

# RR LIGHT-DUTY SERIES

## Rotary Actuators | Features and Benefits | How To Order

### Features:

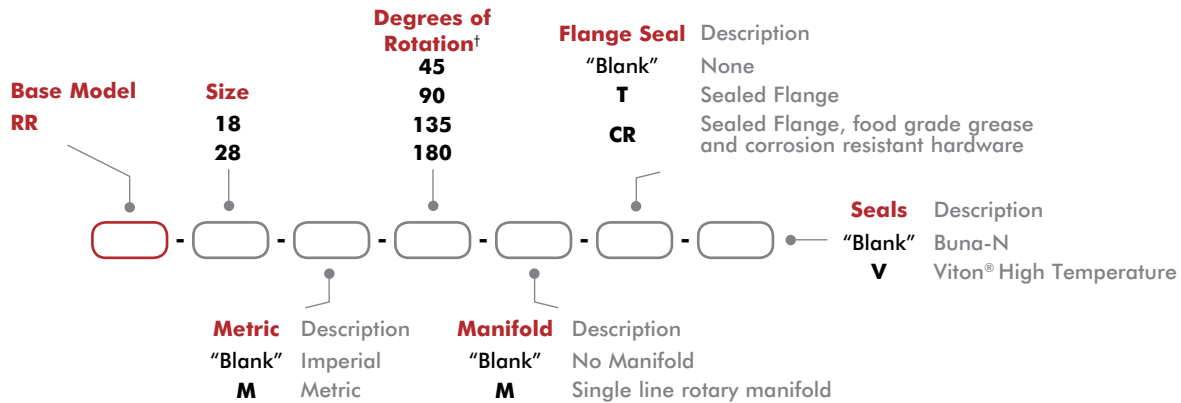
- Ultra-thin profile for tight space applications
- Preloaded bearings for high repeatability rotary actuation
- Zero backlash and slip fit dowel pins for precision applications
- Built-in adjustable hard-stops
- Optional manifold eliminates twisted airlines
- **CR-** Clean room option or for use in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

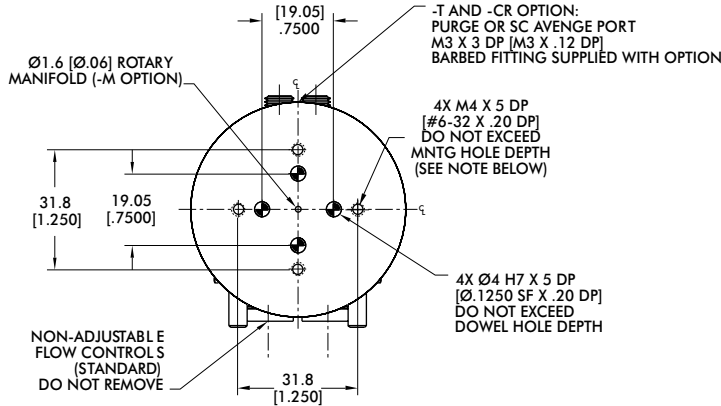
# RR LIGHT-DUTY SERIES

## Rotary Actuators | Technical Specifications

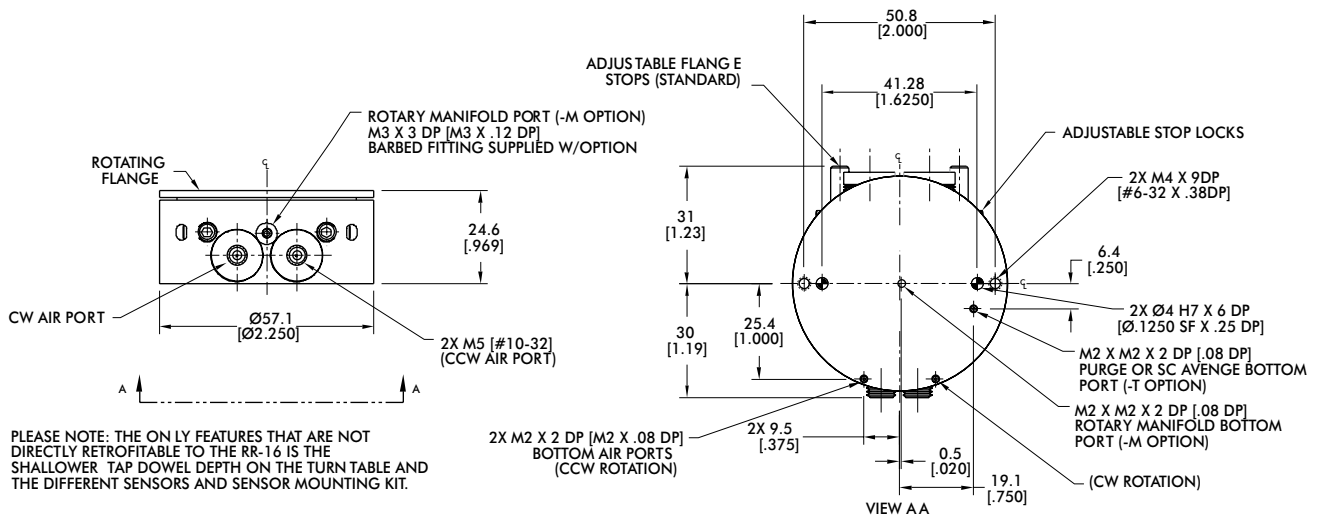
| Specifications                           | Units   | 18                    | 28                   |
|--|---|-----------------------|----------------------|
| Maximum Payload                          | kg [lb]   | 0.45 [1.0]            | 1.36 [3.0]           |
| Maximum Payload Inertia                  | Nm sec <sup>2</sup><br>[in-lbs sec <sup>2</sup> ] | 0.000181<br>[0.0016]  | 0.001255<br>[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 <sup>3</sup> [in <sup>3</sup> ]                | 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     |                      |

