

ROTARY ACTUATORS

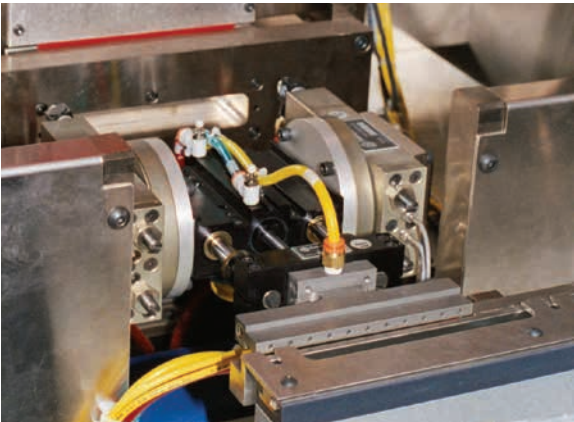
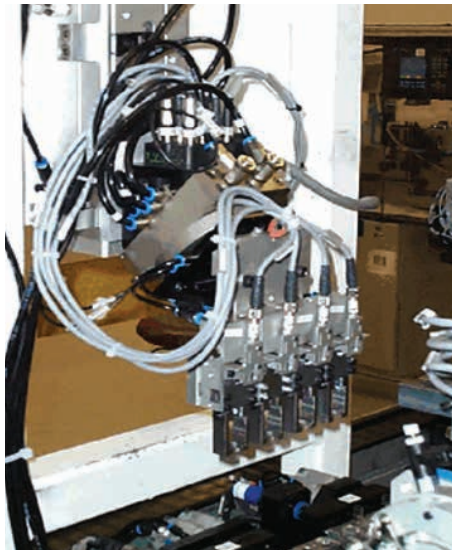
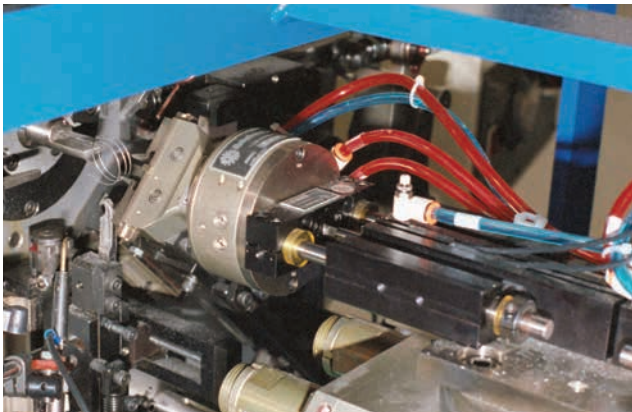
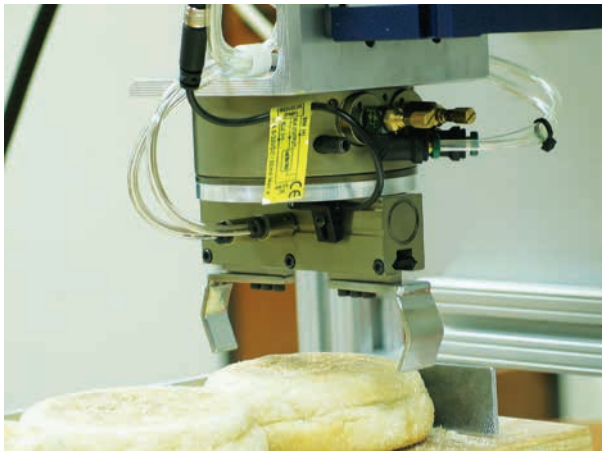
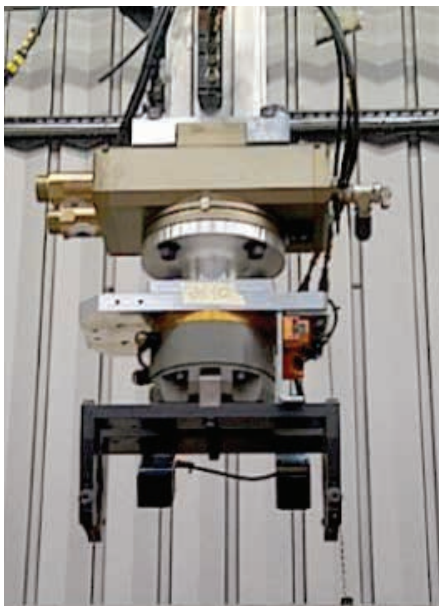
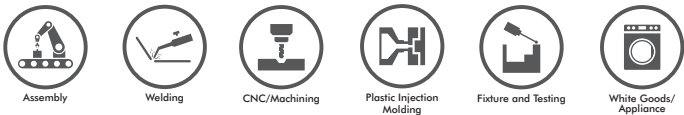
Rotary Actuators | Application Examples

DESTACO's RR Series of heavy-duty rotary actuators are compact models that are designed for large capacity, high torque applications in tight spaces – such as industrial and foundry projects. These models feature preloaded bearings for high repeatability rotary actuation, zero backlash with precision slip fit dowel pins, and mount the payload directly to the flange without additional support.

Markets

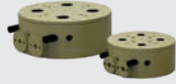
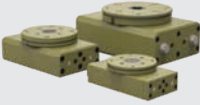


Applications



ROTARY ACTUATORS

Rotary Actuators | Product Overview

Model		Stroke Range	Payload Range	Operating Environment	Special Features	Page GR-ROT#
RR-18 & 28		0°-180°	0.45-1.3 [1-3]	IP66 with Purge and Seal option. Clean Room Class 100,000, ISO 8	Compact Size. Flange Payload Mount. Full Torque at End of Stroke.	3
RR-36 thru 66		0°-180°	3.6-34 [8-75]	IP55. Clean Room Class 100,000, ISO 9	Large Payload. Flange Payload Mount. Zero Backlash. Optional 4 port rotary manifold.	7

RR LIGHT-DUTY SERIES

Rotary Actuators | Features and Benefits | How To Order

Features:

