

# Custom Actuators



Examples of special request features

Warner Linear offers a broad range of standard actuators to suit many needs. We realize though, that often special application parameters dictate special actuator configurations and modifications. Warner Linear actuators are designed with this in mind, as many of our products can be readily customized to suit specific requirements.

Our products are built on modules that can be mixed and matched in final assembly. Our final assembly operations are configured to provide flexible assembly to accommodate custom orders, quickly and cost effectively.

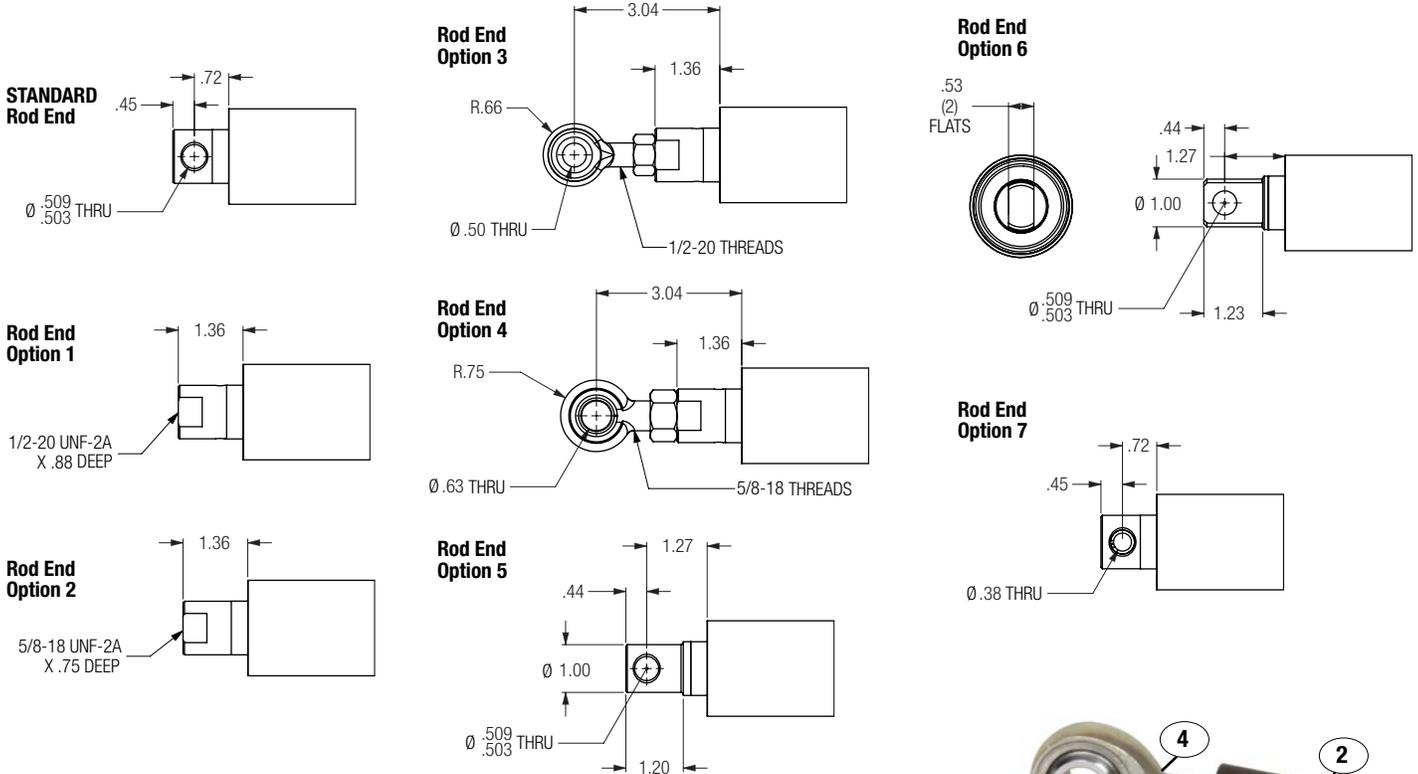
If your application has a special need that our standard catalog products are unable to fit, please contact your Warner Linear representative or consult with our technical specialists so we can configure a product to fit your need.

## A few of our standard special offerings:

- Special pin to pin lengths and stroke lengths
- Special end fittings and mounting configurations
- Special paints and motor lead wire lengths and connectors

## B-Track Rod End Mounting Options

Dimensions are in inches



## Rod End Mounting Option Examples

(Available for B-Track models only, consult factory for more options)

- |                           |                        |
|---------------------------|------------------------|
| 1. 1/2" Threaded rod end  | 5. 1" Extended rod end |
| 2. 5/8" Threaded rod end  | 6. Flat sided rod end  |
| 3. 1/2" Spherical rod end | 7. 3/8" Rod end insert |
| 4. 5/8" Spherical rod end |                        |

Consult with factory for specific mounting configuration needs.



Standard

# Custom Actuator Solutions

We recognize how critical our actuators are to the overall performance of your equipment. Working closely with your engineering and development staff, we strive for an early understanding of how you want your linear actuator to perform.