# RR-18

## Rotary Actuators | Dimensions and Technical Specifications

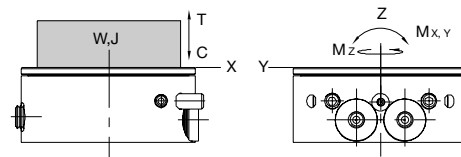


UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



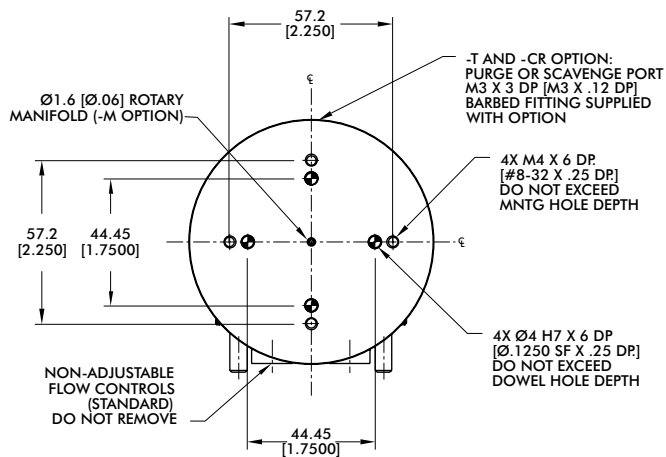
| Seal Repair Kits                         | Order #   |
|--|-----------|
| Buna-N Seal Repair Kit                   | SLKT-173  |
| Viton® Seal Repair Kit                   | SLKT-173V |
| Viton® Bottom Air Port Manifold Seal Kit | SLKT-174V |

### Loading Information

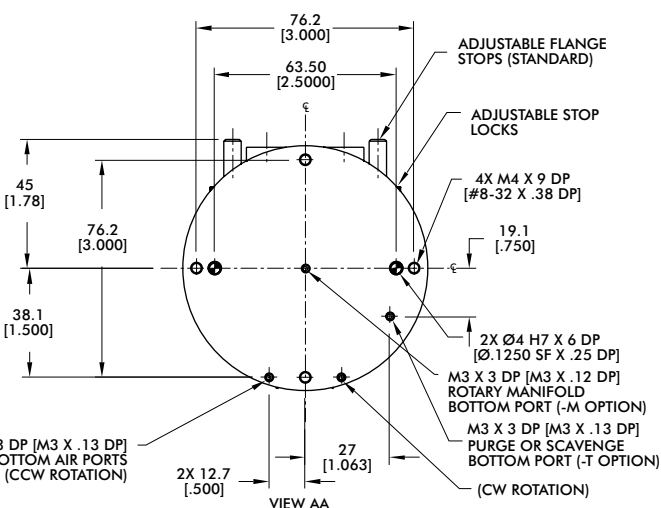
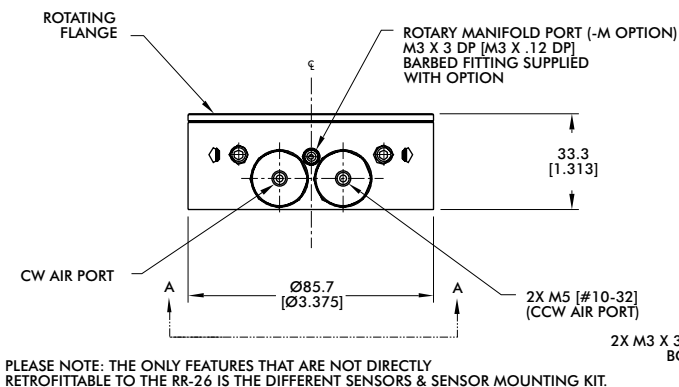


| RR-18 Loading Information           | Static   |
|-------------------------------------|--|
| Maximum Tensile <b>T</b>            | 222 N [50 lbs]   |
| Maximum Compressive <b>C</b>        | 1112 N [250 lbs]   |
| Maximum Moment <b>M<sub>x</sub></b> | 11 Nm [100 in-lbs]   |
| Maximum Moment <b>M<sub>y</sub></b> | 11 Nm [100 in-lbs]   |
| Maximum Payload <b>W</b>            | 0.45 kg [1 lbs]  |
| Maximum Inertia <b>J</b>            | 0.000181 N-m-sec <sup>2</sup><br>[0.0016 in-lbs-sec <sup>2</sup> ] |

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

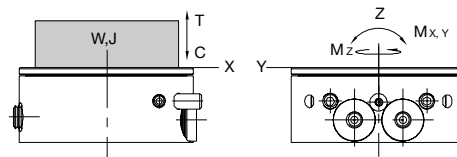


UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



| 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 <b>T</b>            | 334 N [75 lbs]   |
| Maximum Compressive <b>C</b>        | 2224 N [500 lbs]   |
| Maximum Moment <b>M<sub>x</sub></b> | 28 Nm [250 in-lbs]   |
| Maximum Moment <b>M<sub>y</sub></b> | 28 Nm [250 in-lbs]   |
| Maximum Payload <b>W</b>            | 1.36 kg [3 lbs]  |
| Maximum Inertia <b>J</b>            | 0.001255 N-m-sec <sup>2</sup><br>[0.0111 in-lbs-sec <sup>2</sup> ] |