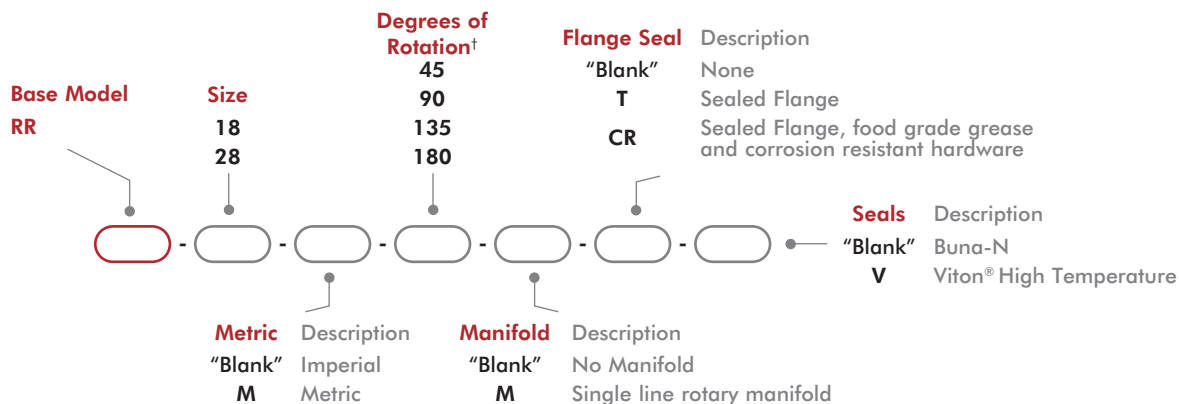
- Ultra-thin profile for tight space applications
- Preloaded bearings for high repeatability rotary actuation
- Zero backlash and slip fit dowel pins for precision applications
- Built-in adjustable hard-stops
- Optional manifold eliminates twisted airlines
- **CR**- Clean room option or for use in harsh environment applications

Applications:

- Precision rotary positioning
- Medical applications
- OEM machines



How To Order



†Consult factory for intermediate degrees of rotation.

Accessories

Sensor Accessories	Model Numbers	Part Number	Qty/Unit
Sensor Mounting Kit (mounts 2 sensors)	All Models	OSMK-024	1
NPN Inductive Sensor with Quick Disconnect*	All Models	OISN-014	1-2
PNP Inductive Sensor with Quick Disconnect*	All Models	OISP-014	1-2
Quick Disconnect 2 Meter Cable Length*	All Models	CABL-010	1-2
Quick Disconnect 5 Meter Cable Length*	All Models	CABL-013	1-2

Pneumatic Accessories	Model Numbers	Part Number	Qty/Unit
M3 Plumbing Fitting Push-In for 3mm OD Tube	All Models	PLFT-021	2
M3 Plumbing Fitting Barb for 2mm ID Tube	All Models	PLFT-022	2
#10-32 Flow Control (Imperial)	All Models	VLVF-007	2
M5 Flow Control	All Models	VLVF-008	2

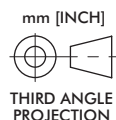
*Sensor and cable sold separately.

RR LIGHT-DUTY SERIES

Rotary Actuators | Technical Specifications

Specifications	Units	18	28
Maximum Payload	kg [lb]	0.45 [1.0]	1.36 [3.0]
Maximum Payload Inertia	Nm sec ² [in-lbs sec ²]	0.000181 [0.0016]	0.001255 [0.0111]
Maximum Rotation		180°	
Maximum Torque Mid-Stroke @ 100psi/7 bar	Nm [lbs-in]	0.7 [6.5]	2.5 [22]
Maximum Torque End Stroke @ 100psi/7 bar			
Pitch Diameter of Pinion	mm [in]	8.46 [0.333]	12.7 [0.50]
Weight	kg [lb]	0.22 [0.48]	0.65 [1.44]
Pressure Range	bar [psi]	2-7 [30-100]	
Ingress Protection Class (IP)		IP66	
Displacement (180°)	cm ³ [in ³]	3.37 [0.205]	11.4 [0.69]
Temperature Range (Buna-N seals)	°C [°F]	-35°~80° [-30°~180°]	
Temperature Range (Viton® seals)	°C [°F]	-30°~150° [-20°~300°]	
Actuation Time (180° @ 100psi/7 bar)	sec	0.30	0.35
Actuation Time (90° @ 100psi/7 bar)	sec	0.25	0.30
End Stop Repeatability		±0.02°	
End Stop Adjustability		23°	
Over Travel (each end)		4°	8°
Valve required to actuate		4-way, 2-position	

Rotary Actuators | Dimensions and Technical Specifications



Technical drawing of the RR-16 rotary manifold, showing front and side views with dimensions and labels.

Front View Labels:

- ROTATING FLANGE
- ROTARY MANIFOLD PORT (-M OPTION)
M3 X 3 DP [M3 X .12 DP]
BARBED FITTING SUPPLIED W/OPTION
- CW AIR PORT
- Ø57.1 [Ø2.250]
- 24.6 [.969]
- 2X M5 [#10-32] (CCW AIR PORT)

Side View Labels:

- ADJUSTABLE FLANGE STOPS (STANDARD)
- ADJUSTABLE STOP LOCKS
- 2X M4 X 9 DP [#6-32 X .38 DP]
- 6.4 [.250]
- 2X Ø4 H7 X 6 DP [Ø.1250 SF X .25 DP]
- M2 X M2 X 2 DP [.08 DP] PURGE OR SC AVENGE BOTTOM PORT (-T OPTION)
- M2 X M2 X 2 DP [.08 DP] ROTARY MANIFOLD BOTTOM PORT (-M OPTION)
- (CW ROTATION)
- 19.1 [.750]
- 0.5 [.020]
- 2X 9.5 [.375]
- 2X M2 X 2 DP [M2 X .08 DP] BOTTOM AIR PORTS (CCW ROTATION)
- 25.4 [1.000]
- 30 [1.19]
- 31 [1.23]
- 41.28 [1.6250]
- 50.8 [2.000]

PLEASE NOTE: THE ONLY FEATURES THAT ARE NOT DIRECTLY RETROFITABLE TO THE RR-16 IS THE SHALLOWER TAP DOWEL DEPTH ON THE TURN TABLE AND THE DIFFERENT SENSORS AND SENSOR MOUNTING KIT.