Building a direct communication line from our engineer to your engineer provides a number of significant benefits.

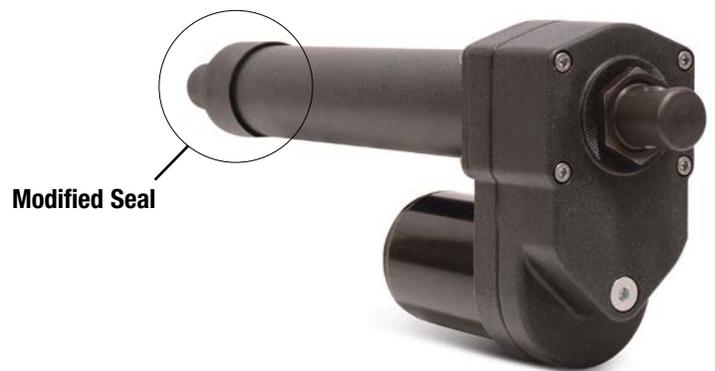
- A teaming of creative resources
- Joint understanding of our actuator capabilities and how they can be tailored to your application
- An understanding of the lowest cost solution to meet your actuator requirements
- Providing a complete solution that includes controls as required

**Warner Linear routinely provides actuators modified to meet specific customer application requirements**

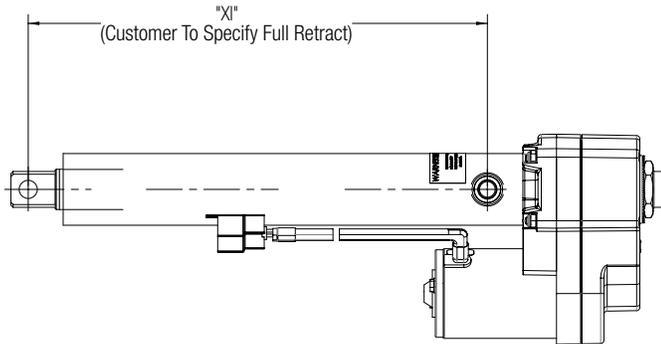
Some common versions of these are shown as our K2PL/K2XPL and K2JS/K2XJS families.

Additional common modifications are:

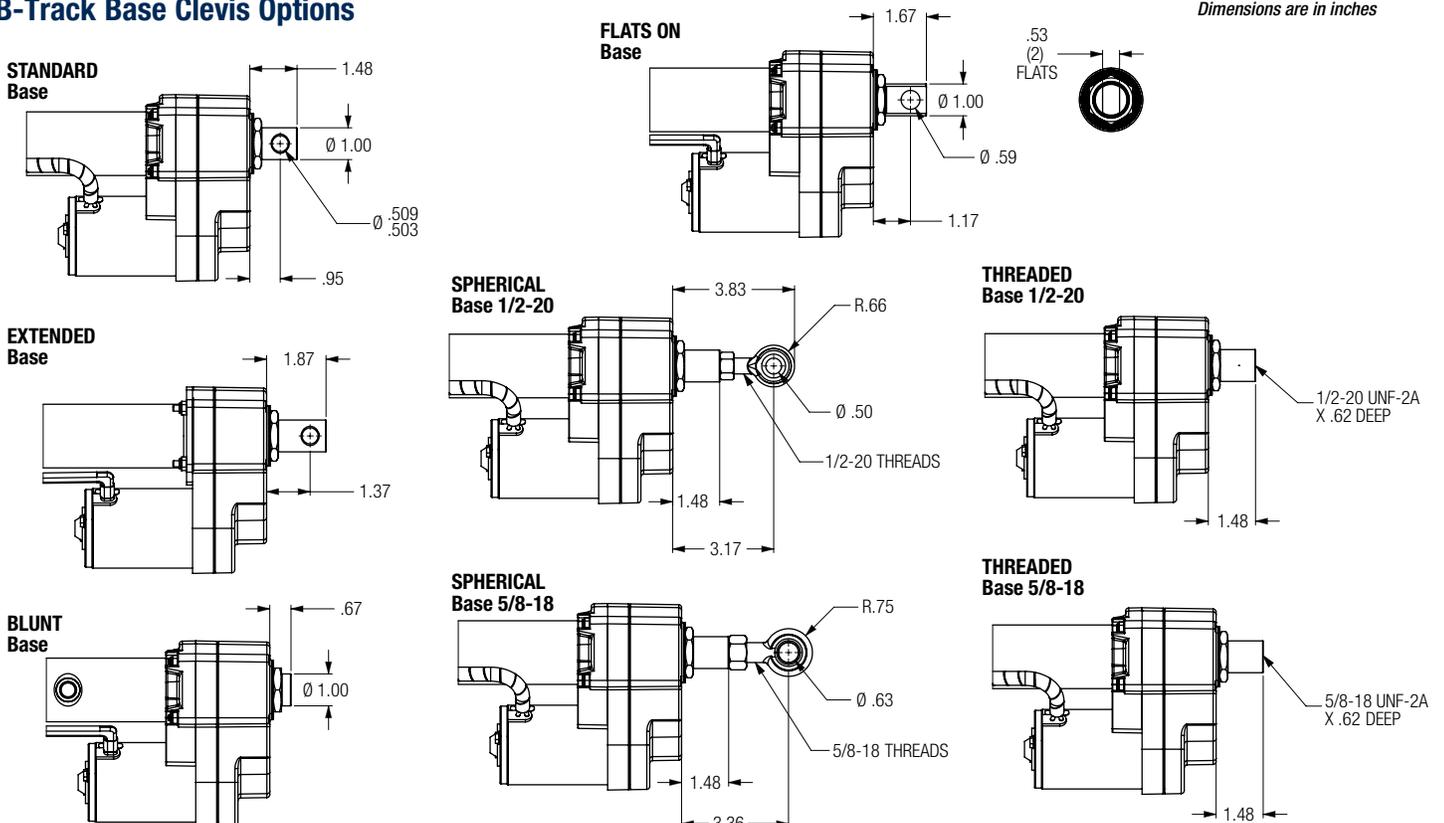
## Modified Seal design for expanded contamination protection



