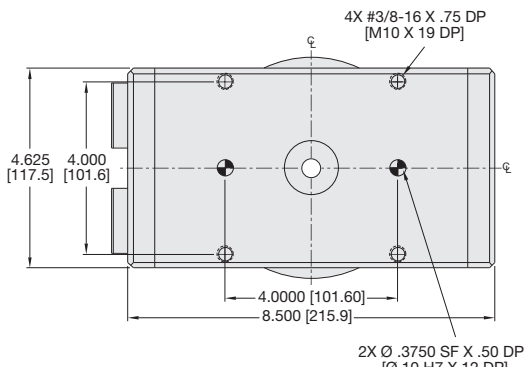
See Page **3.52**

ROTARY ACTUATORS RR-56M FLANGE OUTPUT SERIES BASE UNIT



RR SERIES

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Specifications

	RR-56	RR-56M
Maximum Payload†	30 lbs.	13.6 Kg
Maximum Payload Inertia†	.2549 in.-lbs.-sec ²	.02880 N-m-sec ²
Maximum Rotation	180°	180°
Maximum Torque Mid-Stroke @ 100 PSI	311 in.-lbs.	35 N-m
Maximum Torque End of Stroke @ 100 PSI	155 in.-lbs.	17 N-m
Weight of Base Unit	11.6 lbs.	5.3 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø (2X)	1.625 in.	41.27 mm
Displacement	9.77 in ³	160.1 cm ³
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton Seals	-20°~300° F	-30°~150° C
Actuation Time (180° @ 80PSI/5.5 Bar)	0.48 sec.	0.48 sec.
Actuation Time (90° @ 80PSI/5.5 Bar)	0.40 sec.	0.40 sec.
End Stop Repeatability	±0.02°	±0.02°
End Stop Adjustability	30°	30°
Over-Travel (each direction)	4°	4°
Valve required to actuate		4-way, 2-position

† Max. payload based on -A shock option.

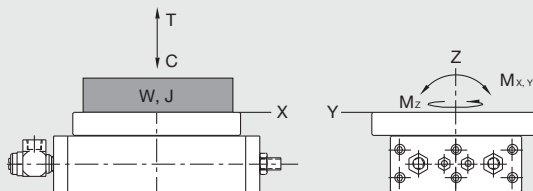
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads	Imperial in.	Metric [mm]
Course Pitch	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Loading Information

How to Order: (Order Accessories separately from Basic Model)

RR-56 See Next Page

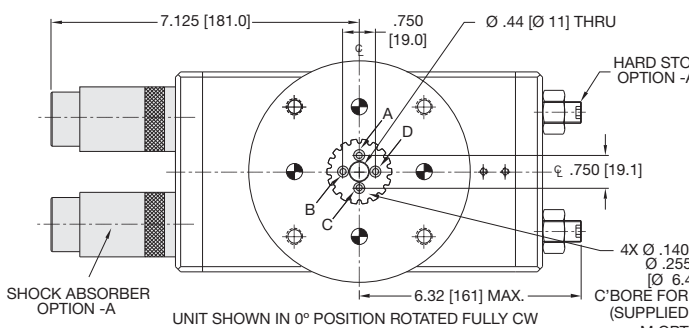
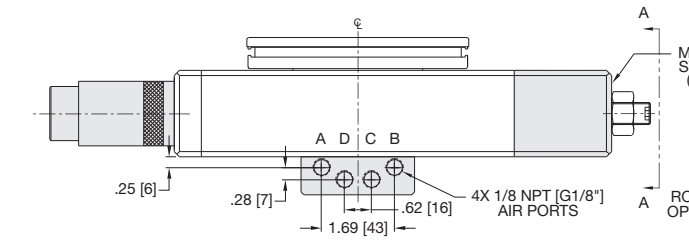
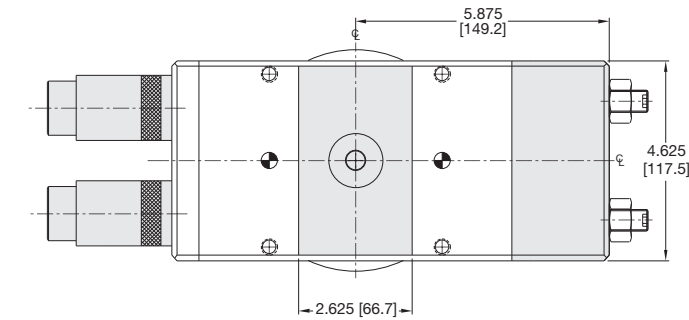


Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension T	800 lbs	3559 N	160 lbs	712 N
Maximum Compression C	2000 lbs	8896 N	400 lbs	1779 N
Maximum Moment M_x	1000 in.-lbs.	113 Nm	200 in.-lbs.	23 Nm
Maximum Moment M_y	1000 in.-lbs.	113 Nm	200 in.-lbs.	23 Nm
Maximum Payload W †			30 lbs.	13.64 Kg
Maximum Inertia J (with Shock Absorbers)†			0.2549 in-lb-sec ²	.0288 N-m-sec ²

† Max. payload based on -A shock option.

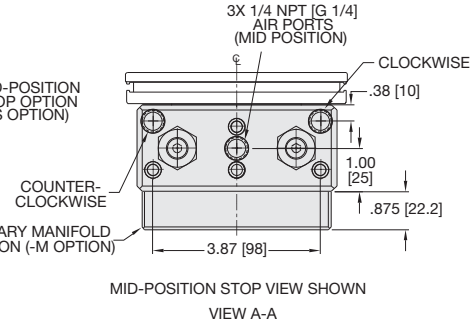


RR-56M ROTARY ACTUATOR OPTIONS -S, -M, OPTIONAL MID-STOP, ROTARY MANIFOLD



Specifications

	RR-56	RR-56M
Weight (base unit)	11.6 lbs.	5.3 Kg
Weight Adder for Mid-Position Stop	1.8 lbs.	0.82Kg
Weight Adder for Rotary Manifold	1.2 lbs.	0.54 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø of Mid-Position Stop 2X	1.674 in.	42.51 mm
Displacement of Mid-Position Stop	5.502 in ³	90.16 cm ³
Mid-Stop Repeatability	±.5°	±.5°
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton Seals	-20°~300° F	-30°~150° C
Valve required to actuate Mid-Stop		3-way, 2-position



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL METRIC MID-STOP ROTARY MANIFOLD

RR-56 **M** - **S** - **A** - **M** - **V**

ROTATION (See below) SHOCKS/STOPS VITON SEALS

DEGREE OF ROTATION 45°, 90°, 135° or 180°
(consult factory for intermediate degrees of rotation)

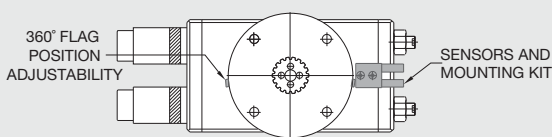
SENSOR ACCESSORIES

	MODEL CODE	ORDER#	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)		OSMK-075	1
Magneto Resistive Sensor Mounting Kit (Mounts 2 Sensors)		OSMK-069	1
NPN Inductive Sensor with Quick Disconnect*		OISN-011	1 or 2
PNP Inductive Sensor with Quick Disconnect*		OISP-011	1 or 2
NPN Magneto Resistive Sensor with Quick Disconnect*		OHSN-017	1 or 2
PNP Magneto Resistive Sensor with Quick Disconnect*		OHSP-017	1 or 2
Quick Disconnect 2M Cable Length*		CABL-010	1 or 2
Quick Disconnect 5M Cable Length*		CABL-013	1 or 2

PNEUMATIC ACCESSORIES

1/4 NPT Flow Controls (Imperial Units Only)		VLVF-009	2
G1/4 BSPP Flow Controls (Metric Units Only)		VLVF-010	2
Standard Base Unit Seal Repair Kit		SLKT-124	1
Viton Base Unit Seal Repair Kit	-V	SLKT-124V	1
Standard Manifold Seal Repair Kit	-M	SLKT-126	1
Viton Manifold Seal Repair Kit	-M-V	SLKT-126V	1
Standard Mid-Stop Seal Repair Kit	-S	SLKT-127	1
Viton Mid-Stop Seal Repair Kit	-S-V	SLKT-127V	1
Standard Shock Seal Repair Kit	-A	SLKT-125	1
Viton Shock Seal Repair Kit	-A-V	SLKT-125V	1

*Sensor and cable sold separately.

