

ALTRA INDUSTRIAL MOTION

# Electric Actuators and Actuator Controls



 **Warner**<sup>®</sup>  
Linear

An Altra Industrial Motion Company



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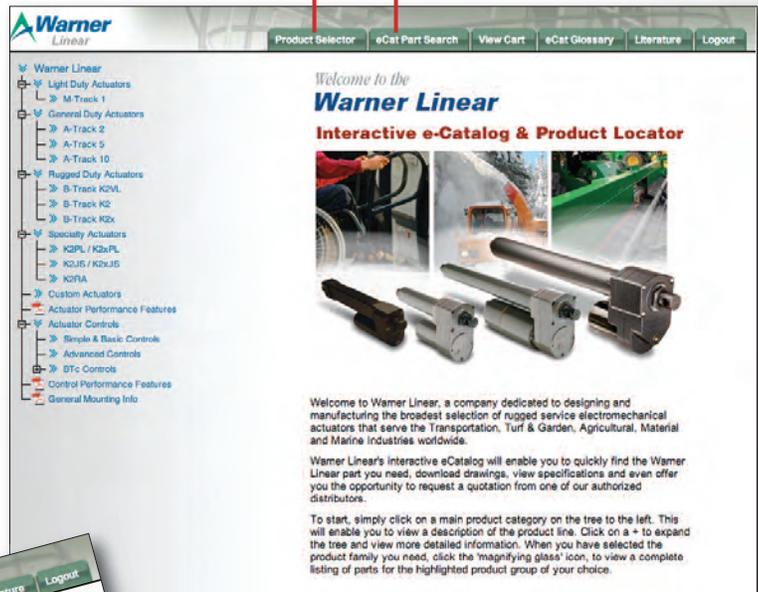
# eCatalog at warnerlinear.com

## Selecting the right product for your application is fast and easy with these useful features...

- Utilize specification filters to instantly narrow your search
- Compare specifications for multiple models (side-by-side)
- View individual specification pages for additional information
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Refine your search criteria with specification filters including:

- Gear Ratio
- Motor Voltage
- Motor Type
- Nut Type
- Stroke Length
- Base Fitting Alignment

**Products designed and manufactured for reliable, long-lasting performance**

**Quality Processes**

Warner Linear is dedicated to designing and manufacturing "Best-in-class" electromechanical actuators and controls.

We subscribe to a standard of quality derived from the Altra Business System (ABS), a series of progressive manufacturing methods designed to continuously improve production within our flexible work cell environment.

Our quality starts in product design. It is demonstrated in the attention given to design details and the refinement of prototypes. It is apparent in our fast response to requests for quotes, and our strict adherence to deadlines in every stage of the work flow.

**Design and Testing**

Our application engineers and design specialists work closely with our customers to define both lab and field testing requirements.

Our solid model design capabilities, computer assisted testing, and manufacturing floor pre-shipment cycle test, all provide assurance that your Warner Linear actuators will meet or exceed your expectations (for application and technical service call 1-800-825-9050).

Our linear actuator testing capabilities include dual load life cycling stands, low and high pressure wash down test tanks, lift test stands and thermal shock submersion. Our test service providers add material analysis, noise and vibration evaluation capabilities.

**Custom 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.





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## Linear actuators to meet your specific requirements

Warner Linear offers a full line of standard electric actuators, each specifically designed to meet the needs of light-duty, general-duty, or rugged-duty applications. All are engineered for maintenance-free, long-life service, providing maximum value for our customers.

### QUICK SELECTION GUIDE

#### Light Duty



##### M-Track 1

Compact, completely self-contained and sealed to allow for use in small spaces without sacrificing power or capability.

Drive Type:  
Acme Screw

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)  
50 @ 0.80 (22@20)  
100 @ 0.45 (44@11)  
165 @ 0.25 (75@6)

Stand. Stroke Length in. (mm)  
2, 4, 6, 8, 10, 12  
(50, 100, 150, 200, 254, 300)

Input Voltage (vdc):  
12, 24

##### Typical Applications:

Throttle Control  
Air Vent Opening  
Remote Window Operation  
Remote Mirror Positioning  
Gate Opening  
Shutter Control

Pg 8-9

#### General Duty



##### S-Track

Intended for for general duty applications with need for controllability and quieter operation.