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

# RR MEDIUM-DUTY SERIES

## Rotary Actuators | Features and Benefits | How To Order

### Features:

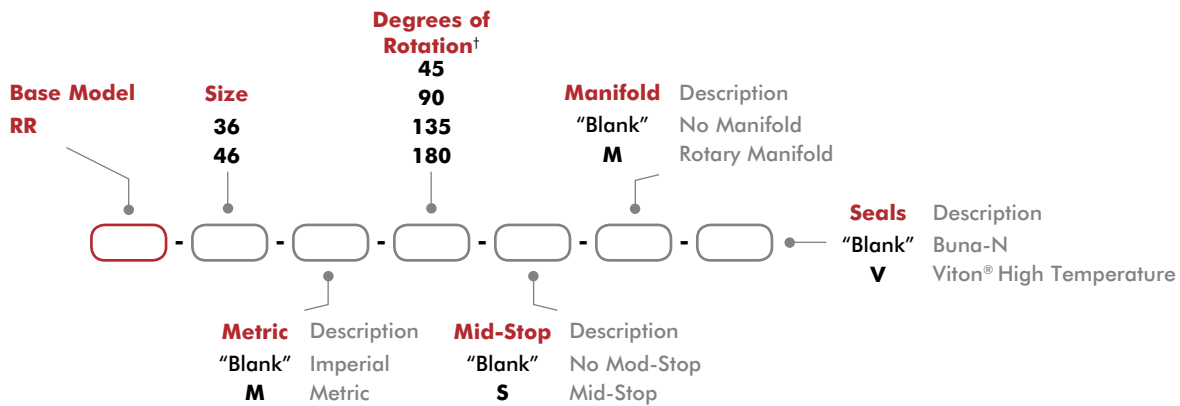
- Low profile, high capacity for tight space applications
- Mount payload directly to flange without additional support
- Preloaded bearings for high repeatability rotary actuation
- Zero backlash and slip fit dowel pins for precision applications
- Built-in adjustable hard-stops and shock absorbers
- 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    | OISP-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.

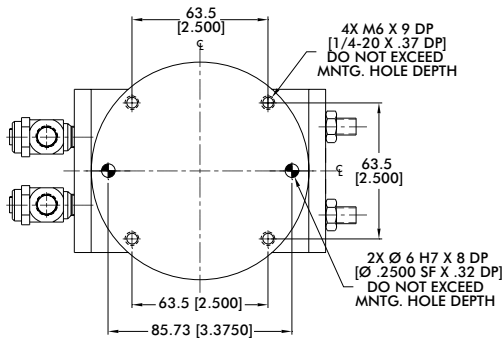
# RR MEDIUM-DUTY SERIES

## Rotary Actuators | Technical Specifications

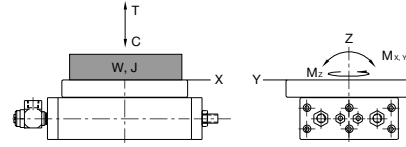
| Specifications                           | Units   | 36                  | 46                  |
|--|---|---------------------|---------------------|
| Maximum Payload                          | kg [lb]   | 3.6 [8.0]           | 6.8 [15]            |
| Maximum Payload Inertia                  | Nm sec <sup>2</sup><br>[in-lbs sec <sup>2</sup> ] | 0.00468<br>[0.0414] | 0.01096<br>[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 <sup>3</sup> [in <sup>3</sup> ]                | 33.6 [2.05]         | 63.18 [3.855]       |
| Displacement of Mid-Position Stop        | cm <sup>3</sup> [in <sup>3</sup> ]                | 19.66 [1.200]       | 35.95 [2.194]       |
| Temperature Range (Buna-N seals)         |   | -0°~66° [32°~150°]  |                     |
| Temperature Range (Viton® seals)         | °C [°F]   |                     |                     |
| 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

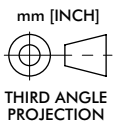
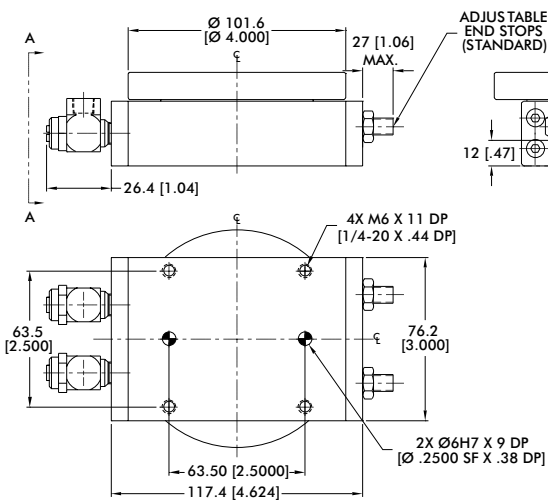
## Rotary Actuators | Dimensions and Technical Specifications