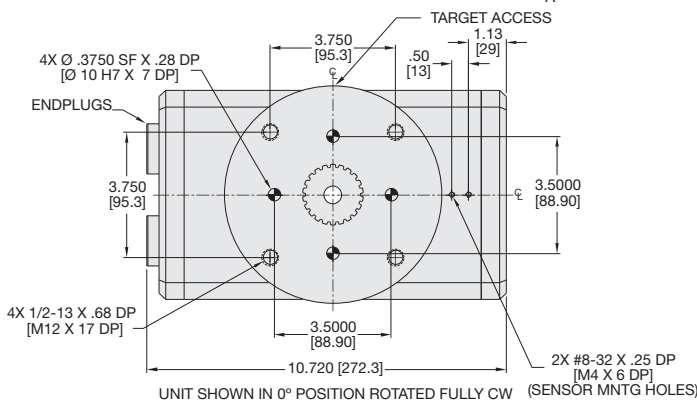
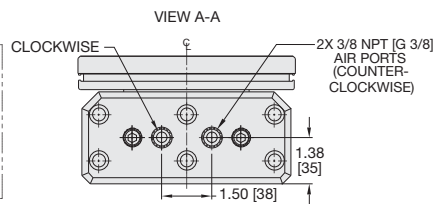
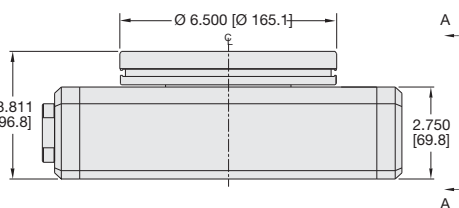
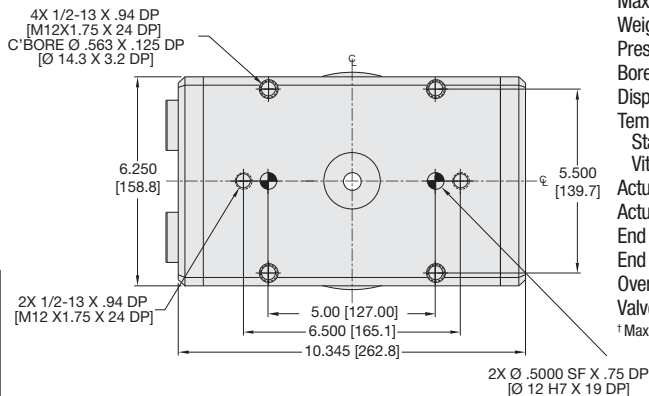


ROTARY ACTUATORS RR-66M FLANGE OUTPUT SERIES BASE UNIT



RR SERIES

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Specifications	RR-66	RR-66M
Maximum Payload†	75 lbs.	34 Kg
Maximum Payload Inertia†	1.0251 in.-lbs.-sec ²	.11584 N-m-sec ²
Maximum Rotation	180°	180°
Maximum Torque Mid-Position @ 100 PSI	728 in.-lbs.	82 N-m
Maximum Torque End of Stroke @ 100 PSI	364 in.-lbs.	41 N-m
Weight of Base Unit	26 lbs.	11.8 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø (2X)	2.250 in.	57.15 mm
Displacement	22.8 in ³	375 cm ³
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton Seals	-20°~300° F	-30°~150° C
Actuation Time (180° @ 80PSI/5.5 Bar)	0.70 sec.	0.70 sec.
Actuation Time (90° @ 80PSI/5.5 Bar)	0.50 sec.	0.50 sec.
End Stop Repeatability	±0.02°	±0.02°
End Stop Adjustability	20°	20°
Over-Travel (each direction)	4°	4°
Valve required to actuate		4-way, 2-position

† Max. payload based on -A shock option.

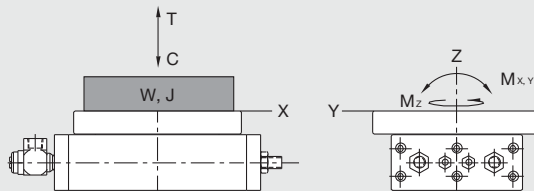
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

Loading Information

How to Order: (Order Accessories separately from Basic Model)

RR-66 See Next Page

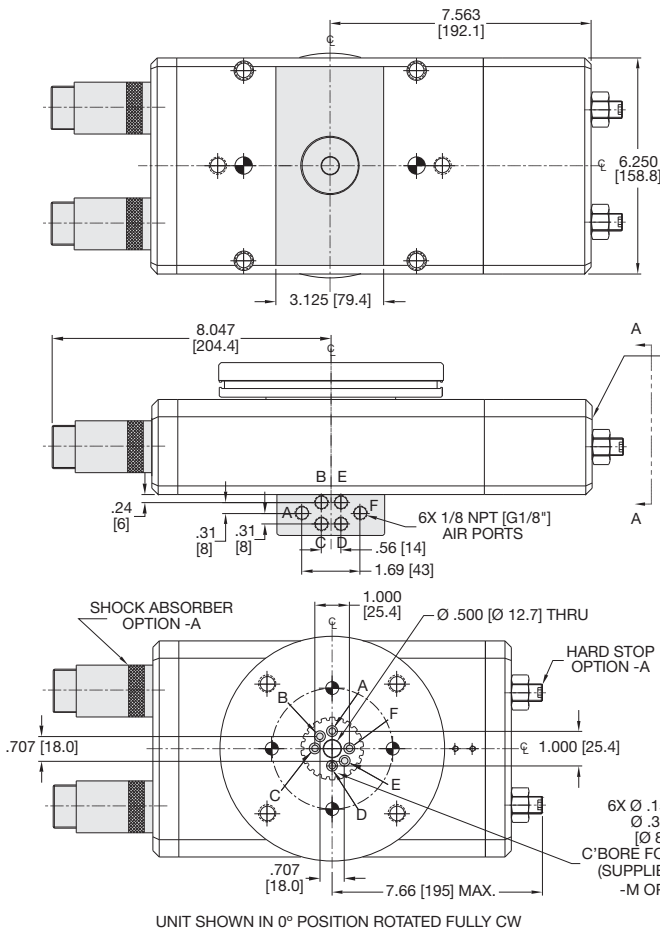


Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension T	1000 lbs	4448 N	200 lbs	890 N
Maximum Compression C	3500 lbs	15569 N	700 lbs	3114 N
Maximum Moment M_x	2000 in.-lbs.	226 Nm	400 in.-lbs.	45 Nm
Maximum Moment M_y	2000 in.-lbs.	226 Nm	400 in.-lbs.	45 Nm
Maximum Payload W †			75 lbs.	34 Kg
Maximum Inertia J (with Shock Absorbers)†			1.025 in-lb-sec ²	.1158 N-m-sec ²

† Max. payload based on -A shock option.

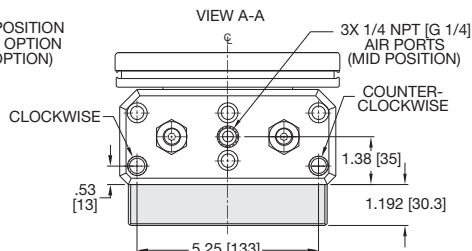


RR-66M ROTARY ACTUATOR OPTIONS -S, -M, OPTIONAL MID-STOP, ROTARY MANIFOLD



Specifications

	RR-66	RR-66M
Weight (base unit)	26 lbs.	11.8 Kg
Weight Adder for Mid-Position Stop	1.80 lbs.	0.82 Kg
Weight Adder for Rotary Manifold	0.80 lbs.	0.36 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø of Mid-Position Stop 2X	2.375 in.	60.32 mm
Displacement of Mid-Position Stop	19.643 in ³	321.89 cm ³
Mid-Stop Repeatability	±.5°	±.5°
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton Seals	-20°~300° F	-30°~150° C
Valve required to actuate Mid-Stop	3-way, 2-position	



MID-POSITION STOP VIEW SHOWN

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	Imperial in. 0.00 ± .01 0.000 ± .005 0.0000 ± .0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL METRIC MID-STOP ROTARY MANIFOLD