Drive Type:  
Acme Screw

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)  
125 @ 1.0 (56@25)  
175 @ 0.75 (78@18)  
200 @ 0.50 (90@12)  
225 @ 0.62 (101@15)  
300 @ 0.33 (135@8)  
400 @ 0.25 (157@6)

Stand. Stroke Length in. (mm)  
2 to 12 in 2" increments  
(50 to 300 in 50mm increments)

Input Voltage (vdc):  
12, 24

##### Typical Applications:

Indoor Office Equipment  
Medical  
Deck Lifts  
Gate Openers

Pg 12-13



##### B-Track K2vl

Intended for severe service requirements and loads up to 600 lbs. (270kg) Lowest priced model in the B-Track family.

Drive Type:  
Hybrid Acme

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)  
200 @ 2.0 (90@50)  
300 @ 1.0 (135@25)  
600 @ 0.5 (270@12)

Stand. Stroke Length in. (mm)  
2 to 12 in 2" increments  
(50 to 300 in 50mm increments)

Input Voltage (vdc):  
12, 24

##### Typical Applications:

Fertilizer Gate Control  
Mower Decks  
Gate Openers  
Scooter & Cycle Lifts  
Pull Behind Implement Lifts

Pg 16-18



## Actuator Controls

### Simple extend/retract switch boxes

- SBC-DC
- SBC-AC

### Basic controls and digital electronic options

- Adjustable stroke limits
- Fixed electronic stroke limits – ESL
- QS Quick Stop bi-directional current limit control
- Position feedback options – potentiometer or digital outputs

### Microprocessor based controls (available for special needs)

- Signal Follower Function
- Programming pendant
- Adjustable position and current limit options
- Remote mounting capable



## Rugged Duty



### B-Track K2

Uses a patented straight line load transfer offering high load capability in a small package size. Bronze or Delrin® nut options high impact load applications up to 1,500 lbs. (680kg).

Drive Type:  
Hybrid Acme

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)

300 @ 2.0	(135 @ 50)
600 @ 1.0	(270 @ 25)
1200 @ 0.5	(540 @ 12)
1500 @ 0.35	(680 @ 9)

Stand. Stroke Length in. (mm)  
2 to 24 in 2" increments (50 to 600 in 50mm increments)

Input Voltage (vdc):  
12, 24, 48, 90

#### Typical Applications:

Residential Mower Decks  
Gate & Valve Operation  
Snow Blowers  
Spouts & Chutes  
Engine Lifts  
Tables  
Wagon Lifts  
Combine Concaves

Pg 19-21



### B-Track K2x

Completely sealed, designed for tough, high load applications. Able to perform in harsh environments providing years of trouble-free service.

Drive Type:  
Ball Screw & Ball Nut

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)

600 @ 2.0	(270 @ 50)
1200 @ 1.0	(540 @ 25)
2200 @ 0.5	(1000 @ 12)
2800 @ 0.25	(1270 @ 6)

Stand. Stroke Length in. (mm)  
2 to 24 in 2" increments (50 to 600 in 50mm increments)

Input Voltage (vdc):  
12, 24, 48, 90

#### Typical Applications:

Paving Outriggers  
Commercial Mower Decks  
Spray Booms  
ATV Dump Box Lifts  
Boat Engine Lifts  
Hydraulic Cylinder Replacement  
Construction Equipment

Pg 26-28



### B-Track K2Ac

Uses a patented straight line load transfer offering high load capability in a small package size. Bronze or Delrin® nut options for high impact load applications up to 1,500 lbs. (680kg).

Drive Type:  
Hybrid Acme

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)

500 @ 1.0	(225 @ 25)
750 @ 0.50	(340 @ 12)
1100 @ 0.33	(500 @ 0.4)

Stand. Stroke Length in. (mm)  
4 to 24 in 2" increments (100 to 600 in 50mm increments)

Input Voltage (vac):  
115, 230

#### Typical Applications:

Engine Lifts  
Tables  
Indoor Applications  
Machine Tools  
Egg Rotation

Pg 22-25



### B-Track K2xAc

Completely sealed, designed for tough, high load applications. Able to perform in harsh environments providing years of trouble-free service.