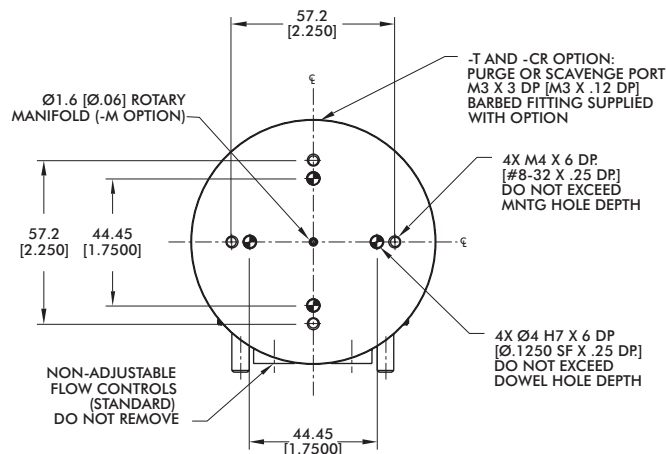
VIEW AA

Seal Repair Kits	Order #
Buna-N Seal Repair Kit	SLKT-173
Viton® Seal Repair Kit	SLKT-173V
Viton® Bottom Air Port Manifold Seal Kit	SLKT-174V

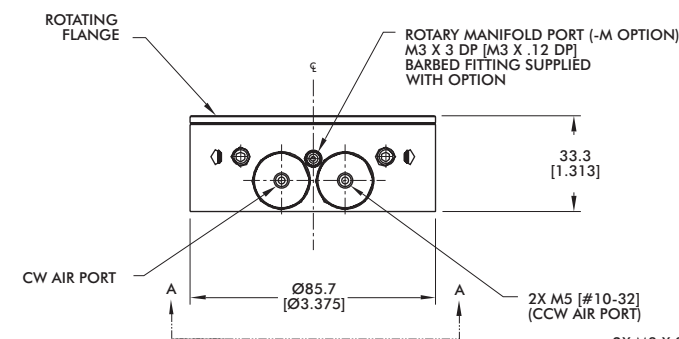
RR-18 Loading Information	Static
Maximum Tensile T	222 N [50 lbs]
Maximum Compressive C	1112 N [250 lbs]
Maximum Moment M_x	11 Nm [100 in-lbs]
Maximum Moment M_y	11 Nm [100 in-lbs]
Maximum Payload W	0.45 kg [1 lbs]
Maximum Inertia J	0.000181 N-m-sec ² [0.0016 in-lbs-sec ²]



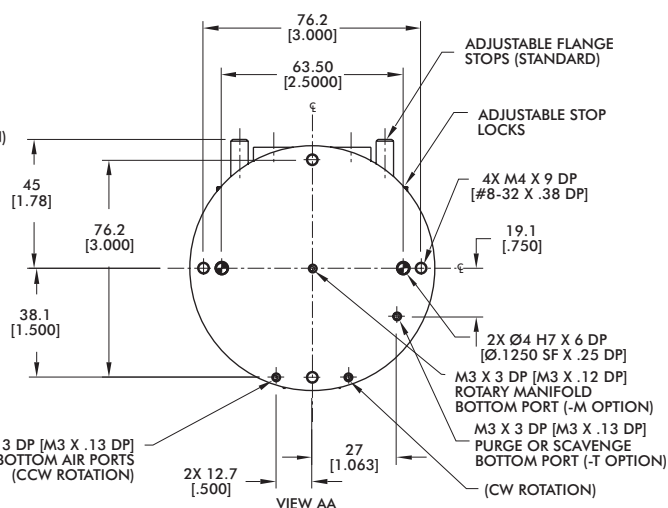
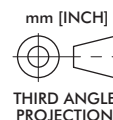
Rotary Actuators | Dimensions and Technical Specifications



UNIT SHOWN IN 0° POSITION ROTATED FULLY CW

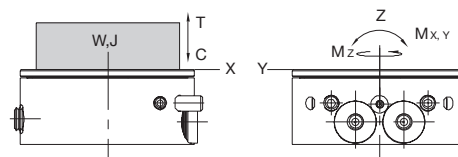


PLEASE NOTE: THE ONLY FEATURES THAT ARE NOT DIRECTLY RETROFITTABLE TO THE RR-26 IS THE DIFFERENT SENSORS & SENSOR MOUNTING KIT.



Seal Repair Kits	Order #
Buna-N Seal Repair Kit	SLKT-175
Viton® Seal Repair Kit	SLKT-175V
Viton® Bottom Air Port Manifold Seal Kit	SLKT-176V

Loading Information



RR-28 Loading Information	Static
Maximum Tensile T	334 N [75 lbs]
Maximum Compressive C	2224 N [500 lbs]
Maximum Moment M _x	28 Nm [250 in-lbs]
Maximum Moment M _y	28 Nm [250 in-lbs]
Maximum Payload W	1.36 kg [3 lbs]
Maximum Inertia J	0.001255 N-m-sec ² [0.0111 in-lbs-sec ²]

Note: Higher payloads and inertia possible with external shocks and stops.

RR MEDIUM-DUTY SERIES

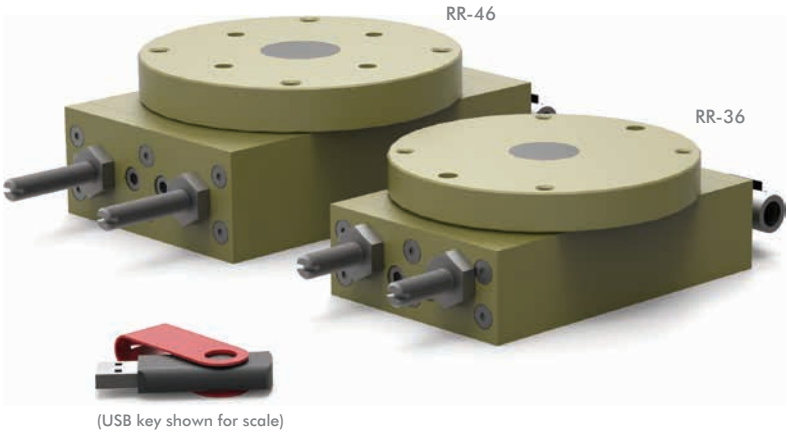
Rotary Actuators | Features and Benefits | How To Order

Features:

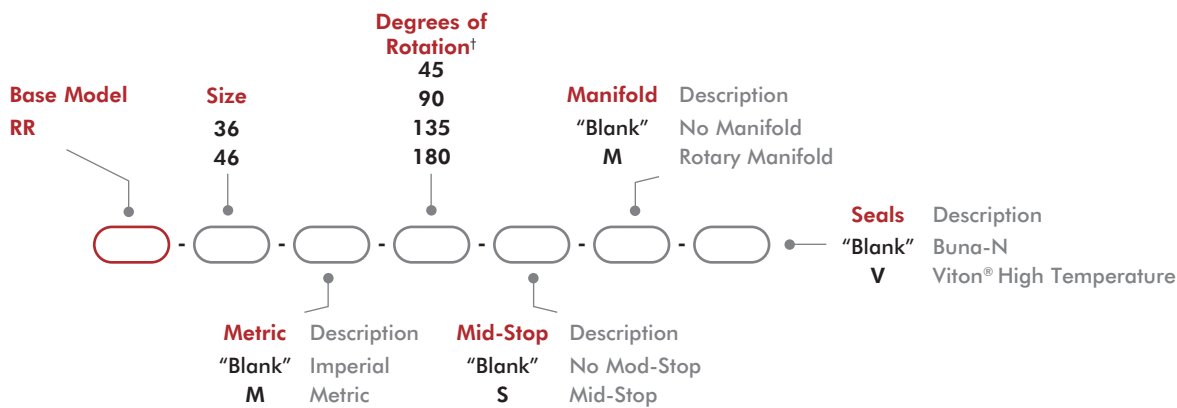
- Low profile, high capacity for tight space applications
- Mount payload directly to flange without additional support
- Preloaded bearings for high repeatability rotary actuation
- Zero backlash and slip fit dowel pins for precision applications
- Built-in adjustable hard-stops and shock absorbers
- Adjustable flow controls
- Optional manifold eliminates twisted airlines
- 3 position rotary with option mid-stop

Applications:

- Precision rotary positioning
- Part orientation
- Load and unload



How To Order



[†]Consult factory for intermediate degrees of rotation.