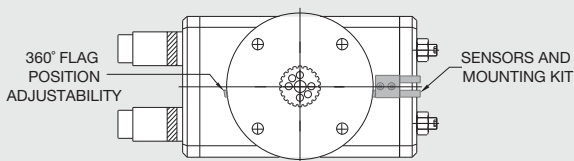
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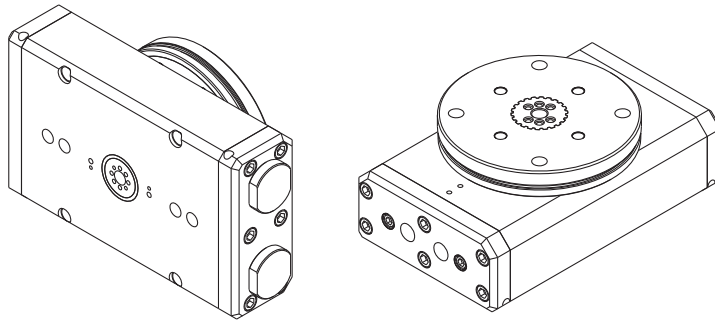
ROTATION (See below) SHOCKS/STOPS VITON SEALS

DEGREE OF ROTATION 45°, 90°, 135° or 180°
(consult factory for intermediate degrees of rotation)

SENSOR ACCESSORIES	MODEL CODE	ORDER#	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)		OSMK-075	1
Magneto Resistive Sensor Mounting Kit (Mounts 2 Sensors)		OSMK-069	1
NPN Inductive Sensor with Quick Disconnect*		OISN-011	1 or 2
PNP Inductive Sensor with Quick Disconnect*		OISP-011	1 or 2
NPN Magneto Resistive Sensor with Quick Disconnect*		OHSN-017	1 or 2
PNP Magneto Resistive Sensor with Quick Disconnect*		OHSP-017	1 or 2
Quick Disconnect 2M Cable Length*		CABL-010	1 or 2
Quick Disconnect 5M Cable Length*		CABL-013	1 or 2
PNEUMATIC ACCESSORIES			
3/8 NPT Flow Controls (Imperial Units Only)		VLVF-011	2
G3/8 BSPP Flow Controls (Metric Units Only)		VLVF-012	2
Standard Base Unit Seal Repair Kit		SLKT-128	1
Viton Base Unit Seal Repair Kit	-V	SLKT-128V	1
Standard Manifold Seal Repair Kit	-M	SLKT-130	1
Viton Manifold Seal Repair Kit	-M-V	SLKT-130V	1
Standard Mid-Stop Seal Repair Kit	-S	SLKT-131	1
Viton Mid-Stop Seal Repair Kit	-S-V	SLKT-131V	1
Standard with Shocks Seal Repair Kit	-A	SLKT-129	1
Viton with Shocks Seal Repair Kit	-A-V	SLKT-129V	1

*Sensor and cable sold separately.





Item	Qty	Name
01	1	Body, Main
02	1	Flange
03	1	Pinion
04	2	Rack, Piston
05	1	Ring, Inner Bearing
06	1	Ring, Outer Bearing
07	1	End Plate
08	1	Ported End Plate
10	1	Washer, Thrust
11	2	Bearing, Thrust
13	1	Bearing, Needle
14	1	Bearing, Needle
16	1	Cap

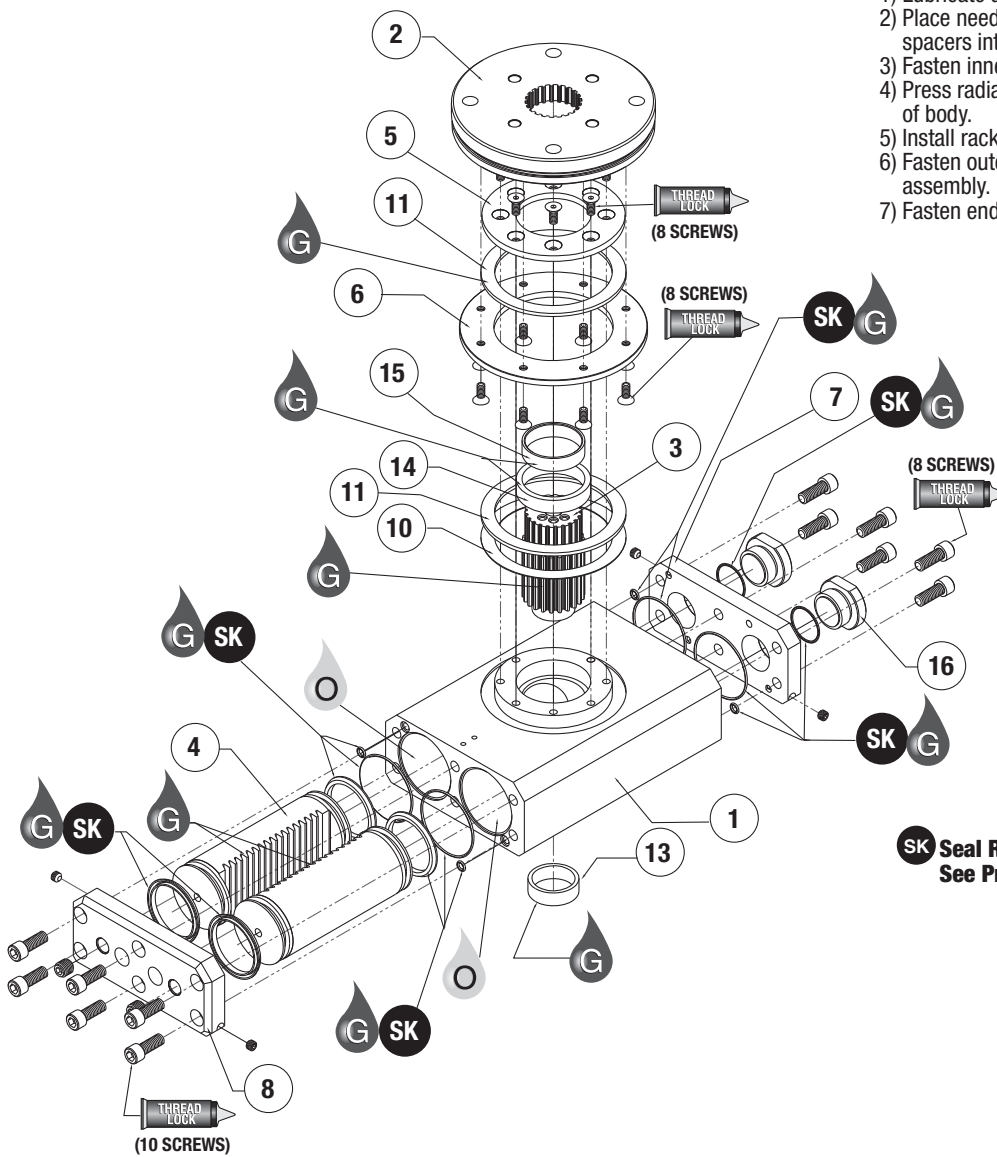
RR-56 & 66
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MAINTENANCE

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NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

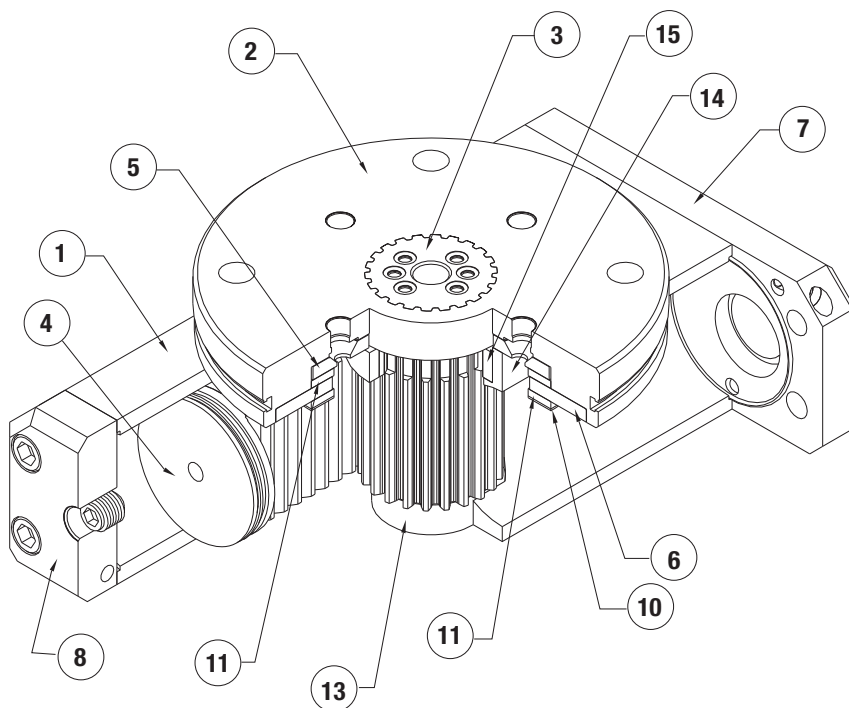
Assembly Procedure

- 1) Lubricate and install seals
- 2) Place needle bearings, outer ring and spacers into body
- 3) Fasten inner ring to body..
- 4) Press radial bearing into underside of body.
- 5) Install racks into body.
- 6) Fasten outer ring to turntable/pinion assembly.
- 7) Fasten end plates and plugs.