Drive Type:  
Ball Screw & Ball Nut

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)

500 @ 2.0	(225 @ 50)
1000 @ 1.0	(445 @ 25)
1500 @ 0.5	(680 @ 12)
2200 @ 0.33	(1000 @ 8)

Stand. Stroke Length in. (mm)  
4 to 24 in 2" increments (100 to 600 in 50mm increments)

Input Voltage (vac):  
115, 230

#### Typical Applications:

Indoor Applications  
Machine Tools  
HVAC  
Hood Lifts  
Tables

Pg 29-32

# Performance Features

**Warner Linear Actuators are available for a wide variety of applications.**

Golf Cart Height Adjust

Mower Blade Lift

Solar Panel Adjust

55 Gallon Drum Lift

Fire Engine Valve Adjust

Automated Dumpster

Scissor Lift Table

Round Baler Cover Lift

Walk Behind Floor Washer

Bulldozer Engine Cover

Air Foil Adjust

Construction Sign Positioning

Forage Harvester Spout Positioning

Combine Spout Positioning

Adjustable Height Work Table

Conveyor Lateral Guide Positioning

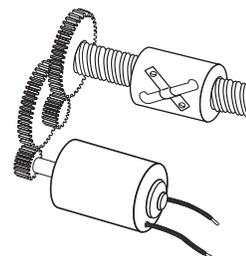
Street Sweeper Bristle Lift

RV/Bus Compartment Extension

## Dependable Operation

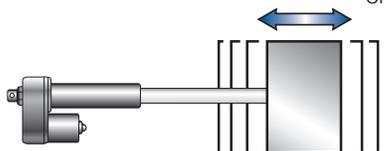
### Compact design

A Warner Linear actuator with a two inch stroke can provide up to 2800 pounds (1270 kilograms) of force capacity in a compact package.



### Maintenance-free

Units are lubricated for life during assembly. There are no adjustments or maintenance required for units after they have left the factory. Consistent performance is provided for the entire life of the actuator.



### Equal capacity in both directions

Warner Linear actuators can push-and-pull or lift-and-lower loads ranging from one pound to over 2800 pounds (1270 kilograms) up to 24 inches (600 millimeters) with equal capacity in both directions of travel.

### Efficient operation

Warner Linear actuators consist of an electric motor combined with a high efficiency gear train and lead screw. This direct conversion of electrical to mechanical energy results in effective, economic linear movement. Units are completely self contained and require minimal installation hardware or wiring.

### Superb load holding power

Warner Linear actuators operate loads in both tension and compression equally well. They will hold a load stationary without power in either direction. Static load holding capability will always exceed the dynamic load moving capability.

### Advantages

- No hydraulic pumps, hoses, valves, or leaks
- Holds load when power is off
- Overload clutches prevent damage due to excess weight
- Simple to install and use
- Easily adaptable for position control
- Integrated sensors provide electrical position signals



# Performance Features

## Rugged and reliable

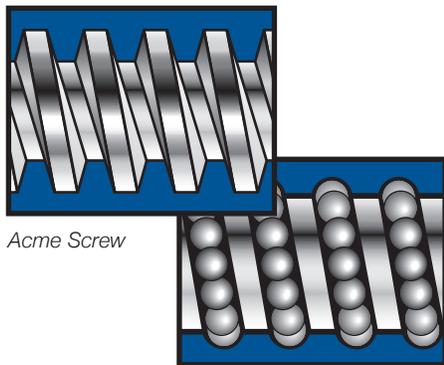
Warner Linear actuators incorporate high strength, high quality components and are designed to assure trouble-free service. Rugged spur gearing, industrial quality synthetic lubricants and high performance motors combine to provide maximum capability and value for the end user. Units are gasketed and sealed for operation in industrial and mobile outdoor applications. Thermal overload switches are included for motor protection; and high performance corrosion protection features are standard.

## Energy efficient

Electric control provides clean, smooth linear motion without fluids, plumbing or other expensive components. Warner Linear actuators require power only when in motion. No power is required to hold loads stationary.

## Lead screw drive systems

Warner Linear actuators use either acme, hybrid rolled, or highly efficient ball bearing screws. Models which use acme or hybrid rolled screws with bronze or plastic nuts will not backdrive when power is off. A bi-directional load holding brake is a standard feature on all ball bearing units and holds loads in position when power is off.



Acme Screw

Ball Screw

## Overload protection

Motors incorporate thermal switches in their windings to shut the actuator motor off in case of overheating or high overcurrent. Reset is automatic after the motor has cooled. A standard overload clutch detents if the load is excessive or reaches end of stroke.