Accessories

Sensor Accessories	Model Numbers	Part Number	Qty/Unit
Sensor Mounting Kit (mounts 2 sensors)	All Models	OSMK-024	1
NPN Inductive Sensor with Quick Disconnect*	All Models	OISN-014	1-2
PNP Inductive Sensor with Quick Disconnect*	All Models	OISP-014	1-2
Quick Disconnect 2 Meter Cable Length*	All Models	CABL-010	1-2
Quick Disconnect 5 Meter Cable Length*	All Models	CABL-013	1-2

*Sensor and cable sold separately.

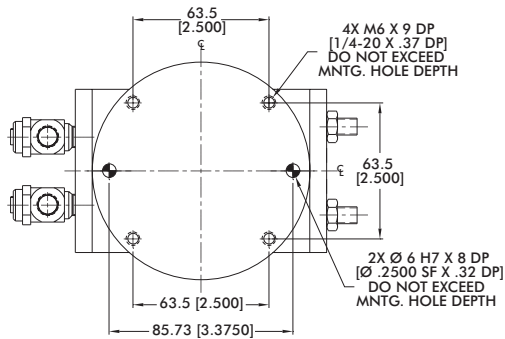
RR MEDIUM-DUTY SERIES

Rotary Actuators | Technical Specifications

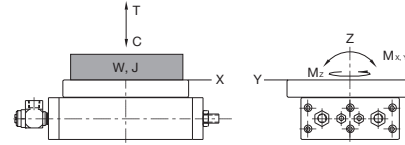
Specifications	Units	36	46
Maximum Payload	kg [lb]	3.6 [8.0]	6.8 [15]
Maximum Payload Inertia	Nm sec ² [in-lbs sec ²]	0.00468 [0.0414]	0.01096 [0.0970]
Maximum Rotation		180°	
Maximum Torque Mid-Stroke @ 100psi/7 bar	Nm [lbs-in]	7.4 [65]	14 [122]
Maximum Torque End-Stroke @ 100psi/7 bar	Nm [lbs-in]	3.7 [32]	7 [61]
Weight (base unit)	kg [lb]	1.3 [2.9]	2.3 [5]
Weight Adder for Mid-Position Stop	kg [lb]	0.18 [0.4]	0.19 [0.42]
Weight Adder for Rotary Manifold	kg [lb]	0.04 [0.1]	0.17 [0.38]
Pressure Range	bar [psi]	3-7 [40-100]	
Ingress Protection Class (IP)		IP55	
Displacement (180°)	cm ³ [in ³]	33.6 [2.05]	63.18 [3.855]
Displacement of Mid-Position Stop	cm ³ [in ³]	19.66 [1.200]	35.95 [2.194]
Temperature Range (Buna-N seals)	°C [°F]	-0°~66° [32°~150°]	
Temperature Range (Viton® seals)			
Actuation Time (180° @ 100psi/7 bar)	sec	0.35	0.41
Actuation Time (90° @ 100psi/7 bar)	sec	0.2	0.36
End-Stop Repeatability		±0.02°	
Mid-Stop Repeatability		±0.5°	
End-Stop Adjustability		60°	
Over Travel (each end)		4°	
Valve required to actuate		4-way, 2-position	
Valve required to actuate Mid-Stop		3-way, 2-position	

RR-36

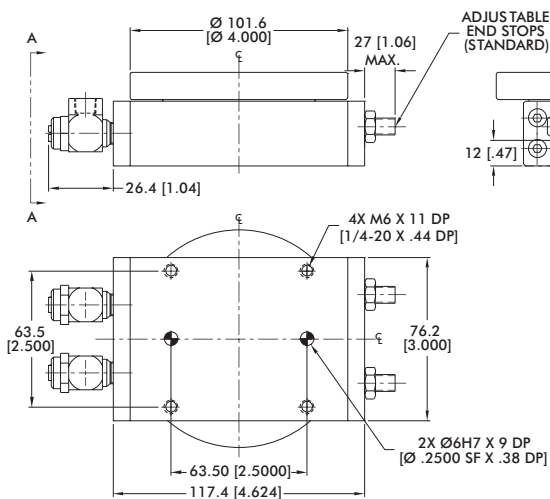
Rotary Actuators | Dimensions and Technical Specifications



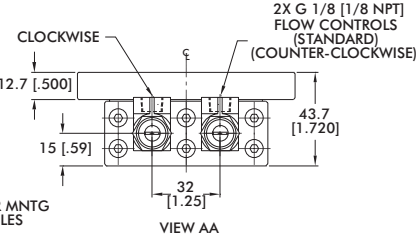
UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



RR-36 Loading information	Static
Maximum Tensile T	2445 N [100 lbs]
Maximum Compressive C	2224 N [500 lbs]
Maximum Moment M _x	34 Nm [300 in-lbs]
Maximum Moment M _y	34 Nm [300 in-lbs]
Maximum Payload W	3.64 kg [8 lbs]
Maximum Inertia J	0.00468 N-m-sec ² [0.0414 in-lbs-sec ²]