UNIT SHOWN IN 0° POSITION ROTATED FULLY CW

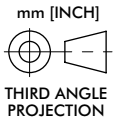
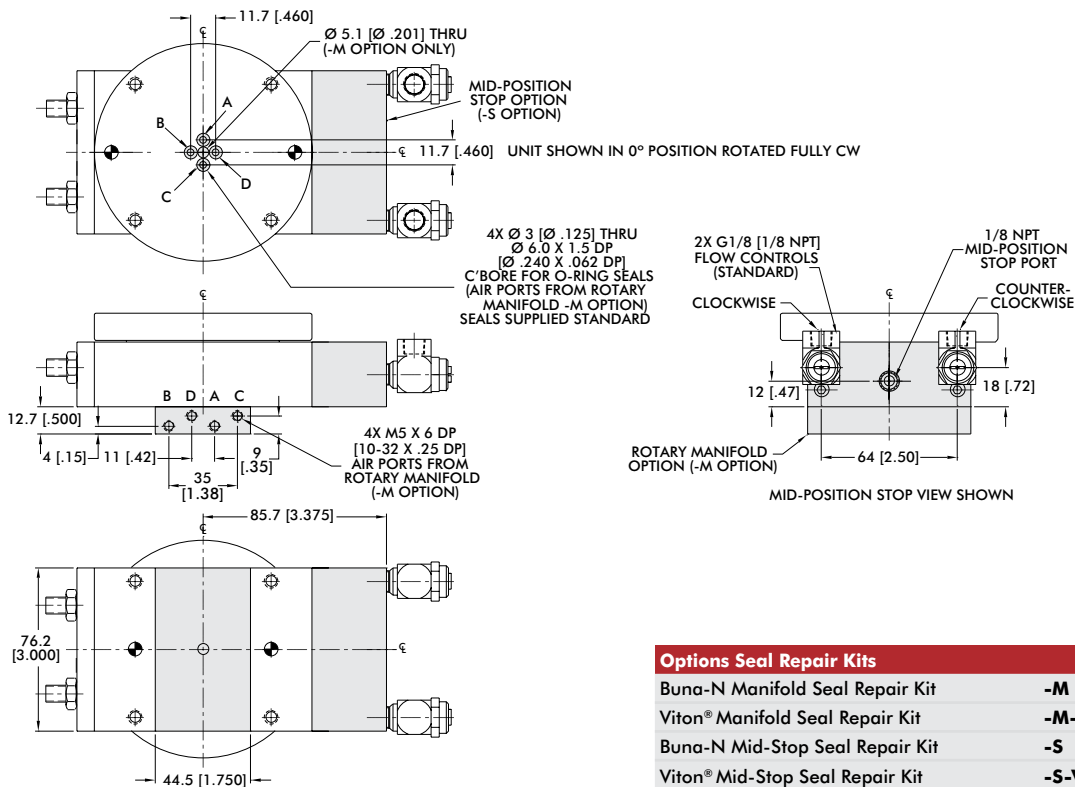


| RR-36 Loading Information           | Static   |
|-------------------------------------|--|
| Maximum Tensile <b>T</b>            | 2445 N [100 lbs]   |
| Maximum Compressive <b>C</b>        | 2224 N [500 lbs]   |
| Maximum Moment <b>M<sub>x</sub></b> | 34 Nm [300 in-lbs]   |
| Maximum Moment <b>M<sub>y</sub></b> | 34 Nm [300 in-lbs]   |
| Maximum Payload <b>W</b>            | 3.64 kg [8 lbs]  |
| Maximum Inertia <b>J</b>            | 0.00468 N-m-sec <sup>2</sup> [0.0414 in-lbs-sec <sup>2</sup> ] |