## Tube/Trunnion Mount



## B-Track Base Clevis Options



# B-Track K2<sub>PL</sub> / K2<sub>XPL</sub>

## Power Lift Actuator DC Motor – Acme or Ball Screw

Up to 2,200 lbs. (9786 N) Rated Load  
Up to 2.1 in. (53.34 mm)/sec. Travel Speed



B-Track Power Lift models are modified K2 or K2x actuators. Power Lift units utilize all the standard components and retain all the performance features of the K2 family, without the external cover tube. This allows the Power Lift actuator features to be integrated into a variety of customer designed structures, where a cover tube is not needed.

Extended gear box screws are provided allowing easy attachment to a customer frame. A straight through manual override option is available as shown above. Suggested for tension applications only. Consult factory for compression loading applications.

### Features

- **Protective coatings** and O-ring seals throughout
- **Efficient in-line load system**
- **Patented hybrid nut and screw** design, no brake needed in K2 model
- **Integral load holding brake** on K2x model
- **Ball detent overload clutch**
- **Stroke lengths** 4 to 24 inches (100 to 600 millimeters)
- **Load capacities** up to 2200 pounds (9786 N)
- **Speeds up to** 2.1 inches (53.34 millimeters)/sec. travel
- **Thermal overload** incorporated into the motor
- **Heavy wall construction**
- **Double ball bearing motors**
- **Heat treated gears**
- **Optional 90 vdc motor** for use with SBC-AC control
- **Custom mounting** options available

### Typical Applications

- Wheelchair and scooter lifts
- Traffic signs
- Beds and tables
- Light masts

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3,000 lbs. (13345 N) Static (in-line load)
- Refer to performance chart for load/current/speed capabilities
- Stroke Length Tolerance: +/- .06" (1.52 mm)
- Motor is protected with auto reset breaker inside motor housing (temperature/current/time dependent)
- Overload clutch setting: +25% over rated dynamic load
- Duty cycle is time/temperature/load dependent, suggested guidelines are:
  - 50% max on-time/50% off-time for loads up to 50% of capability
  - 25% max on-time/75% off-time for loads between 50%-80% of capability
  - 10% max on-time/90% off-time for loads between 80%-100% of capability
- (Load/stroke profiles will allow some adjustment variation from these guidelines.)

### Operating Environment

- Ambient temp range: -20° F to +150° F (-29° C to +65° C), -40° F to +176° F (-40° C to +80° C) Upon Request.
- Weather resistant enclosure & seals (250 hour salt spray, 500 hour for paint)
- Normal operating voltage: 10-16 vdc (Ratings are at 12 vdc Normal.)

### Control/Connections

- 14 gauge stranded lead wires-UL style 1230 w/PVC insulation Class F 105° C
- Lead wires abrasion protected with spiral covering
- Use momentary contact double pole/double throw switch in powering unit for extend/retract operation. (ON)-OFF-(ON) DPDT
- Connectors:
  - Packard 56 series or Delphi Weather-Pack
  - Packard 56 series with 56 series blades (#2984883 & #2962987)
  - Delphi Weather-Pack series (#121015792 & #12010973)

## Performance Graphs

See pages 29-30 for K2PL performance charts.  
See pages 37-38 for K2xPL performance charts.

## Dimensions

B-Track K2PL	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		4	102	6	152	8	203	10	254	12	305	14	356
	A	7.03	178.6	9.03	229.4	11.03	280.2	13.03	331.0	15.03	381.8	17.03	432.6

**Note:** Special lengths available

B-Track K2PL	Stroke	in.	mm								
		16	406	18	457	20	508	22	559	24	610
	A	19.03	483.4	21.03	534.2	23.03	585.0	25.03	635.8	27.03	686.6

**Note:** Special lengths available

B-Track K2xPL	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		4	102	6	152	8	203	10	254	12	305	14	356
	A	8.53	216.7	10.53	267.5	12.53	318.3	14.53	369.1	16.53	419.9	18.53	470.7