**SK Seal Repair Kit Order #'s
See Product Data Sheets**

SK Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection
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Item	Qty	Name
01	1	Body, Main
02	1	Flange
03	1	Pinion
04	2	Rack, Piston
05	1	Ring, Inner Bearing
06	1	Ring, Outer Bearing
07	1	End Plate
08	1	Ported End Plate
10	1	Washer, Thrust
11	2	Bearing, Thrust
13	1	Bearing, Needle
14	1	Bearing, Needle
16	1	Cap

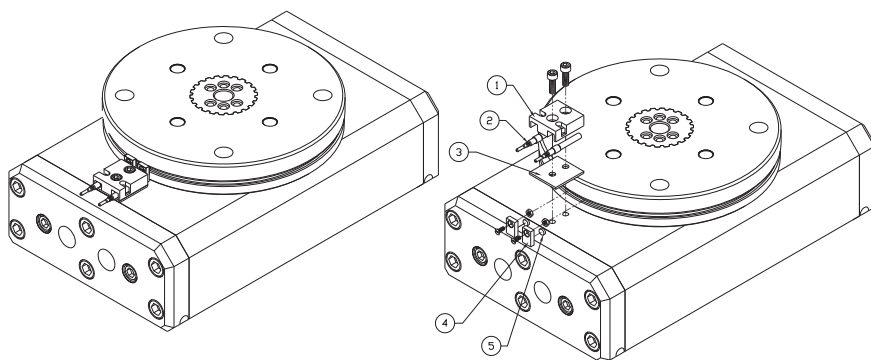
NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

RR-56 & 66
SERIES
MAINTENANCE

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ACCESSORY INSTALLATION & ADJUSTMENT INSTRUCTIONS

- 1) Install sensors and brackets as shown,
- 2) Install targets so when a turntable is at each end of stroke, a target is aligned with a sensor



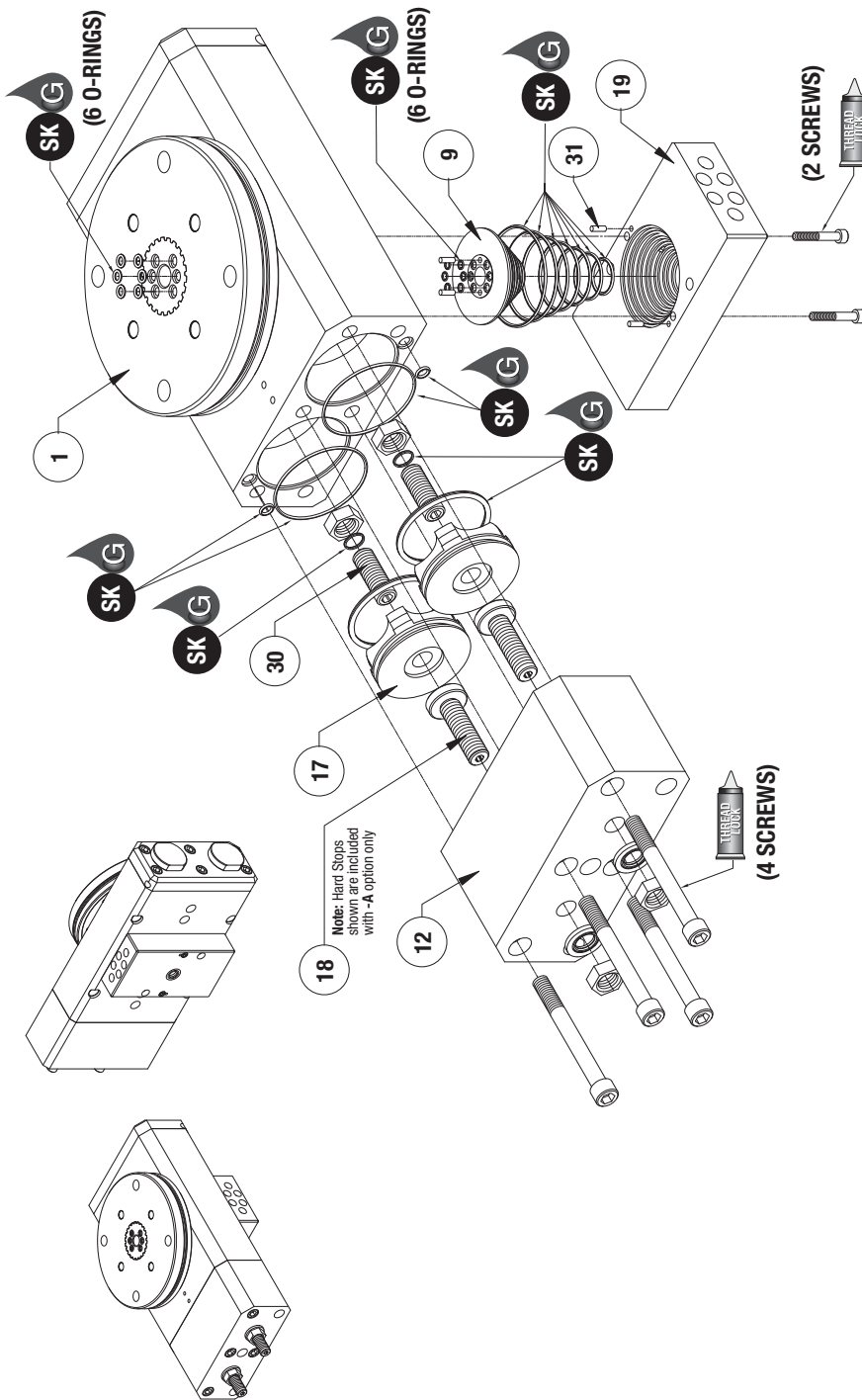
<p>SK Seal Kit Items</p>	<p>THREAD LOCKER Thread Locker</p>	<p>KRYTOX Krytox™ Lubricant</p>	<p>O Lightweight Machine Oil</p>	<p>G Teflon™ Based Grease</p>	<p>GLUE Super Bonder</p>	<p>Third Angle Projection</p>
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RR-56 & 66 OPTIONS EXPLODED VIEW



RR-56 & 66
OPTIONS
MAINTENANCE

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Item Qty Name

RR-56 & 66-S (Midstop)		
12	1	Body, Mid-Stop
17	2	Piston, Mid-Stop
30	2	Mid-Stop Adjustment Screws

RR-56-M (Rotary Manifold)		
09	1	Manifold, Rotary
19	1	Manifold
31	4	Dowel Pin

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

Manifold Option Assembly Procedure

- 1) Lubricate and install 12 small o-rings. (6 in the pinion, 6 in the rotary manifold.
- 2) Install 7 O-rings on the rotary manifold.
- 3) Press 1/8" dia. dowel pin into manifold.
- 4) Install rotary manifold in manifold block.
- 5) Attach manifold block to rotary actuator body.

Mid-Stop Option Assembly Procedure

- 1) Lubricate and install o-rings.
- 2) Install mid-stop pistons, adjustment screws, seal washers, and hex nuts in rotary actuator body.
- 3) Attach mid-stop body to rotary actuator body.
- 4) Install flow controls.

Mid-Stop Adjustment Procedure

- 1) Remove mid-stop body from actuator base.
- 2) Remove the two mid-stop pistons from the mid-stop body and insert them into their respective cylinder bores in the actuator base.
- 3) Back off both mid-stop adjustment screws (#30) while pushing the mid-stop pistons firmly into the cylinder bores. the face of the pistons should seat against the actuator base. If not, then continue to back out the stop screws.
- 4) Turn the turntable to the desired position and advance the mid-stop adjustment screws until both screws touch the main piston faces.
- 5) Re-attach the two mid-stop pistons to the mid-stop body and fasten mid-stop body back onto actuator base.