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

## Options Dimensions



| 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 |



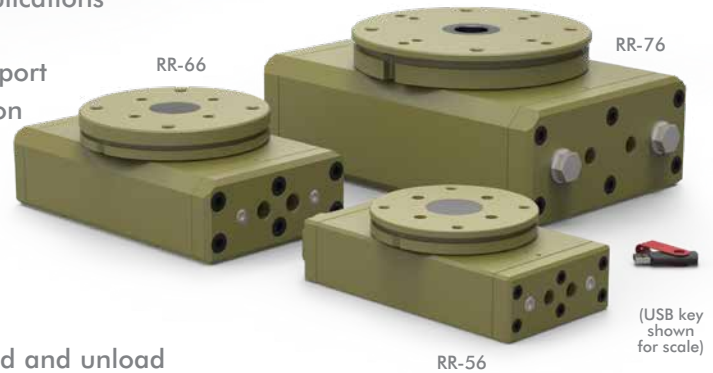


# RR HEAVY-DUTY SERIES

## Rotary Actuators | Features and Benefits | How To Order

### Features:

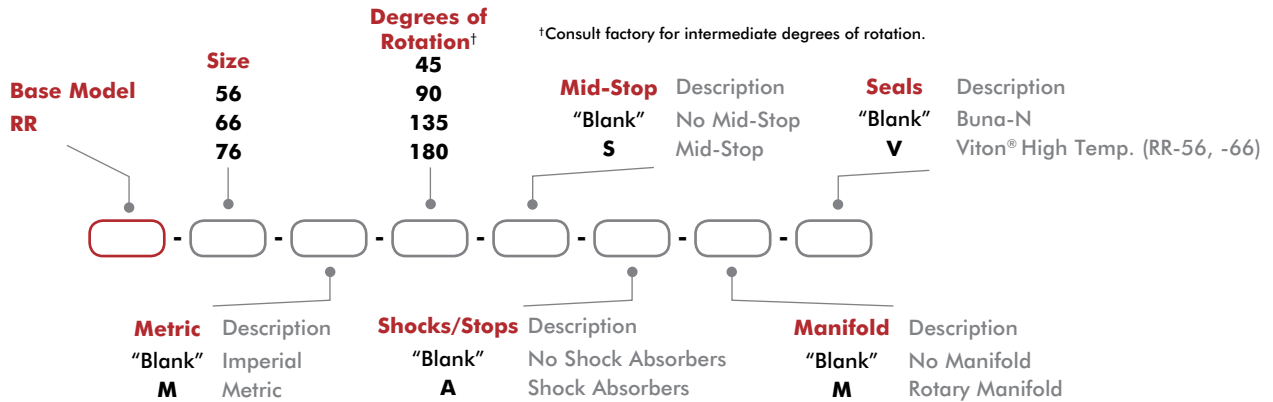
- Compact large capacity, high torque for tight space applications
- Use in heavy duty industrial and foundry applications
- Mount payload directly to flange without additional support
- Preloaded bearings for high repeatability rotary actuation
- Zero backlash & precision slip fit dowel pins
- Adjustable 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        |
| Inductive Sensor Mounting Kit (mounts 2 sensors)         | -76           | OSMK-096    | 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 Inductive Sensor with Quick Disconnect*              | -76           | OISN-017    | 1-2      |
| PNP Inductive Sensor with Quick Disconnect*              | -76           | OISP-017    | 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      |
| Quick Disconnect 2 Meter Cable Length*                   | -76           | CABL-014    | 1-2      |
| Quick Disconnect 5 Meter Cable Length*                   | -76           | CABL-018    | 1-2      |

| Pneumatic Accessories            | Model Numbers | Part Number | Qty/Unit |
|----------------------------------|---------------|-------------|----------|
| 1/4 NPT Flow Controls (Imperial) | -56           | VLVF-009    | 2        |
| G 1/4 BSPP Flow Controls         | -56           | VLVF-010    | 2        |
| 3/8 Flow Control (Imperial)      | -66, -76      | VLVF-011    | 2        |
| G 3/8 BSPP Flow Control          | -66, -76      | VLVF-012    | 2        |
| Adapter 1/8 NPT to G 1/8         | -76           | PLFT-028    | 1        |
| Adapter 3/8 NPT to G 3/8         | -76           | PLFT-029    | 1        |

\*Sensor and cable sold separately.

# RR HEAVY-DUTY SERIES

## Rotary Actuators | Technical Specifications

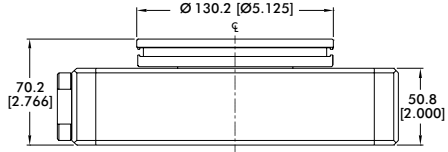
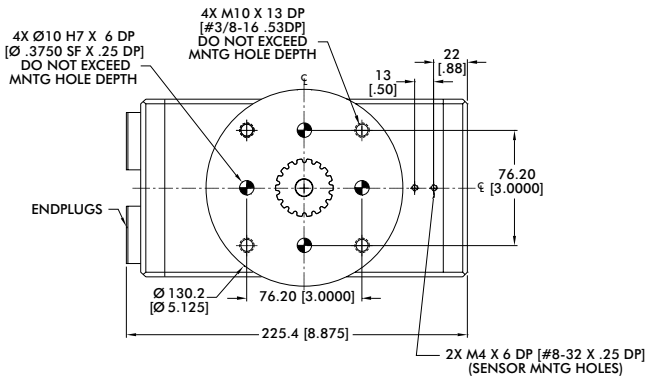
| Specifications                           | Units   | 56                  | 66                  | 76               |
|--|---|---------------------|---------------------|------------------|
| Maximum Payload <sup>†</sup>             | kg [lb]   | 13.6 [30]           | 34 [75]             | 91 [200]         |
| Maximum Payload Inertia <sup>†</sup>     | Nm sec <sup>2</sup><br>[in-lbs sec <sup>2</sup> ] | 0.02880<br>[0.2549] | 0.11584<br>[1.0251] | 0.5596<br>[4.95] |
| Maximum Rotation                         |   | 180°                |                     |                  |
| Maximum Torque Mid-Stroke @ 100psi/7 bar | Nm [lbs-in]                                       | 35 [311]            | 82 [728]            | 215 [1900]       |
| Maximum Torque End-Stroke @ 100psi/7 bar | Nm [lbs-in]                                       | 17 [155]            | 41 [364]            | 107 [950]        |
| Weight (base unit)                       | kg [lb]   | 5.3 [11.6]          | 11.8 [26]           | 24 [53]          |
| Weight Adder for Mid-Position Stop       | kg [lb]   | 0.82 [1.8]          | 0.82 [1.8]          | 3.8 [8.3]        |
| Weight Adder for Rotary Manifold         | kg [lb]   | 0.54 [1.2]          | 0.36 [0.82]         | 2.0 [4.2]        |
| Pressure Range                           | bar [psi]   | 3-7 [40-100]        |                     |                  |
| Ingress Protection Class (IP)            |   | IP55                |                     |                  |
| Displacement                             | cm <sup>3</sup> [in <sup>3</sup> ]                | 160.1 [9.77]        | 375 [22.8]          | 1026 [62.6]      |
| Displacement of Mid-Position Stop        | cm <sup>3</sup> [in <sup>3</sup> ]                | 90.16 [5.502]       | 60.32 [2.375]       | 885 [54]         |
| Temperature Range (Buna-N seals)         |   | 0°~66° [-32°~150°]  |                     |                  |
| Temperature Range (Viton® seals)         | °C [°F]   | 0°~66° [-32°~150°]  |                     |                  |
| Actuation Time (180° @ 100psi/7 bar)     | sec   | 0.48                | 0.70                | 1.4              |
| Actuation Time (90° @ 100psi/7 bar)      | sec   | 0.40                | 0.50                | 0.8              |
| 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   |                     |                  |

<sup>†</sup> Max. payload based on -A shock option.