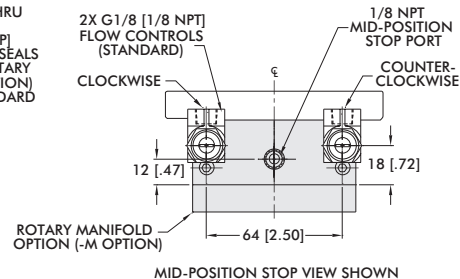
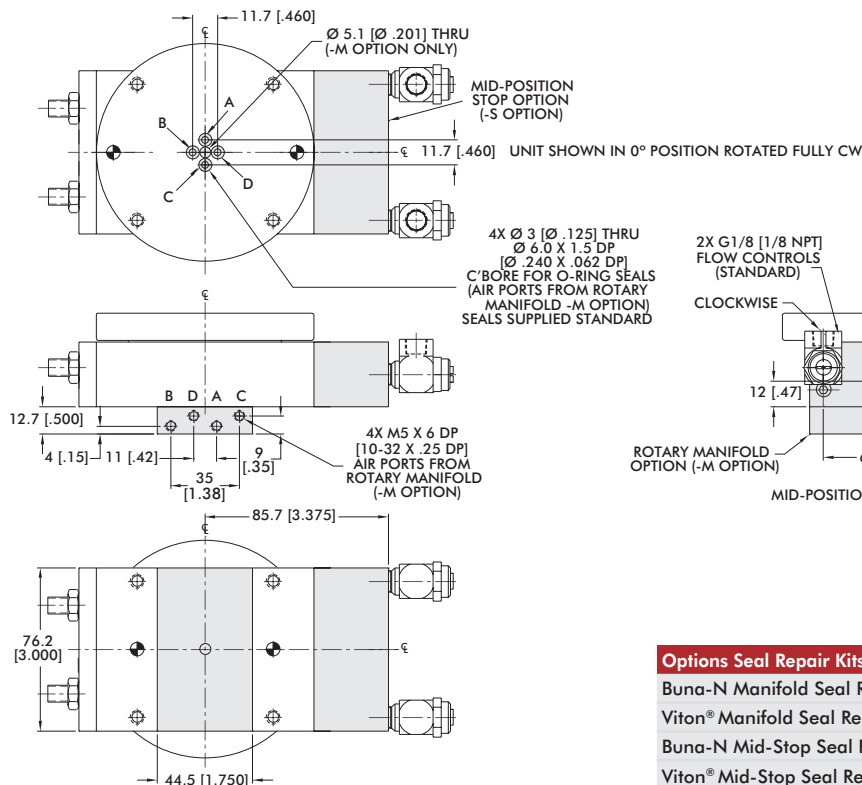
ADJUSTABLE
END STOPS
(STANDARD)



mm [INCH]
THIRD ANGLE
PROJECTION

Base Unit Seal Repair Kits	Order #
Buna-N Seal Repair Kit	SLKT-016
Viton® Seal Repair Kit	SLKT-016V

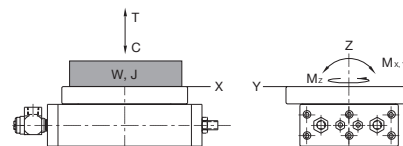
Options Dimensions



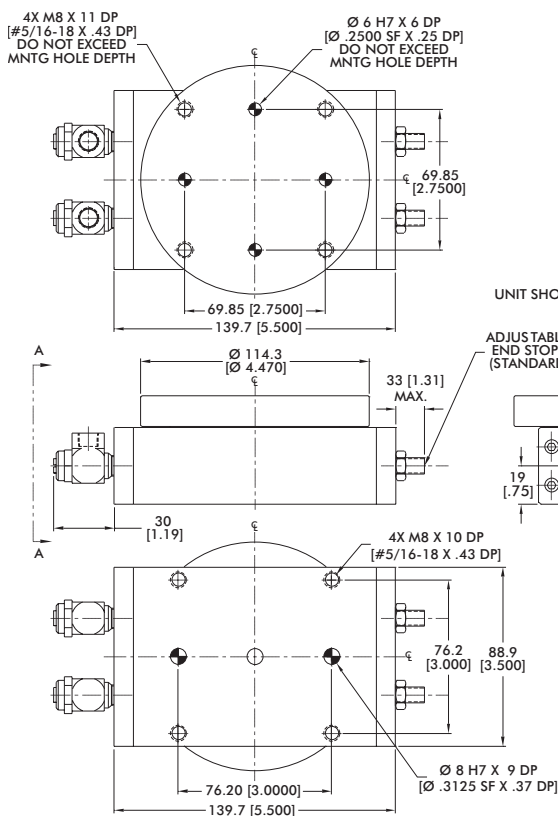
mm [INCH]
THIRD ANGLE
PROJECTION

Options Seal Repair Kits	Order #
Buna-N Manifold Seal Repair Kit	-M SLKT-061
Viton® Manifold Seal Repair Kit	-M-V SLKT-061V
Buna-N Mid-Stop Seal Repair Kit	-S SLKT-062
Viton® Mid-Stop Seal Repair Kit	-S-V SLKT-062V

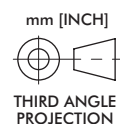
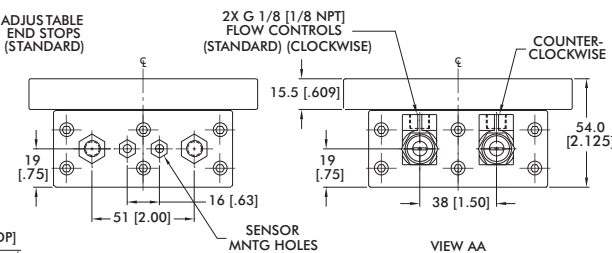
Rotary Actuators | Dimensions and Technical Specifications



RR-46 Loading Information	Static
Maximum Tensile T	890 N [200 lbs]
Maximum Compressive C	4448 N [1000 lbs]
Maximum Moment M_x	57 Nm [500 in-lbs]
Maximum Moment M_y	57 Nm [500 in-lbs]
Maximum Payload W	6.8 kg [15 lbs]
Maximum Inertia J	0.01096 N-m-sec ² [0.0970 in-lbs-sec ²]