**SK Seal Repair Kit Order #'s
See Product Data Sheets**

SK

Seal Kit
Items



Thread
Locker



Krytox™
Lubricant



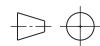
Lightweight
Machine Oil



Teflon™ Based
Grease



Super
Bonder



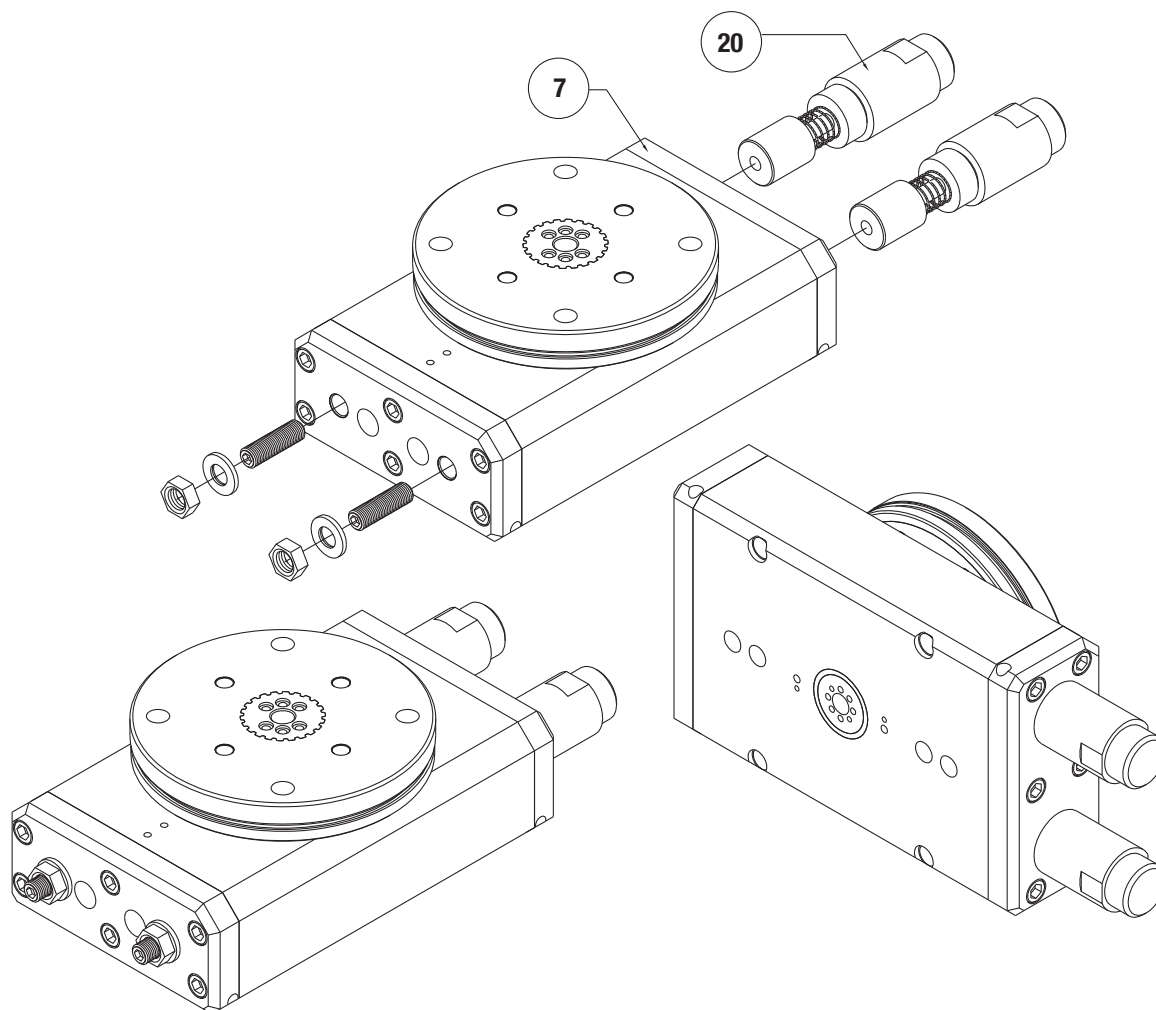
Third Angle
Projection



RR-56 & 66 OPTIONS ASSEMBLED VIEW

Item	Qty	Name
7	1	Plate, End
20	2	Shock Absorber

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



RR-56 & 66
OPTIONS
MAINTENANCE
3.51



Seal Kit
Items



Thread
Locker



Krytox™
Lubricant



Lightweight
Machine Oil



Teflon™ Based
Grease



Super
Bond



Third Angle
Projection

ROTARY ACTUATORS RR-76M FLANGE OUTPUT SERIES BASE UNIT



Note: Shock Absorbers "Option -A" are recommended for most applications. All specifications provided are with this option

Specifications	RR-76	RR-76M
Maximum Payload†	200 lbs.	91 Kg
Maximum Payload Inertia†	4.95 in.-lb.-sec ²	0.5596 N-m-sec ²
Maximum Rotation	180°	180°
Max. Torque Mid-Position @ 100 PSI	1900 in.-lbs.	215 N-m
Max. Torque End of Stroke @ 100 PSI	950 in.-lbs.	107 N-m
Weight of Base Unit	53 lbs.	24 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø (2X)	3.250 in.	82.55 mm
Displacement	62.6 in ³	1026 cm ³
Temperature Range - Viton® Seals	20°~300° F	-30°~150° C
Shock Absorber Temperature Max.	160° F	71° C
Actuation Time (180° @ 80PSI/5.5 Bar)	1.4 sec.	1.4 sec.
Actuation Time (90° @ 80PSI/5.5 Bar)	0.8 sec.	0.8 sec.
End Stop Repeatability	±0.02°	±0.02°
End Stop Adjustability*	20°	20°
Over-Travel (each direction)	4°	4°
Valve required to actuate	4-way, 2-position	

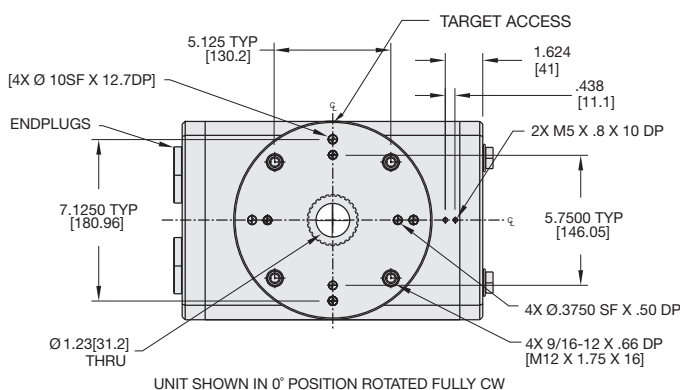
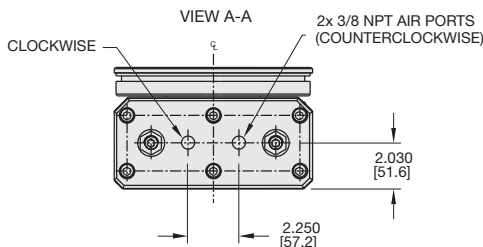
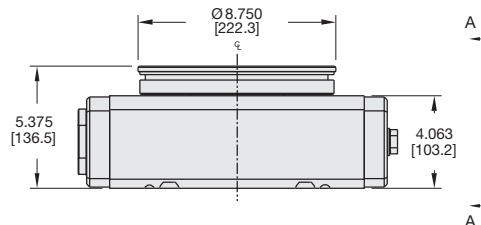
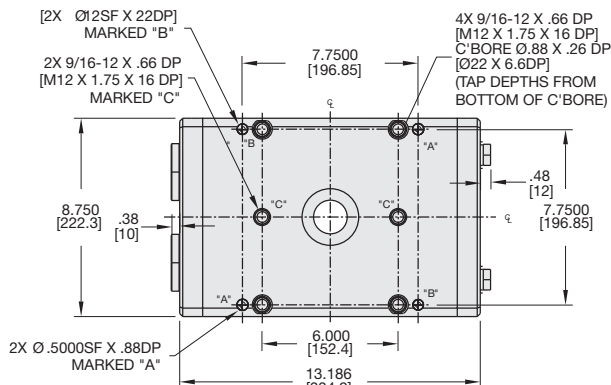
*Any adjustment of the End Stop Adjustment Screw must be accompanied by an equal adjustment of the Shock Absorbers to prevent bottoming of the pistons against the Shock Absorbers.

†Max. payload based on -A shock option.