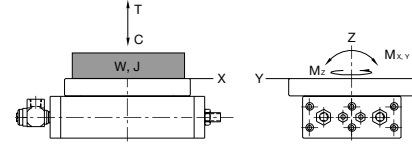
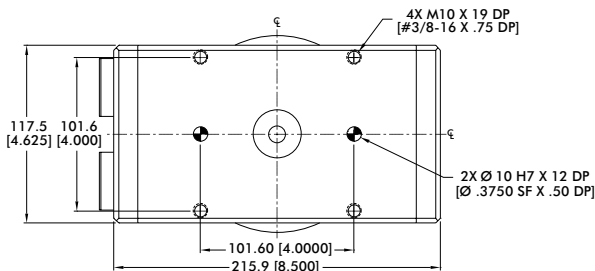
\*Any adjustment of the End Stop Adjustment Screw must be accompanied by an equal adjustment of the Shock Absorbers to prevent bottoming of the pistons against the Shock Absorbers.

# RR-56

## Rotary Actuators | Dimensions and Technical Specifications

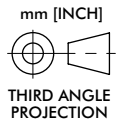
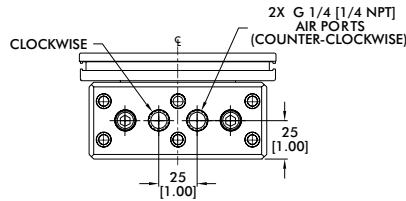


UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



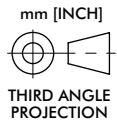
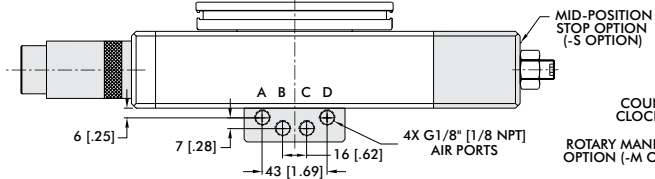
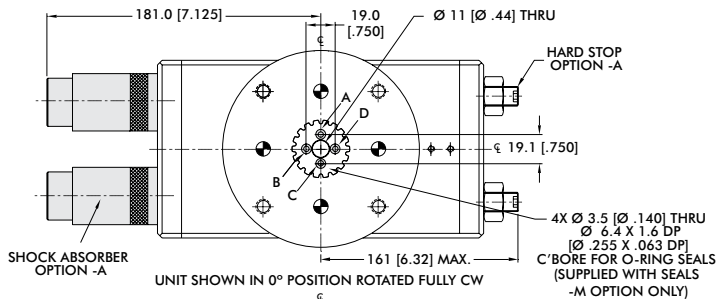
| RR-56 Loading information            | Static   |
|--------------------------------------|--|
| Maximum Tensile <b>T</b>             | 3559 N [800 lbs]   |
| Maximum Compressive <b>C</b>         | 8896 N [2000 lbs]  |
| Maximum Moment <b>M<sub>x</sub></b>  | 113 Nm [1000 in-lbs]   |
| Maximum Moment <b>M<sub>y</sub></b>  | 113 Nm [1000 in-lbs]   |
| Maximum Payload <b>W<sup>†</sup></b> | 13.64 kg [30 lbs]  |
| Maximum Inertia <b>J<sup>†</sup></b> | 0.0288 N-m-sec <sup>2</sup><br>[0.2549 in-lbs-sec <sup>2</sup> ] |

<sup>†</sup>Max. payload based on -A shock option.



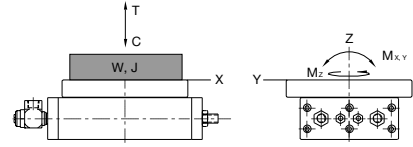
| Base Unit Seal Repair Kits | Order #   |
|----------------------------|-----------|
| Buna-N Seal Repair Kit     | SLKT-124  |
| Viton® Seal Repair Kit     | SLKT-124V |