**Note:** Special lengths available

B-Track K2xPL	Stroke	in.	mm								
		16	406	18	457	20	508	22	559	24	610
	A	20.53	521.5	22.53	572.3	24.53	623.1	26.53	673.9	28.53	724.7

**Note:** Special lengths available



## Jack Stand Actuator DC Motor – Acme or Ball Screw



*Shown with optional  
switch box, direct drive  
manual override, and  
footpad.*



### Features

- **Protective coatings** and O-ring seals throughout
- **Efficient in-line ball screw system**
- **Integral load holding brake** on K2x model
- **Ball detent overload clutch**
- **Stroke lengths** 8 to 16 inches (200 to 400 millimeters)
- **Load capacities** up to 2,800 pounds (12455 N)
- **Speeds up to** 2.1 inches (53.34 millimeters)/sec. travel
- **Thermal overload** incorporated into the motor
- **Heavy wall construction**
- **Double ball bearing motors**
- **Heat treated gears**
- **Rugged extension rod** bearing support
- **Custom mounting** options available

### Typical Applications

- Trailer jack stands
- Trailer and vehicle outriggers
- Implement lifts
- Machine height adjustment
- Camper lifts
- Load Levelers

**Up to 2,800 lbs. (12455 N) Rated Load**  
**Up to 2.1 in. (53.34 mm)/sec. Travel Speed**

The B-Track Jack Stand actuator incorporates a large diameter extension rod providing the maximum offset load capability within the K2 family. The extension rod is slightly smaller than the cover tube and slides on Teflon<sup>®</sup> bearings within the cover tube. This feature makes the K2Js suitable for high-load, free-standing use.

A number of mounting options are available including trunnion mounts, or with standard flange plate (as shown). These units can be customized with an integral switch box, direct drive manual override, or pivoting footpad.

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3,000 lbs. (13345 N) Static (in-line load)
  - Refer to performance chart for load/current/speed capabilities
  - Stroke Length Tolerance: +/- .06" (1.52 mm)
  - Motor is protected with auto reset breaker inside motor housing (temperature/current/time dependent)
  - Overload clutch setting: +25% over rated dynamic load
  - Duty cycle is time/temperature/load dependent, suggested guidelines are:
    - 50% max on-time/50% off-time for loads up to 50% of capability
    - 25% max on-time/75% off-time for loads between 50%-80% of capability
    - 10% max on-time/90% off-time for loads between 80%-100% of capability
- (Load/stroke profiles will allow some adjustment variation from these guidelines.)

### Operating Environment

- Ambient temp range: -20° F to +150° F (-29° C to +65° C), -40° F to +176° F (-40° C to +80° C) Upon Request.
- Weather resistant enclosure & seals (IP 54 capable, 250 hour salt spray, 500 hour for paint)
- Normal operating voltage: 10-16 vdc (Ratings are at 12 vdc Normal.)

### Control/Connections

- 14 gauge stranded lead wires-UL style 1230 w/PVC insulation Class F 105° C
- Lead wires abrasion protected with spiral covering
- Use momentary contact double pole/double throw switch in powering unit for extend/retract operation. (ON)-OFF-(ON) DPDT
- Connectors:
  - Packard 56 series or Delphi Weather-Pack
  - Packard 56 series with 56 series blades (#2984883 & #2962987)
  - Delphi Weather-Pack series (#121015792 & #12010973)

# B-Track K2Js / K2xJs

## Performance Graphs

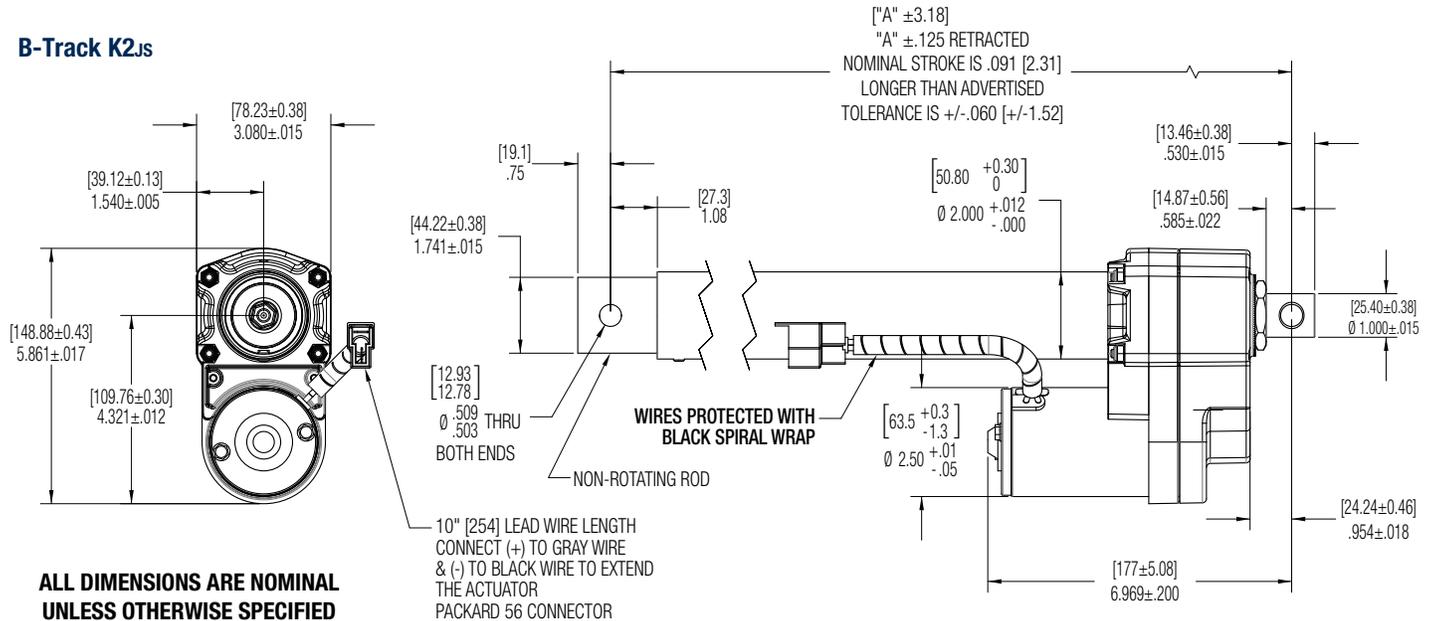
See page 29-30 for K2Js performance charts.  
See page 37-38 for K2xJs performance charts.