Hydraulic Specifications	RR-76	RR-76M
Actuation Time (180° @ 80PSI/5.5 Bar)	4.8 sec.	4.8 sec.
Actuation Time (90° @ 80PSI/5.5 Bar)	2.4 sec.	2.4 sec.
Mid Stop Actuation Time (80PSI/5.5 Bar)	4.1 sec.	4.1 sec.

RR SERIES

3.52



UNIT SHOWN IN 0° POSITION ROTATED FULLY CW

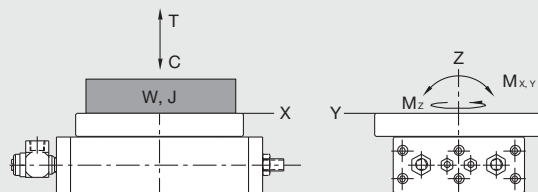
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

Loading Information

How to Order: (Order Accessories separately from Basic Model)

RR-76 See Next Page

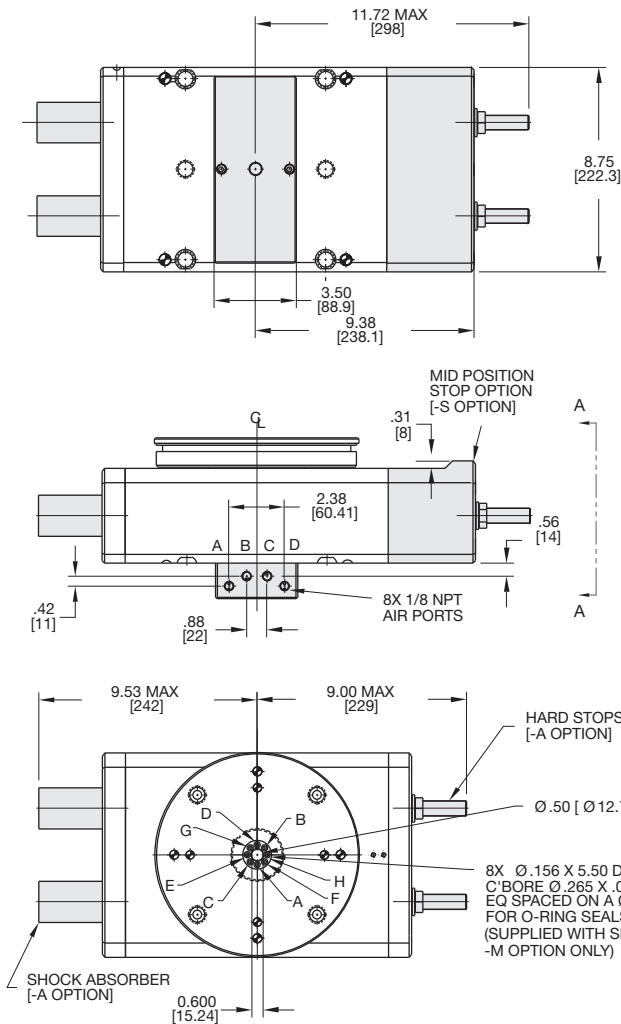


Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension T	2000 lbs	8896 N	1000 lbs	4448 N
Maximum Compression C	4500 lbs	20017 N	2000 lbs	8896 N
Maximum Moment M_x	4000 in.-lbs.	452 Nm	2000 in.-lbs.	226 Nm
Maximum Moment M_y	4000 in.-lbs.	452 Nm	2000 in.-lbs.	226 Nm
Maximum Payload W †			200 lbs.	91 Kg
Maximum Inertia J †			4.952 in.-lb.-sec ²	0.5596 N-m-sec ²

†Max. payload based on -A shock option.

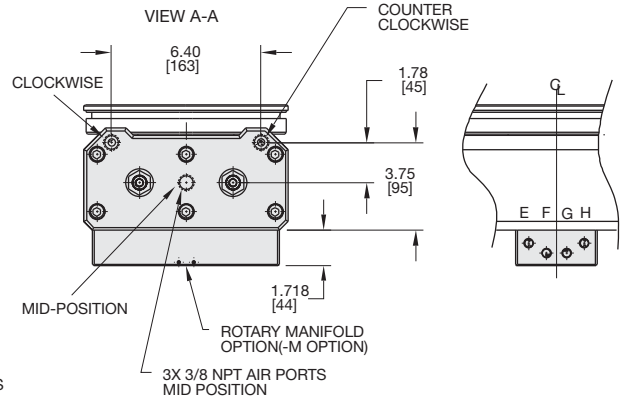


RR-76M ROTARY ACTUATOR OPTIONS -S, -A, -M, -H OPTIONAL MID-STOP, ROTARY MANIFOLD



Specifications

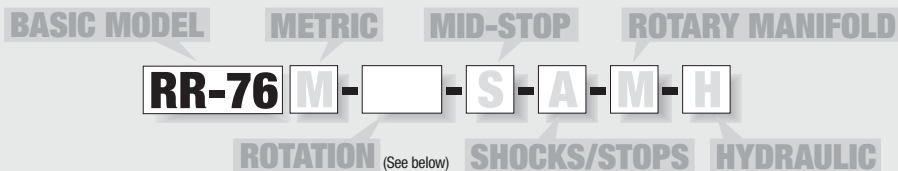
	RR-76	RR-76M
Weight (Base Unit)	53 lbs.	24 Kg
Weight Adder for Mid-Position Stop	8.3 lbs.	3.8 Kg
Weight Adder for Rotary Manifold	4.2 lbs.	2.0 Kg
Mid-Stop Torque @ 100psi	890 in-lb	100.5 N-m
Pressure Range	40-100 psi	3-7 bar
Bore Ø of Mid-Position Stop 2X	3.375 in.	85.7 mm
Displacement of Mid-Position Stop	54 in ³	885 cm ³
Temperature Range - Viton® Seals	-20°~300° F	-30°~150° C
Mid-Stop Repeatability	±0.5°	±0.5°
Valve required to actuate Mid Stop	3-way, 2-position	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

How to Order: (Order Accessories separately from Basic Model)



DEGREE OF ROTATION 45°, 90°, 135° or 180°
(consult factory for intermediate degrees of rotation)

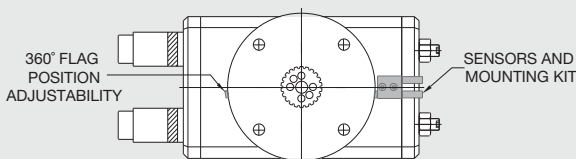
SENSOR ACCESSORIES

	MODEL CODE	ORDER#	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)		OSMK-096	1
NPN Inductive Sensor with Quick Disconnect*		OISN-017	1 or 2
PNP Inductive Sensor with Quick Disconnect*		OISP-017	1 or 2
Quick Disconnect 2M Cable Length*		CABL-014	1 or 2
Quick Disconnect 5M Cable Length*		CABL-018	1 or 2

PNEUMATIC ACCESSORIES

3/8 NPT Flow Controls (Imperial Units Only)		VLVF-011	2
G3/8 BSPP Flow Controls (Metric Units Only)		VLVF-012	2
Adapter 1/8 NPT to G 1/8		PLFT-028	1
Adapter 3/8 NPT to G 3/8		PLFT-029	1
Standard Base Unit Seal Repair Kit		SLKT-167V	1
Standard Manifold Seal Repair Kit	-M	SLKT-169V	1
Standard Mid-Stop Seal Repair Kit	-S	SLKT-168V	1
Standard with Shocks Seal Repair Kit	-A	SLKT-179	1
Hydraulic Seal Repair Kit (Base)	-H	SLKT-177H	1
Hydraulic Seal Repair Kit (Mid Stop)	-S	SLKT-178H	1

*Sensor and cable sold separately.