## Options Dimensions



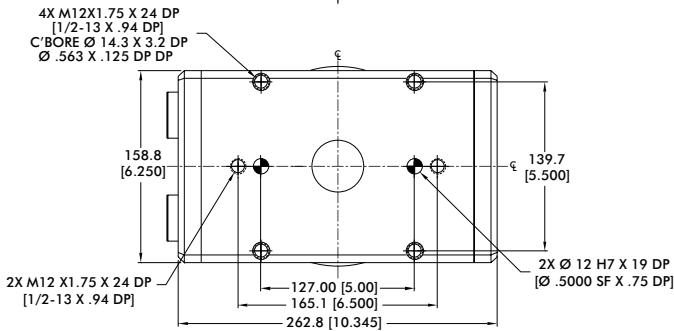
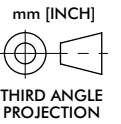
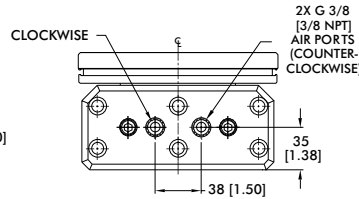
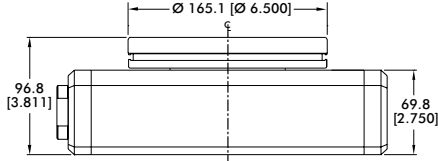
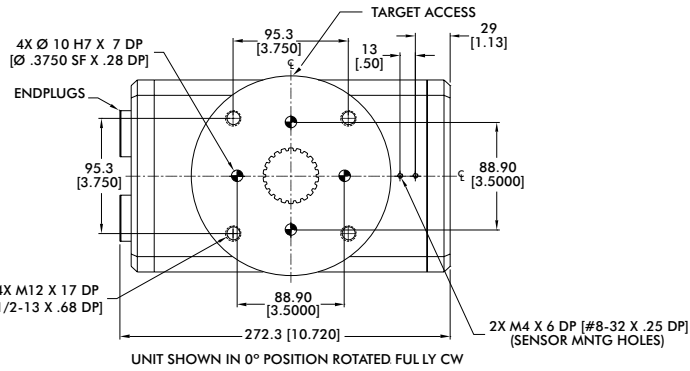
| Options Seal Repair Kits        | Order #        |
|---------------------------------|----------------|
| Buna-N Manifold Seal Repair Kit | -M SLKT-126    |
| Viton® Manifold Seal Repair Kit | -M-V SLKT-126V |
| Buna-N Mid-Stop Seal Repair Kit | -S SLKT-127    |
| Viton® Mid-Stop Seal Repair Kit |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



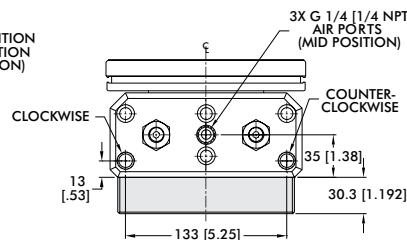
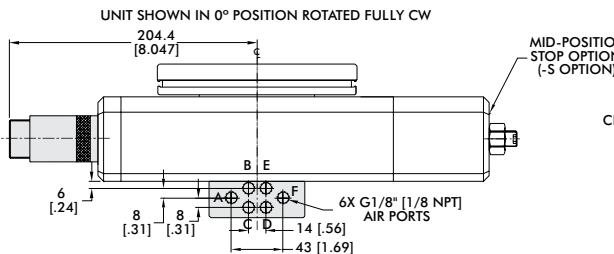
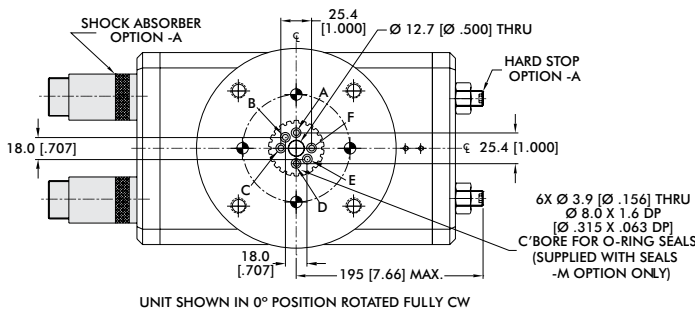
| RR-66 Loading Information            | Static  |
|--------------------------------------|---|
| Maximum Tensile <b>T</b>             | 4448 N [1000 lbs]   |
| Maximum Compressive <b>C</b>         | 15569 N [3500 lbs]  |
| Maximum Moment <b>M<sub>x</sub></b>  | 226 Nm [2000 in-lbs]  |
| Maximum Moment <b>M<sub>y</sub></b>  | 226 Nm [2000 in-lbs]  |
| Maximum Payload <b>W<sup>†</sup></b> | 34 kg [75 lbs]  |
| Maximum Inertia <b>J<sup>†</sup></b> | 0.1158 N-m-sec <sup>2</sup><br>[1.025 in-lbs-sec <sup>2</sup> ] |

<sup>†</sup>Max. payload based on -A shock option.

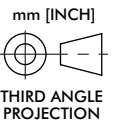
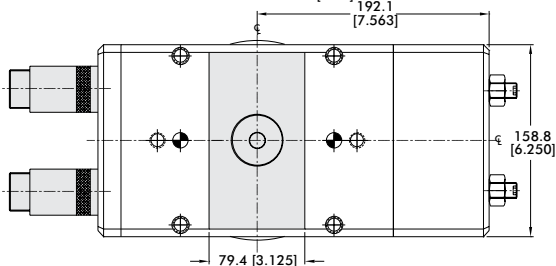


| Base Unit Seal Repair Kits | Order #   |
|----------------------------|-----------|
| Buna-N Seal Repair Kit     | SLKT-128  |
| Viton® Seal Repair Kit     | SLKT-128V |