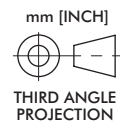
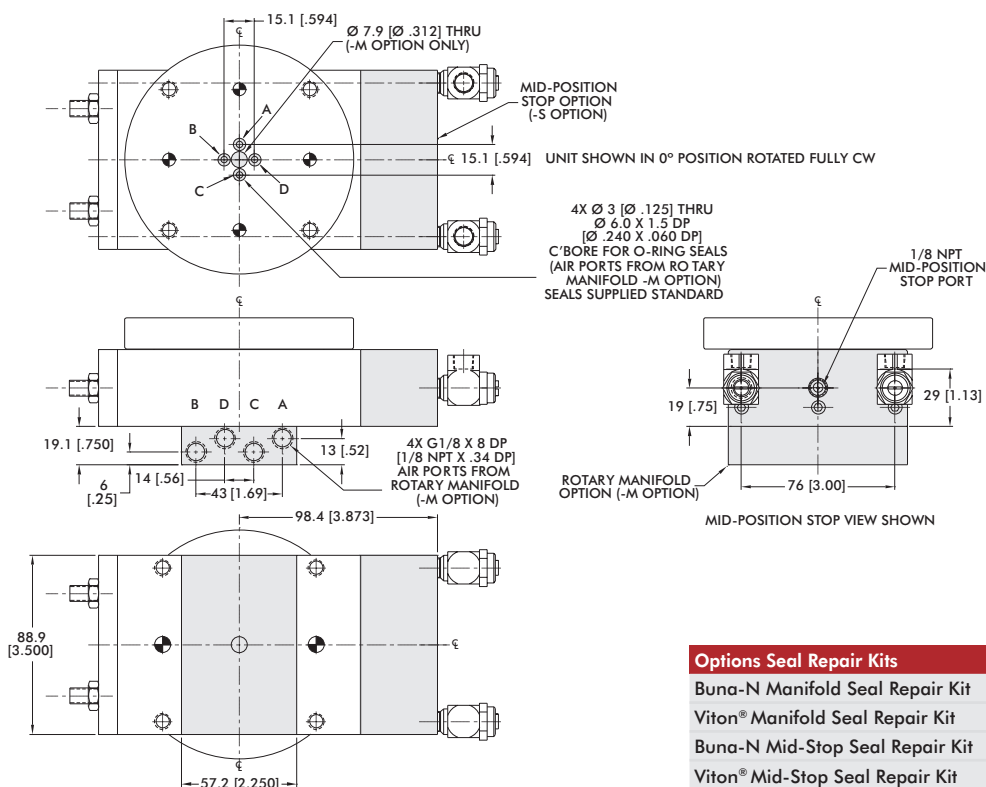


UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



Base Unit Seal Repair Kits	Order #
Buna-N Seal Repair Kit	SLKT-017
Viton® Seal Repair Kit	SLKT-017V

Options Dimensions



Options Seal Repair Kits		Order #
Buna-N Manifold Seal Repair Kit	-M	SLKT-067
Viton® Manifold Seal Repair Kit	-M-V	SLKT-067V
Buna-N Mid-Stop Seal Repair Kit	-S	SLKT-068
Viton® Mid-Stop Seal Repair Kit	-S-V	SLKT-068V

RR HEAVY-DUTY SERIES

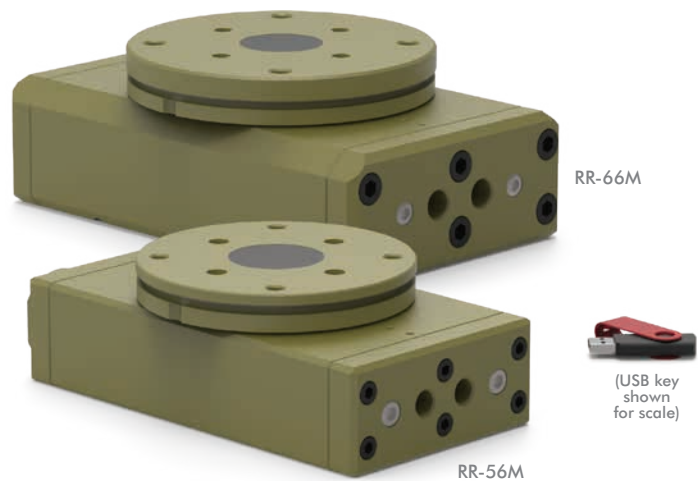
Rotary Actuators | Features and Benefits | How To Order

Features:

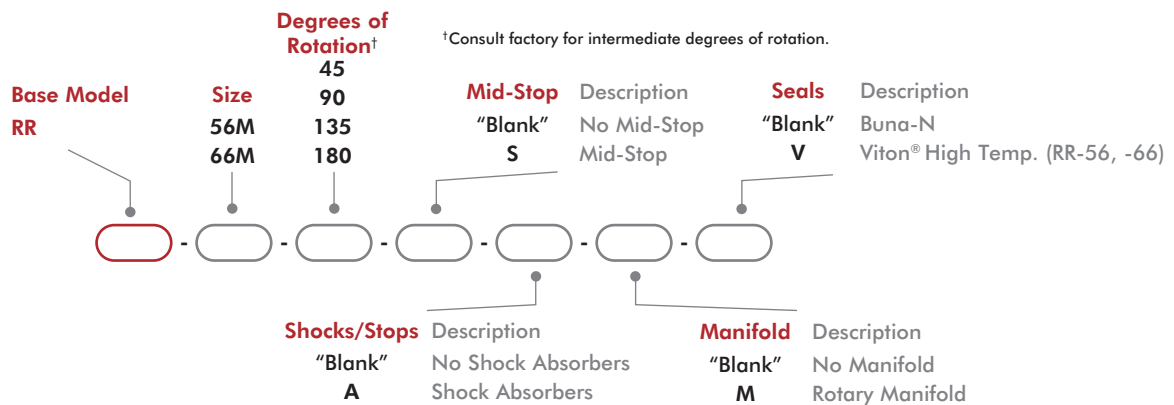
- Compact large capacity, high torque for tight space applications
- Use in heavy duty industrial and foundry applications
- Mount payload directly to flange without additional support
- Preloaded bearings for high repeatability rotary actuation
- Zero backlash & precision slip fit dowel pins
- Adjustable flow controls
- Optional manifold eliminates twisted airlines
- 3 position rotary with option mid-stop

Applications:

- Large torque application
- Foundry applications
- Load and unload



How To Order



Accessories

Sensor Accessories	Model Numbers	Part Number	Qty/Unit
Inductive Sensor Mounting Kit (mounts 2 sensors)	-56, -66	OSMK-075	1
Magneto Resistive Sensor Mounting Kit (mounts 2 sensors)	-56, -66	OSMK-069	1
NPN Inductive Sensor with Quick Disconnect*	-56, -66	OISN-011	1-2
PNP Inductive Sensor with Quick Disconnect*	-56, -66	OISP-011	1-2
NPN Magneto Resistive Sensor with Quick Disconnect*	-56, -66	OHSN-017	1-2
PNP Magneto Resistive Sensor with Quick Disconnect*	-56, -66	OHSP-017	1-2
Quick Disconnect 2 Meter Cable Length*	-56, -66	CABL-010	1-2
Quick Disconnect 5 Meter Cable Length*	-56, -66	CABL-013	1-2

Pneumatic Accessories	Model Numbers	Part Number	Qty/Unit
G 1/4 BSPP Flow Controls	-56	VLVF-010	2
G 3/8 BSPP Flow Control	-66	VLVF-012	2

*Sensor and cable sold separately.