## Dimensions

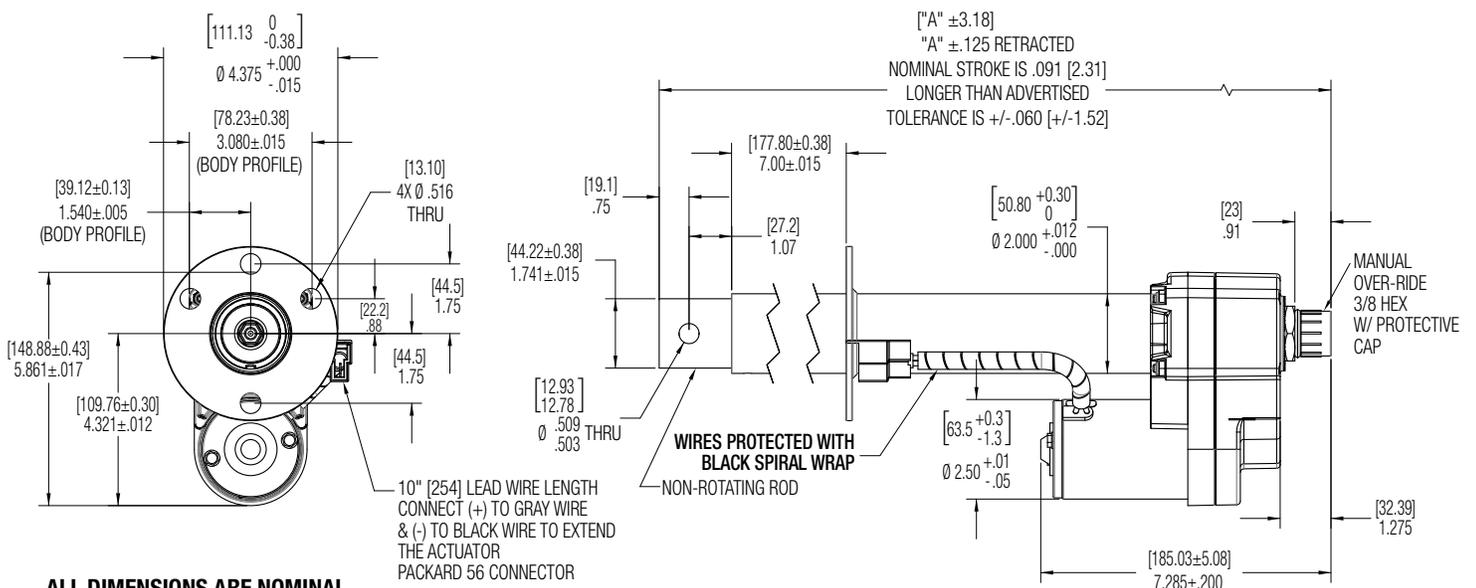
B-TRACK K2Js/ K2xJs	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		A	20.98	532.9	22.98	583.7	24.98	634.5	26.98	685.3	28.98

Note: Special lengths available

### B-Track K2Js



### B-Track K2xJs



## Rotary Actuator DC Motor



Shown with extended gear box screws for ease of attachment.



Optional Configurations



### Features

- **Protective coatings** and O-ring seals throughout
- **Efficient in-line load system**
- **Ball detent overload clutch**
- **Speeds up to 850 RPM**
- **Thermal overload** incorporated into the motor
- **Heavy wall construction**
- **Double ball bearing motors**
- **Heat treated gears**
- **Rugged output** bearing support
- **Customized mounting** configurations available
- **Optional 24 vdc motor** available to provide more speed selections

### Typical Applications

- Salt/seed spreaders
- Scooter lift mechanisms
- Spout rotation
- Turntables
- Cable winch

### Up to 140 in.-lb. (16 Nm) Torque Output Speeds from 250 to 850 RPM

K2RA rotary actuators are motor driven gear boxes and use the base drive design and components of the K2 linear actuator. K2RA models incorporate all of the features of the K2 model providing excellent weatherproofing for outdoor applications. The same long-life motors, hardened gears, corrosion protection, and lubrication are utilized. Several output shaft and mounting configurations are available with the standard configuration shown above.

#### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3,000 lbs. (13345 N) Static (in-line load)
- Refer to performance chart for current/speed capabilities
- Motor is protected with auto reset breaker inside motor housing (temperature/current/time dependent)
- Overload clutch setting: match customer requirements
- Duty cycle is time/temperature/load dependent, suggested guidelines are:
  - 50% max on-time/50% off-time for loads up to 50% of capability
  - 25% max on-time/75% off-time for loads between 50%-80% of capability
  - 10% max on-time/90% off-time for loads between 80%-100% of capability

(Load/RPM profiles will allow some adjustment variation from these guidelines.)

#### Operating Environment

- Ambient temp range: -20° F to +150° F (-29° C to +65° C), -40° F to +176° F (-40° C to +80° C) Upon Request.
- Weather resistant enclosure & seals (IP 65 capable, 250 hour salt spray, 500 hour for paint)
- Normal operating voltage: 12, 24, 36, 48 vdc (Ratings are at 12 vdc Normal.)

#### Control/Connections

- 14 gauge stranded lead wires - SAE J1128 SXL cross linked polyethylene insulation Class F 257° F (125° C)
- Lead wires abrasion protected with spiral covering
- Use momentary contact double pole/double throw switch in powering unit. (ON)-OFF-(ON) DPDT
- Connectors:
  - Packard 56 series or Delphi Weather-Pack
  - Packard 56 series with 56 series blades (#2984883 & #2962987)
  - Delphi Weather-Pack series (#121015792 & #12010973)

# B-Track K2RA

## Performance Graphs Imperial Measurements\*

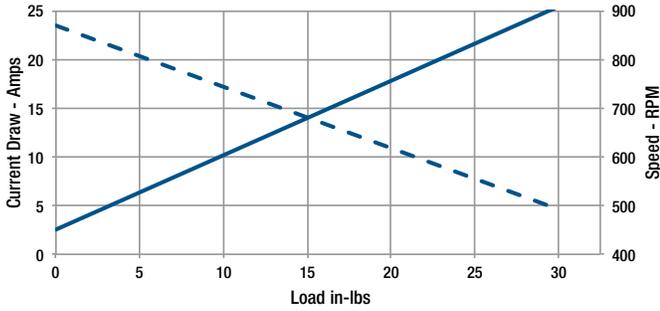
\*Performance Chart Measurements are Nominal



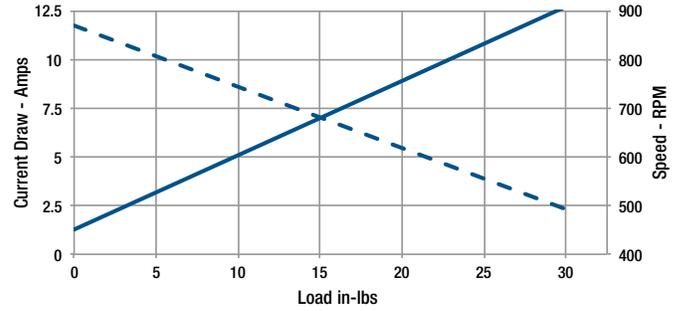
### Load Capacity 30 in-lbs.

For Metric Measurements, see page 53.

**K2RAG05-12VDC**



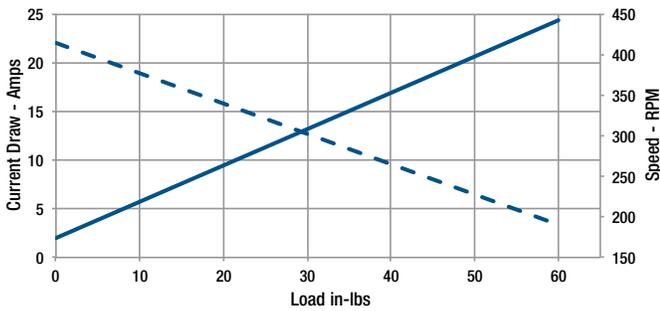
**K2RAG05-24VDC**



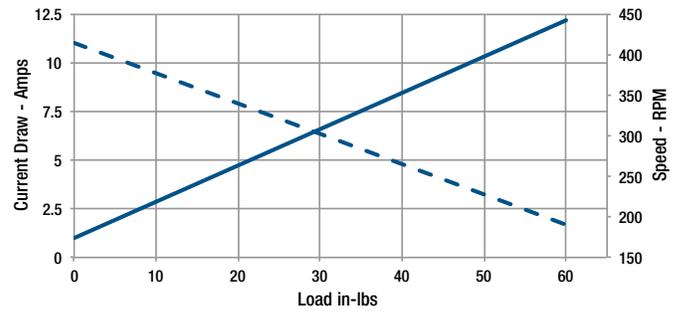
### Load Capacity 60 in-lbs.