## Options Dimensions



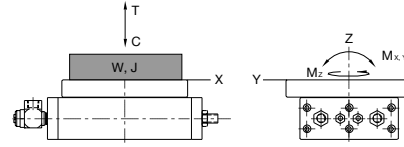
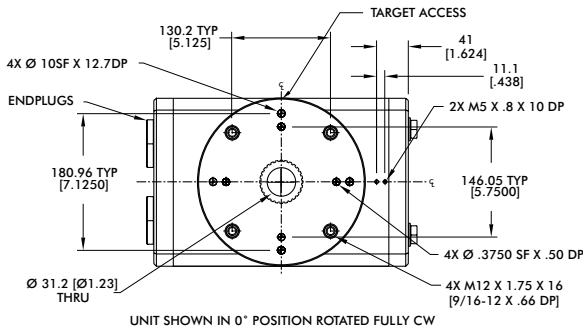
MID-POSITION STOP VIEW SHOWN



| 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 |

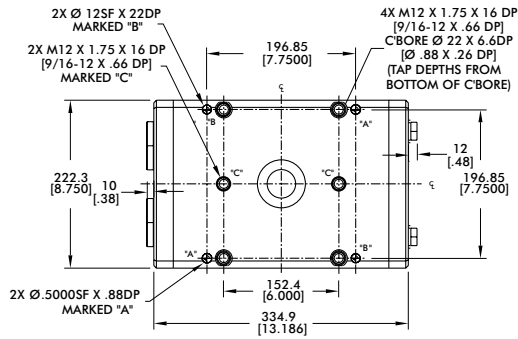
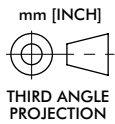
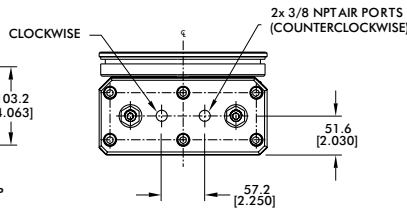
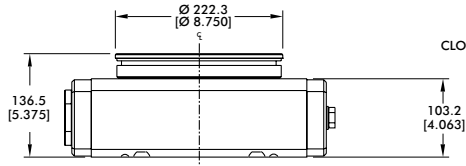
# RR-76

## Rotary Actuators | Dimensions and Technical Specifications



| RR-76 Loading Information            | Static  |
|--------------------------------------|---|
| Maximum Tensile <b>T</b>             | 8896 N [2000 lbs]   |
| Maximum Compressive <b>C</b>         | 20017 N [4500 lbs]  |
| Maximum Moment <b>M<sub>x</sub></b>  | 452 Nm [4000 in-lbs]  |
| Maximum Moment <b>M<sub>y</sub></b>  | 452 Nm [4000 in-lbs]  |
| Maximum Payload <b>W<sup>i</sup></b> | 91 kg [200 lbs]   |
| Maximum Inertia <b>J<sup>i</sup></b> | 0.5596 N-m-sec <sup>2</sup><br>[4.952 in-lbs-sec <sup>2</sup> ] |

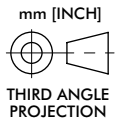
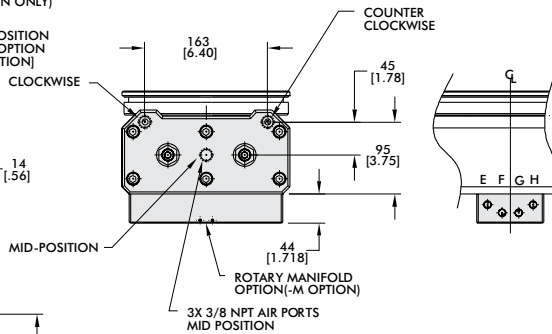
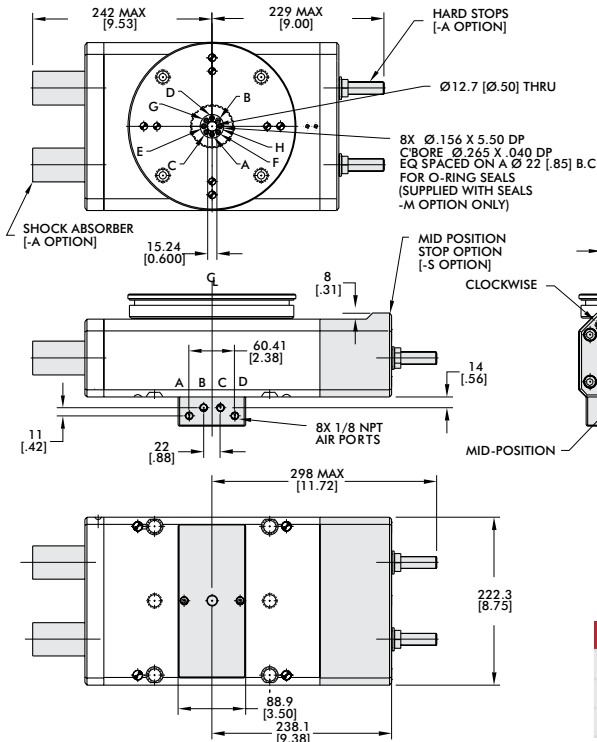
<sup>i</sup> Max. payload based on -A shock option.



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

| Base Unit Seal Repair Kits | Order #   |
|----------------------------|-----------|
| Viton® Seal Repair Kit     | SLKT-167V |

## Options Dimensions



| Options Seal Repair Kits        | Order #      |
|---------------------------------|--------------|
| Viton® Manifold Seal Repair Kit | -M SLKT-169V |
| Viton® Mid-Stop Seal Repair Kit | -S SLKT-168V |
| Buna-N Shock Seal Repair Kit    | -A SLKT-179  |