RR HEAVY-DUTY SERIES

Rotary Actuators | Technical Specifications

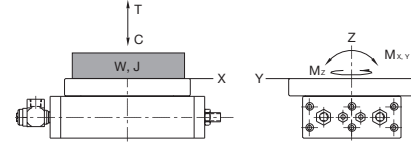
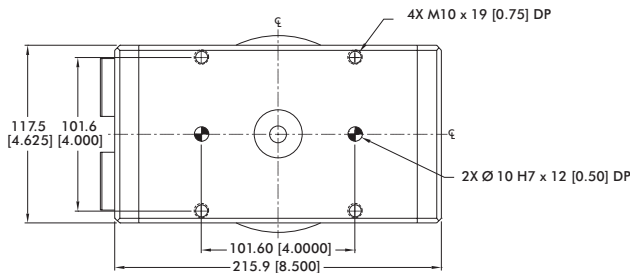
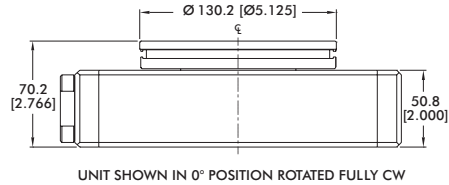
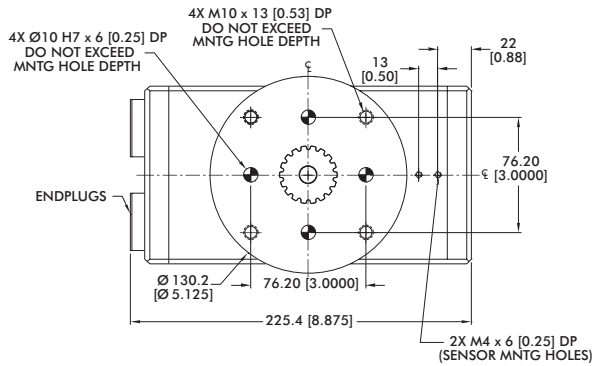
Specifications	Units	56	66
Maximum Payload [†]	kg [lb]	13.6 [30]	34 [75]
Maximum Payload Inertia [†]	Nm sec ² [in-lbs sec ²]	0.02880 [0.2549]	0.11584 [1.0251]
Maximum Rotation		180°	
Maximum Torque Mid-Stroke @ 100psi/7 bar	Nm [lbs-in]	35 [311]	82 [728]
Maximum Torque End-Stroke @ 100psi/7 bar	Nm [lbs-in]	17 [155]	41 [364]
Weight (base unit)	kg [lb]	5.3 [11.6]	11.8 [26]
Weight Adder for Mid-Position Stop	kg [lb]	0.82 [1.8]	0.82 [1.8]
Weight Adder for Rotary Manifold	kg [lb]	0.54 [1.2]	0.36 [0.82]
Pressure Range	bar [psi]	3-7 [40-100]	
Ingress Protection Class (IP)		IP55	
Displacement	cm ³ [in ³]	160.1 [9.77]	375 [22.8]
Displacement of Mid-Position Stop	cm ³ [in ³]	90.16 [5.502]	60.32 [2.375]
Temperature Range (Buna-N seals)	°C [°F]	0°~66° [-32°~150°]	
Temperature Range (Viton® seals)			
Actuation Time (180° @ 100psi/7 bar)	sec	0.48	0.70
Actuation Time (90° @ 100psi/7 bar)	sec	0.40	0.50
End-Stop Repeatability		±0.02°	
Mid-Stop Repeatability		±0.5°	
End-Stop Adjustability*		30°	20°
Over Travel (each end)		4°	
Valve required to actuate		4-way, 2-position	
Valve required to actuate Mid-Stop		3-way, 2-position	

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

*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.

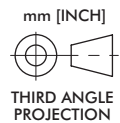
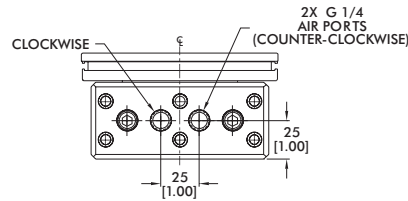
RR-56

Rotary Actuators | Dimensions and Technical Specifications



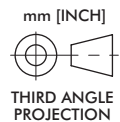
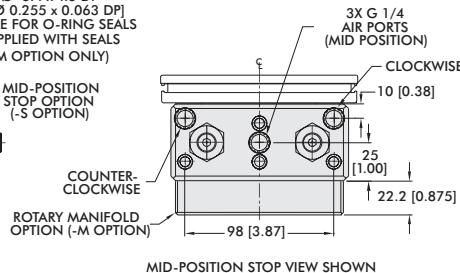
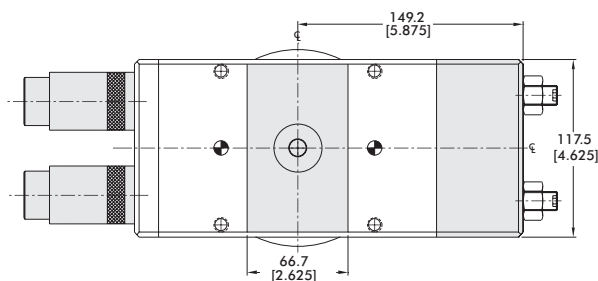
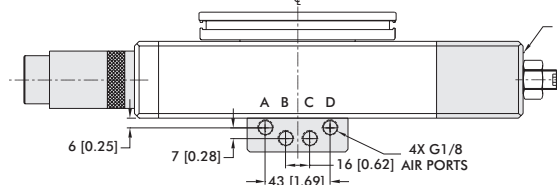
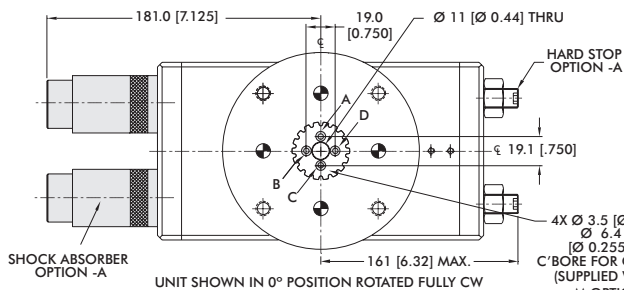
RR-56 Loading information	Static
Maximum Tensile T	3559 N [800 lbs]
Maximum Compressive C	8896 N [2000 lbs]
Maximum Moment M _x	113 Nm [1000 in-lbs]
Maximum Moment M _y	113 Nm [1000 in-lbs]
Maximum Payload W [†]	13.64 kg [30 lbs]
Maximum Inertia J [†]	0.0288 N-m-sec ² [0.2549 in-lbs-sec ²]