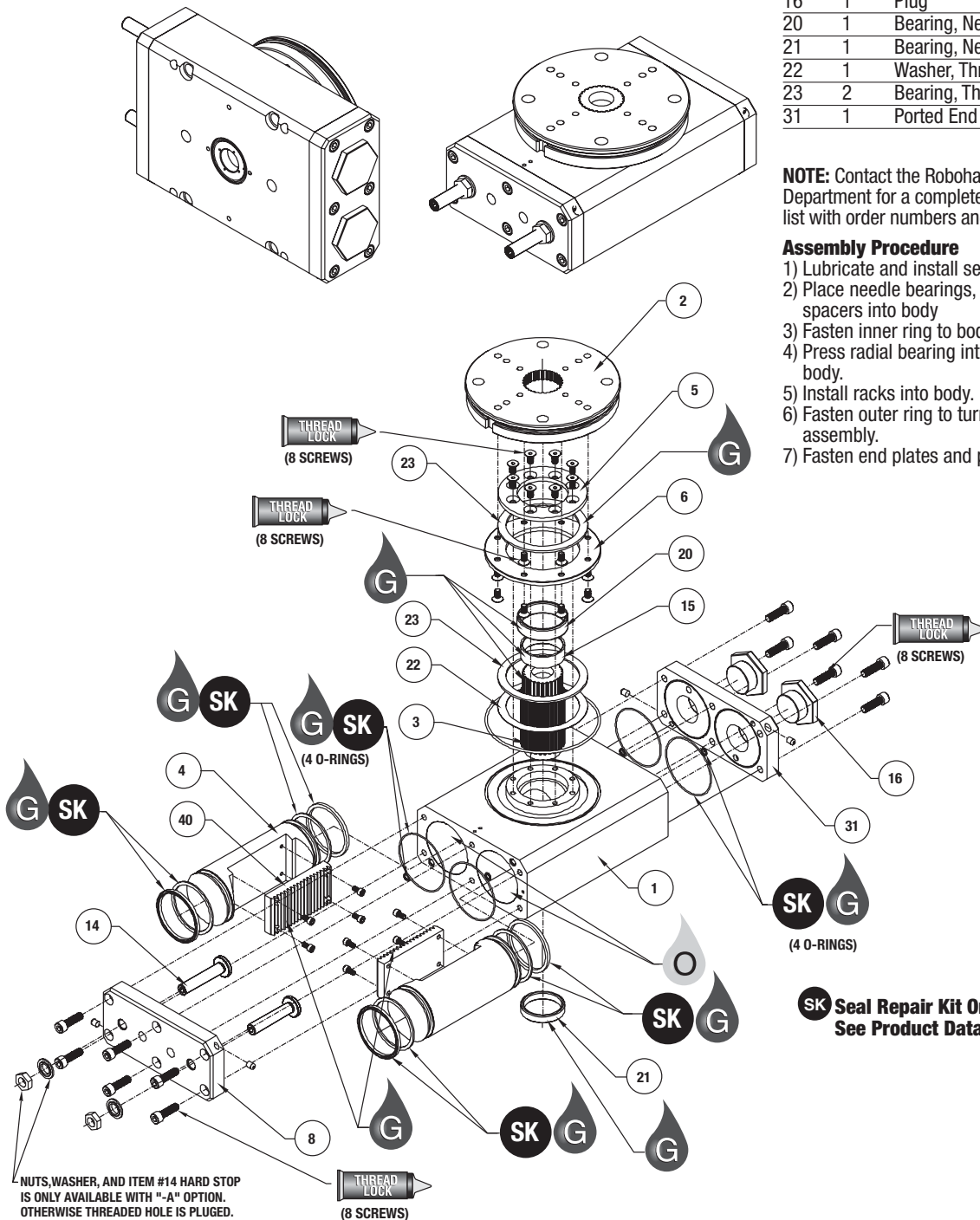


Item	Qty	Name
01	1	Body, Main
02	1	Flange
03	1	Pinion
04	2	Rack, Piston
05	1	Ring, Inner Bearing
06	1	Ring, Outer Bearing
08	1	End Plate
16	1	Plug
20	1	Bearing, Needle
21	1	Bearing, Needle
22	1	Washer, Thrust
23	2	Bearing, Thrust
31	1	Ported End Plate

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

Assembly Procedure

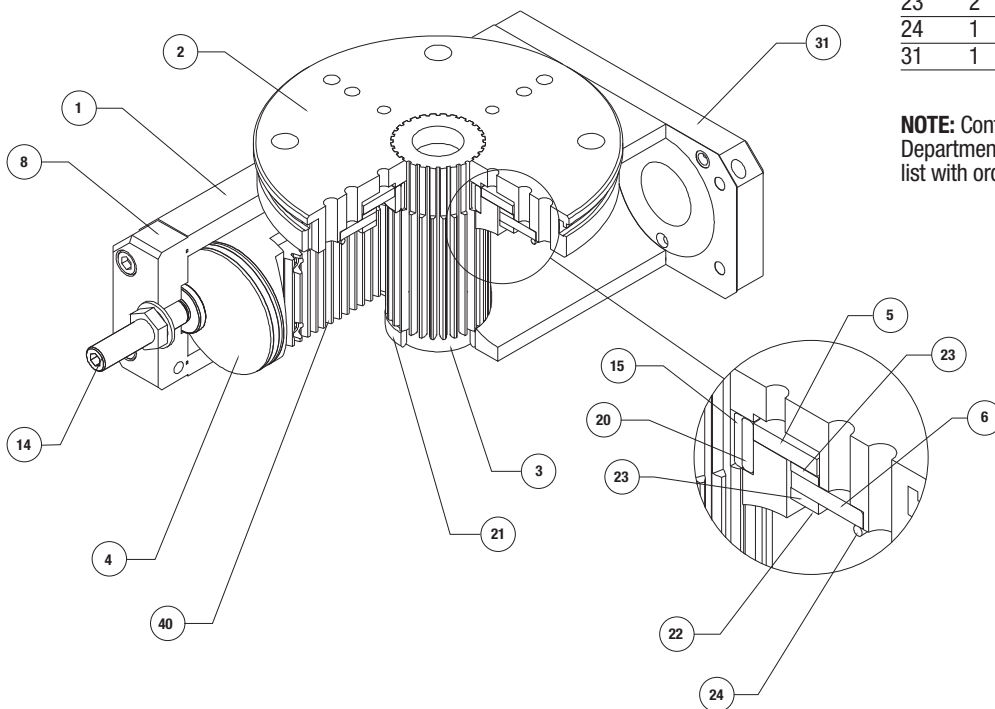
- 1) Lubricate and install seals
- 2) Place needle bearings, outer ring and spacers into body
- 3) Fasten inner ring to body..
- 4) Press radial bearing into underside of body.
- 5) Install racks into body.
- 6) Fasten outer ring to turntable/pinion assembly.
- 7) Fasten end plates and plugs.



**SK Seal Repair Kit Order #'s
See Product Data Sheets**

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection

Item	Qty	Name
01	1	Body, Main
02	1	Flange
03	1	Pinion
04	2	Rack, Piston
05	1	Ring, Inner Bearing
06	1	Ring, Outer Bearing
07	1	End Plate
16	1	Plug
20	1	Bearing, Needle
21	1	Bearing, Needle
22	1	Washer, Thrust
23	2	Bearing, Thrust
24	1	O-Ring
31	1	Ported End Plate