For Metric Measurements, see page 53.

**K2RAG10-12VDC**



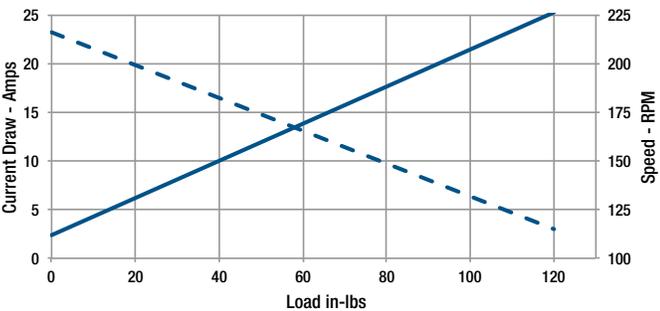
**K2RAG10-24VDC**



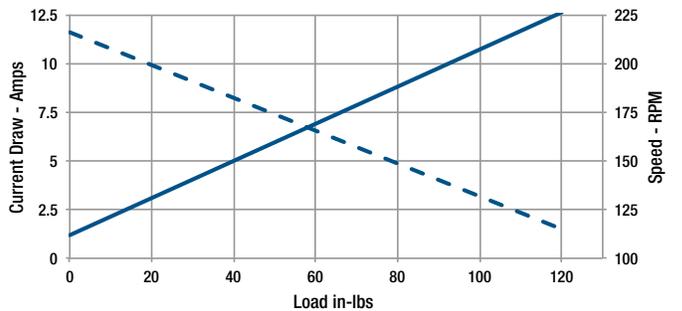
### Load Capacity 120 in-lbs.

For Metric Measurements, see page 53.

**K2RAG20-12VDC**



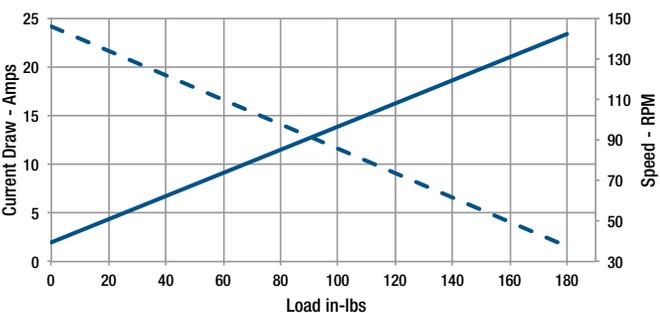
**K2RAG20-24VDC**



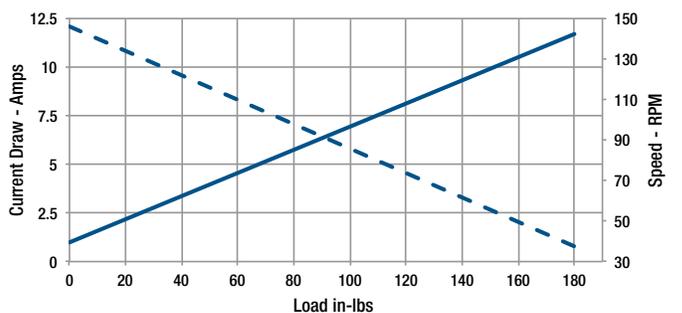
### Load Capacity 180 in-lbs.

For Metric Measurements, see page 53.

**K2RAG30-12VDC**



**K2RAG30-24VDC**





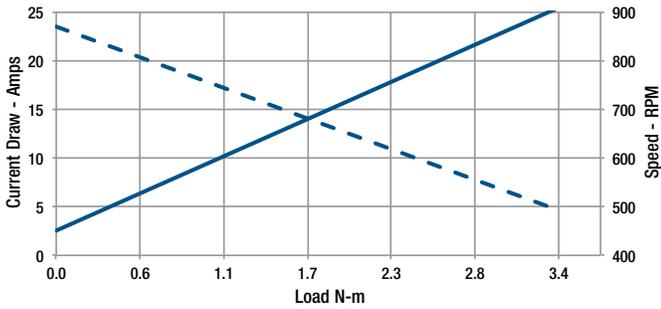
## Performance Graphs Metric Measurements\*

\*Performance Chart Measurements are Nominal

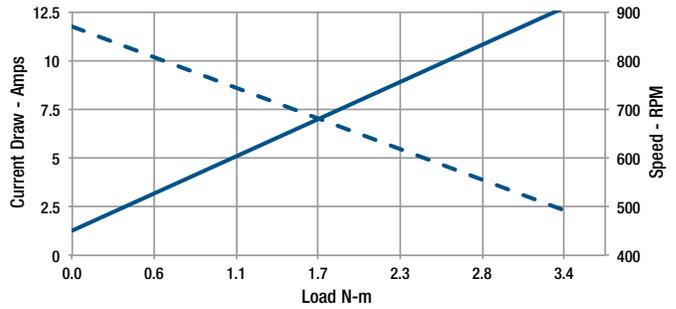
*For Imperial Measurements, see page 52.*