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



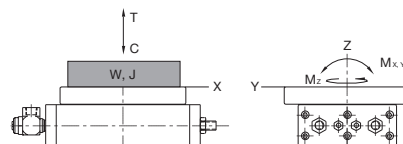
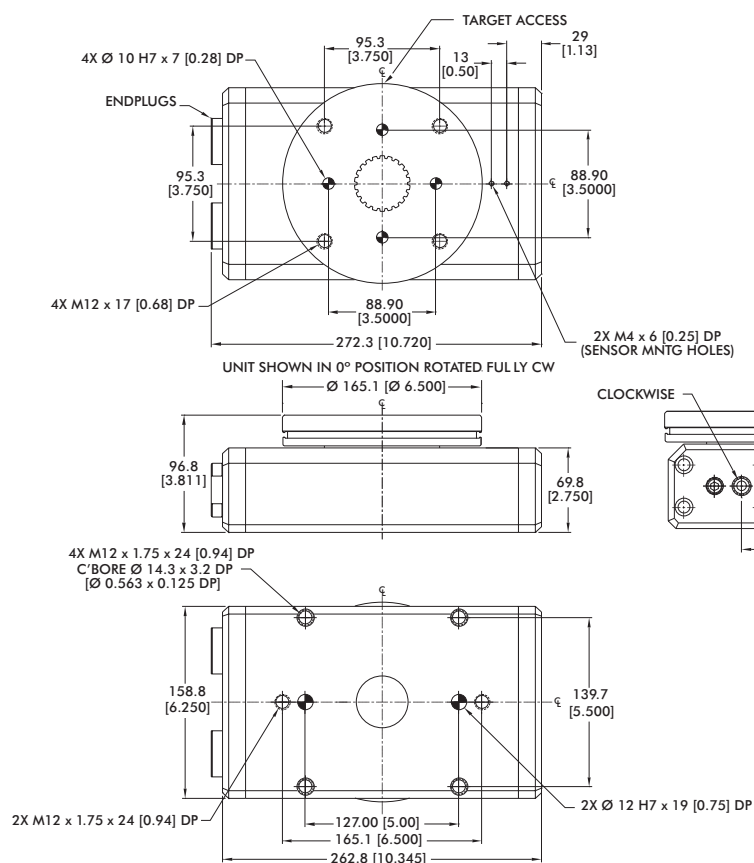
Base Unit Seal Repair Kits	Order #
Buna-N Seal Repair Kit	SLKT-124
Viton® Seal Repair Kit	SLKT-124V

Options Dimensions



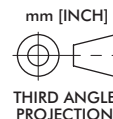
Options Seal Repair Kits		Order #
Buna-N Manifold Seal Repair Kit	-M	SLKT-126
Viton® Manifold Seal Repair Kit	-M-V	SLKT-126V
Buna-N Mid-Stop Seal Repair Kit	-S	SLKT-127
Viton® Mid-Stop Seal Repair Kit	-S-V	SLKT-127V
Buna-N Shock Seal Repair Kit	-A	SLKT-125
Viton® Shock Seal Repair Kit	-A-V	SLKT-125V

Rotary Actuators | Dimensions and Technical Specifications



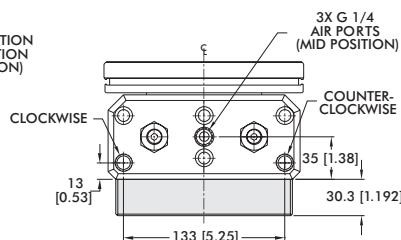
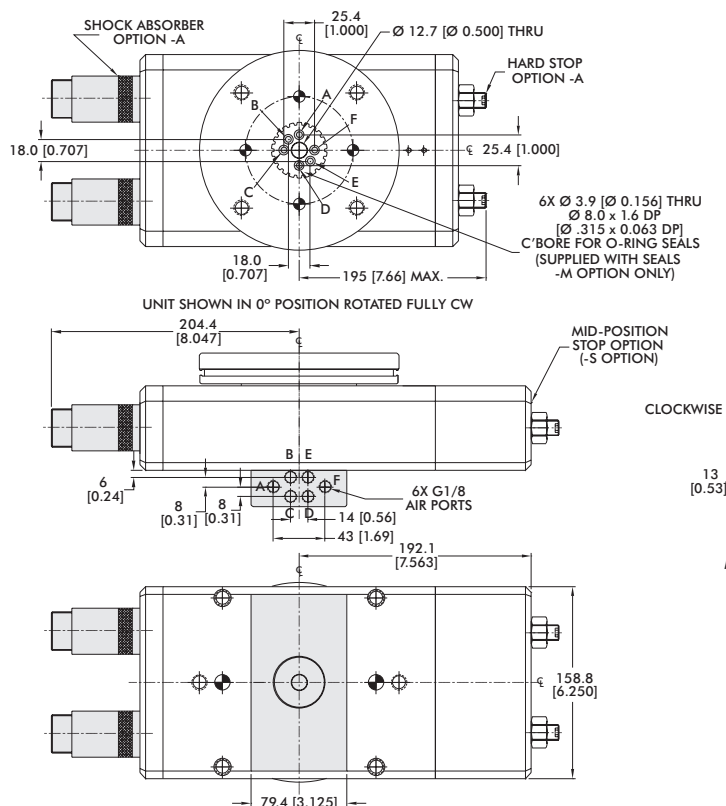
RR-66 Loading Information	Static
Maximum Tensile T	4448 N [1000 lbs]
Maximum Compressive C	15569 N [3500 lbs]
Maximum Moment M _x	226 Nm [2000 in-lbs]
Maximum Moment M _y	226 Nm [2000 in-lbs]
Maximum Payload W [†]	34 kg [75 lbs]
Maximum Inertia J [†]	0.1158 N-m-sec ² [1.025 in-lbs-sec ²]

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

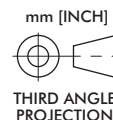


Base Unit Seal Repair Kits	Order #
Buna-N Seal Repair Kit	SLKT-128
Viton® Seal Repair Kit	SLKT-128V

Options Dimensions



MID-POSITION STOP VIEW SHOWN



Options Seal Repair Kits		Order #
Buna-N Manifold Seal Repair Kit	-M	SLKT-130
Viton® Manifold Seal Repair Kit	-M-V	SLKT-130V
Buna-N Mid-Stop Seal Repair Kit	-S	SLKT-131
Viton® Mid-Stop Seal Repair Kit	-S-V	SLKT-131V
Buna-N Shock Seal Repair Kit	-A	SLKT-129
Viton® Shock Seal Repair Kit	-A-V	SLKT-129V