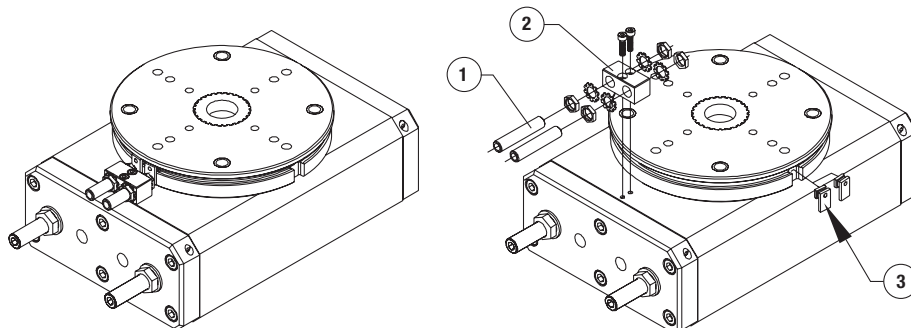


NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

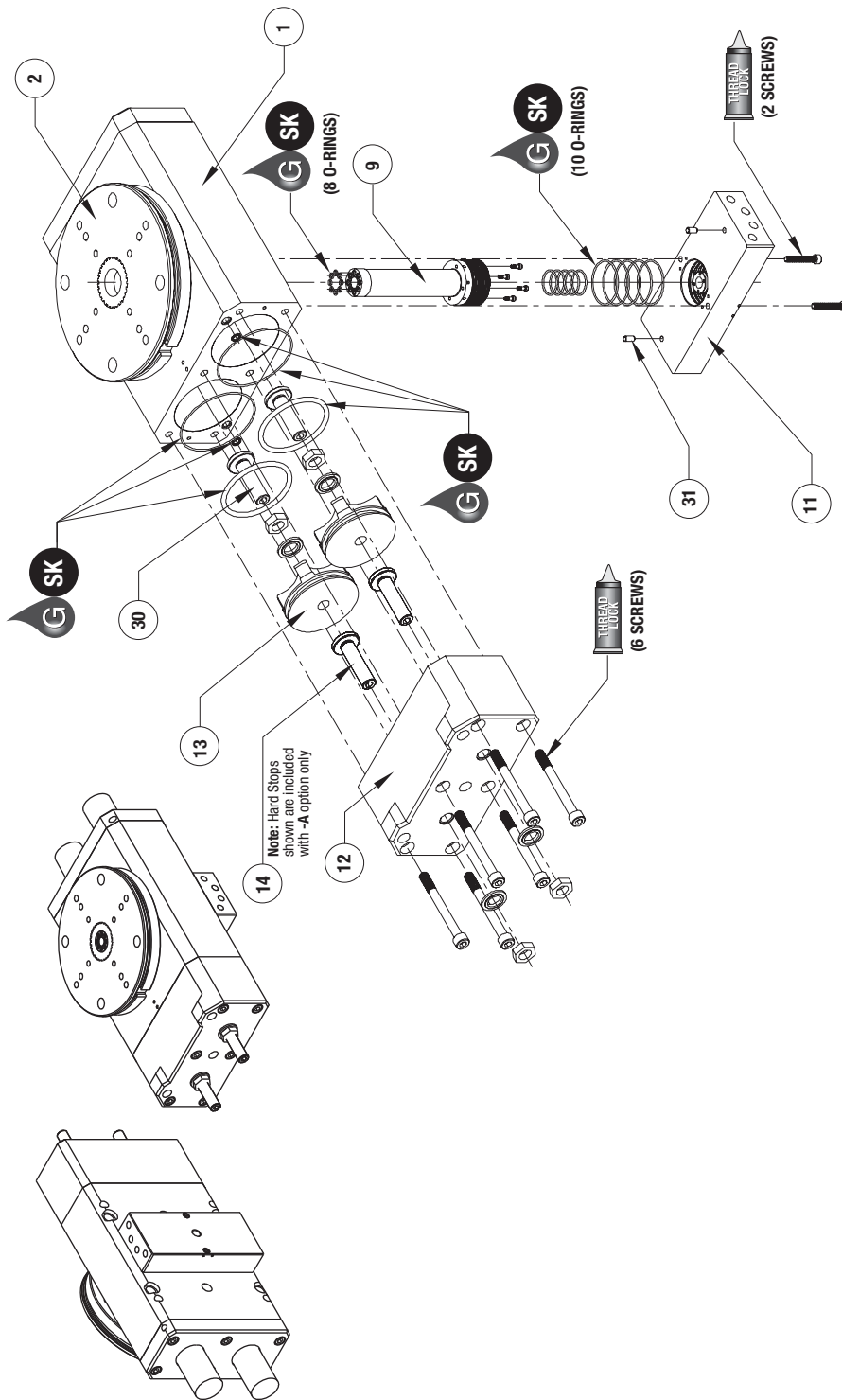
RR-76 SERIES MAINTENANCE 3.55

ACCESSORY INSTALLATION & ADJUSTMENT INSTRUCTIONS

- 1) Install sensors and brackets as shown,
- 2) Install targets so when a turntable is at each end of stroke, a target is aligned with a sensor



<p>SK Seal Kit Items</p>	<p>THREAD LOCKER Thread Locker</p>	<p>KRYTOX Lubricant</p>	<p>O Lightweight Machine Oil</p>	<p>G Teflon™ Based Grease</p>	<p>GLUE Super Bonder</p>	<p>Third Angle Projection</p>
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Item Qty Name

RR-76-S (Midstop)

12	1	Body, Mid-Stop
13	2	Piston, Mid-Stop
30	2	Mid-Stop Adjustment Screws

RR-76-M (Rotary Manifold)

09	1	Manifold, Rotary
11	1	Manifold
31	4	Dowel Pin

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**Manifold Option
Assembly Procedure**

- 1) Lubricate and install 10 small O-rings.
- 2) Press 1/8" dia. dowel pin into manifold.
- 3) Install rotary manifold into pinion with shoulder screws.
- 4) Attach manifold block to rotary actuator body.

**Mid-Stop Option
Assembly Procedure**

- 1) Lubricate and install o-rings.
- 2) Install mid-stop pistons, adjustment screws, seal washers, and hex nuts in rotary actuator body.
- 3) Attach mid-stop body to rotary actuator body.
- 4) Install flow controls.

Mid-Stop Adjustment Procedure

- 1) Remove mid-stop body from actuator base.
- 2) Remove the two mid-stop pistons from the mid-stop body and insert them into their respective cylinder bores in the actuator base.
- 3) Back off both mid-stop adjustment screws (#30) while pushing the mid-stop pistons firmly into the cylinder bores. the face of the pistons should seat against the actuator base. If not, then continue to back out the stop screws.
- 4) Turn the turntable to the desired position and advance the mid-stop adjustment screws until both screws touch the main piston faces.
- 5) Re-attach the two mid-stop pistons to the mid-stop body and fasten mid-stop body back onto actuator base.

**SK Seal Repair Kit Order #'s
See Product Data Sheets**

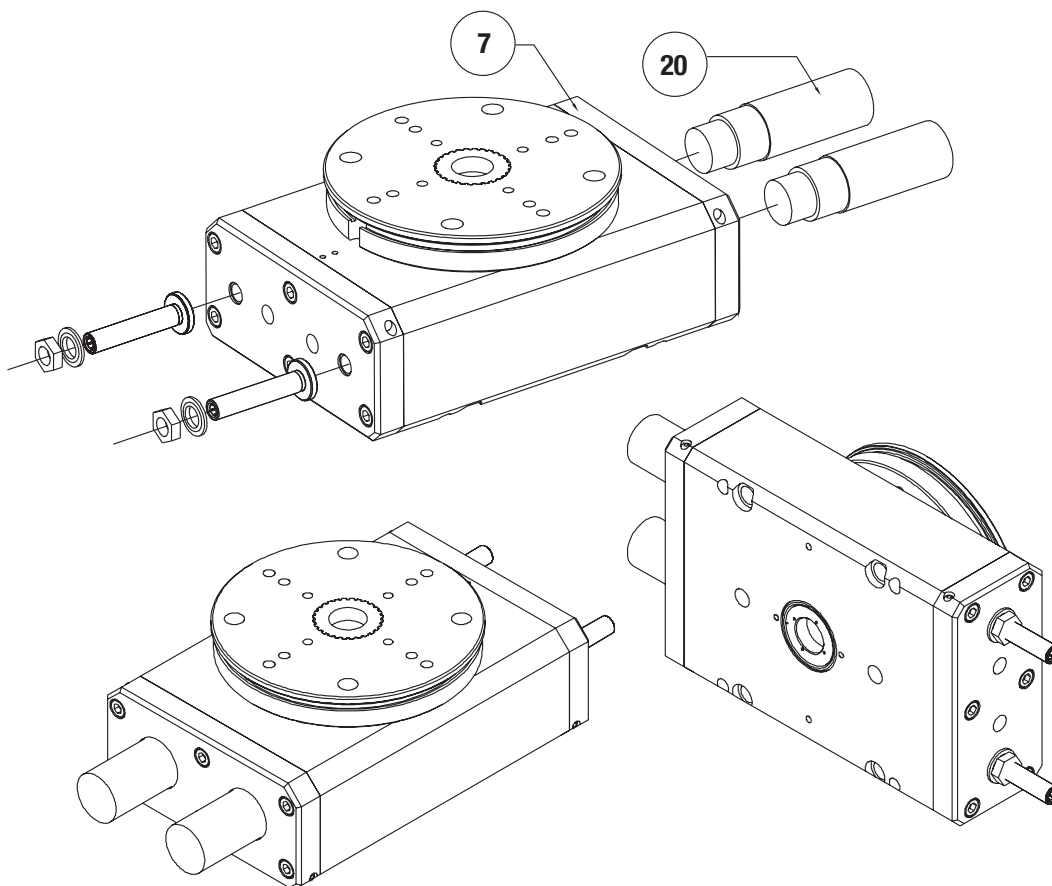
Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection
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RR-76 OPTIONS ASSEMBLED VIEW

Item	Qty	Name
7	1	Plate, End
20	2	Shock Absorber

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



RR-76 OPTIONS
MAINTENANCE
3.57

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