### Load Capacity 3.4 N-m

**K2RAG05-12VDC**

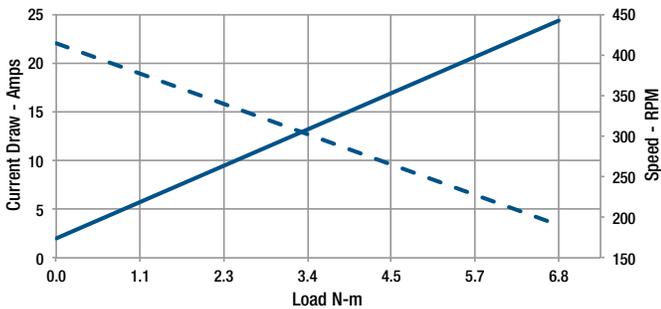


**K2RAG05-24VDC**

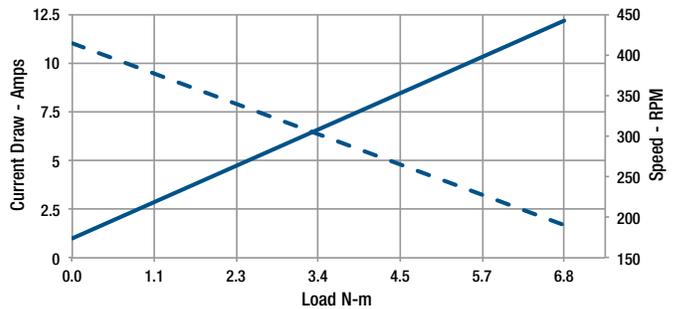


### Load Capacity 6.8 N-m

**K2RAG10-12VDC**

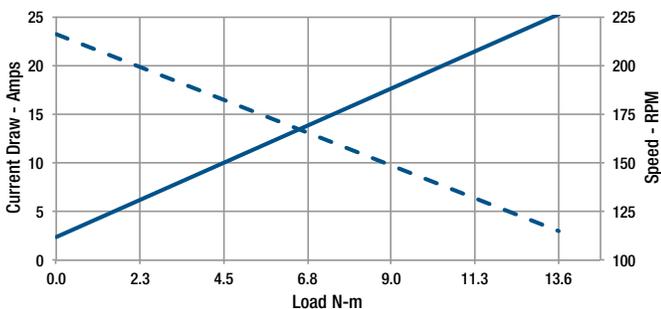


**K2RAG10-24VDC**

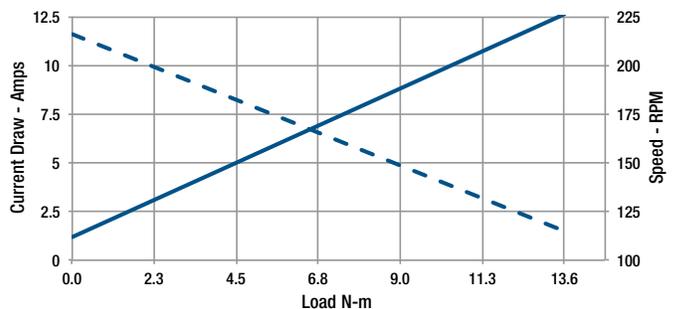


### Load Capacity 13.6 N-m

**K2RAG20-12VDC**

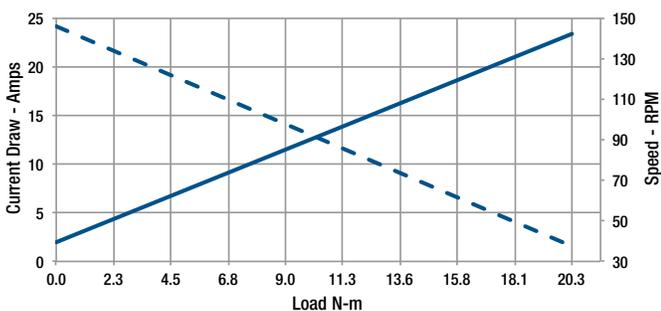


**K2RAG20-24VDC**

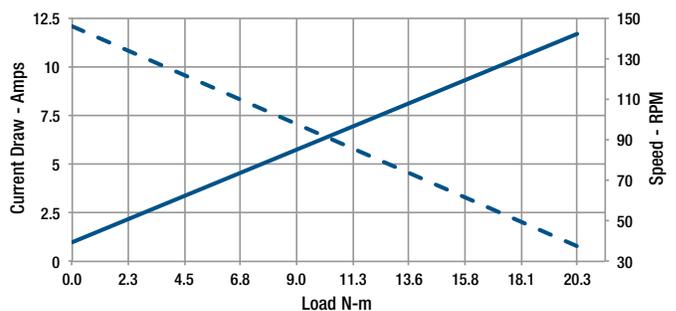


### Load Capacity 20.3 N-m

**K2RAG30-12VDC**



**K2RAG30-24VDC**



# B-Track K2RA

## Dimensions