*Note: Clutch is not incorporated in M-Track and S-Track due to size constraints.*

## Versatile

With their compact size, Warner Linear actuators can be located in confined areas, and move loads from 0 to 2800 pounds (1270 kilograms). Their static load holding ability ensures that a load will remain in position when power is turned off. Gearing ratios create speeds that range from 0.3 to over 2 inches (7 to 50 millimeters) per second. Standard models are mounted using two parallel pins and require only simple wiring and switches. They are self-contained, lubricated for life, and designed for use where rugged and durable performance is required for almost any lift-and-lower or push-and-pull application.

## Available customized features

- Direct drive manual override
- Mounting and end fitting variations
- DC Motor voltage variations
- AC and DC motor options
- Motor lead wire connectors
- End of stroke limit switches – fixed or adjustable
- Position feedback outputs (0-10vdc scaled) – potentiometer and digital

## Also available

- Basic switch box controls
- Integrated electronic position controls

# M-Track Features

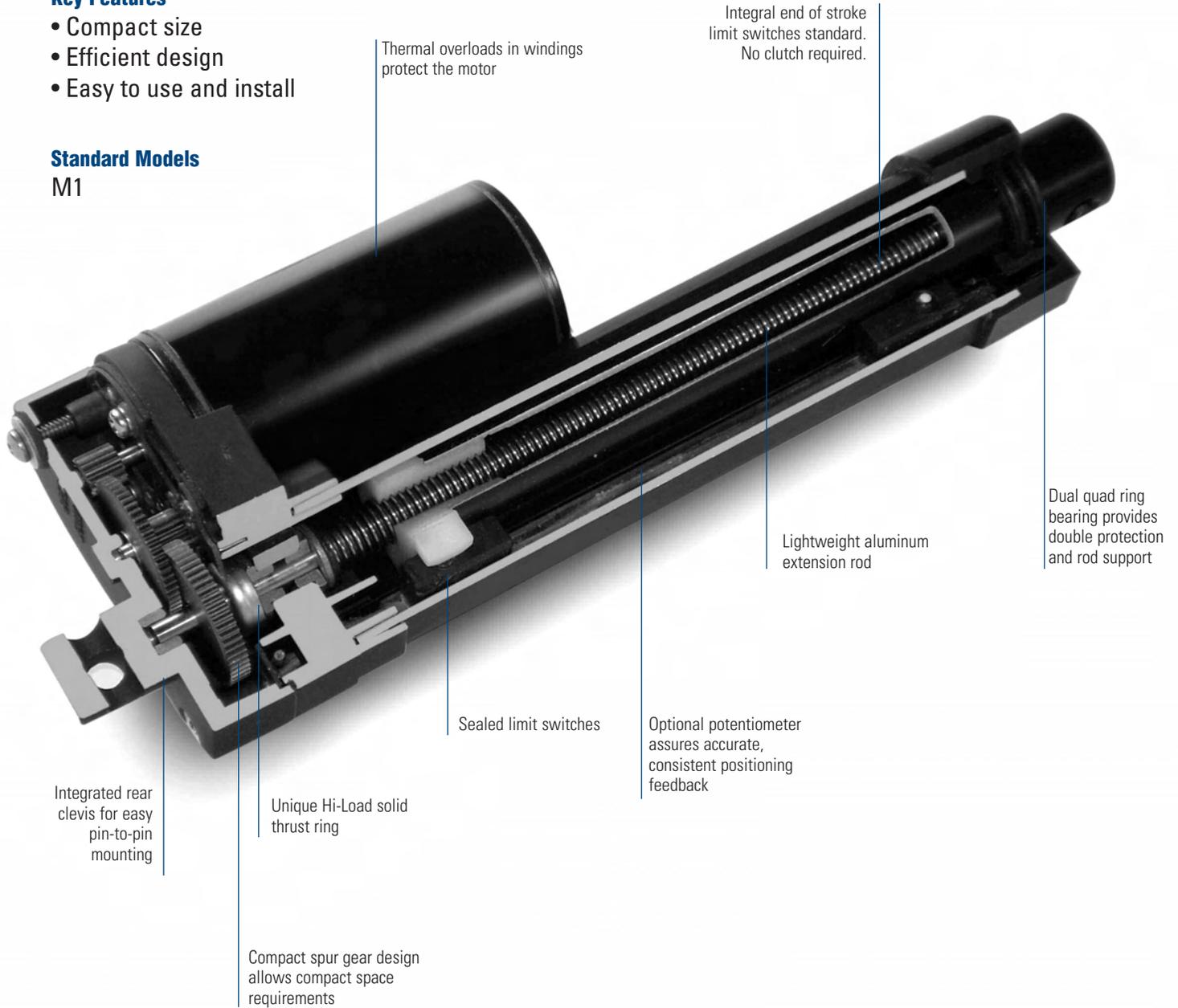
## Light Duty Actuators

### Key Features

- Compact size
- Efficient design
- Easy to use and install

### Standard Models

M1



# M-Track Configurator

## How To Select

### Step 1 – Determine Load and Stroke length requirements

Use the Quick Selection guide to identify the model that will provide the load capacity and stroke length needed for your application.

### Step 2 – Identify motor type and voltage

Select DC motor and motor voltage.

### Step 3 – Confirm Speed and Current draw requirements

Using the charts provided, confirm that unit speed and current draw is appropriate for the intended use.

### Step 4 – Confirm the application Duty Cycle

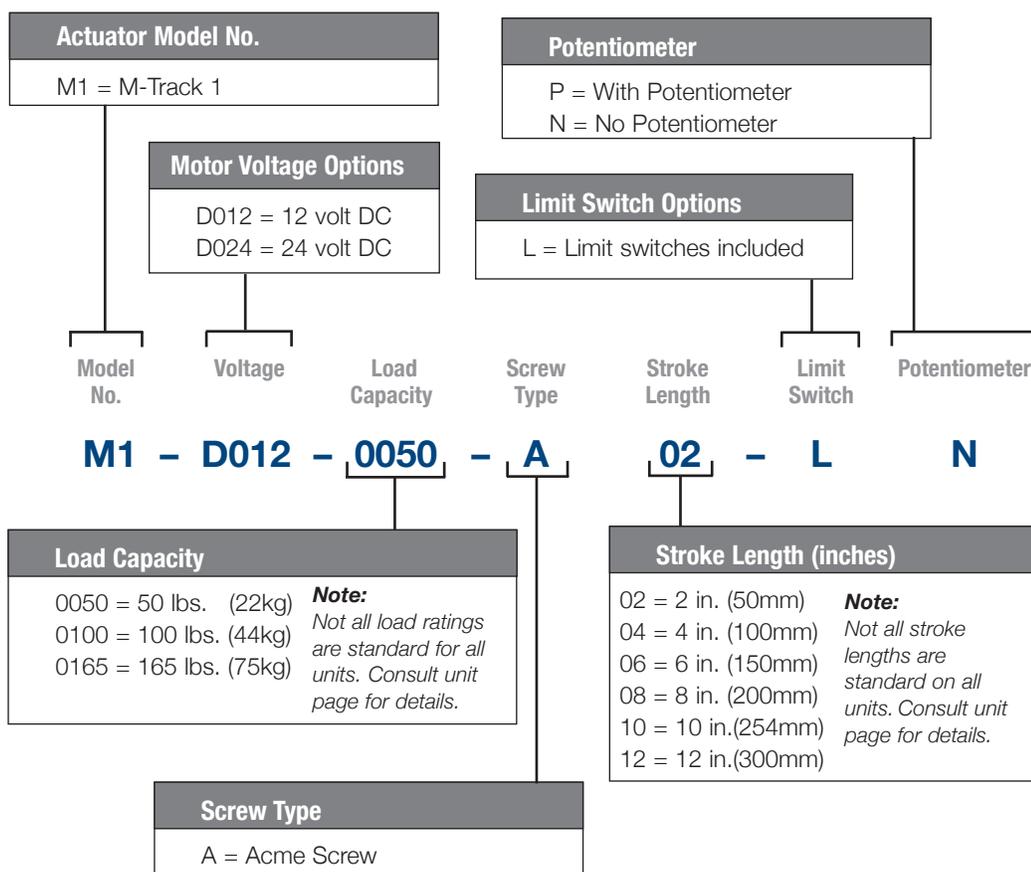
At full load capacity, actuators have a 25% duty cycle. Duty cycle is the amount of 'on-time' compared to cooling time. A unit that runs for 15 seconds should be off for 45 seconds.

### Important Unit Restrictions

Side loading and shock loads must be considered in actuator applications. Side loading and cantilevered mounting should be eliminated through proper machine design. Side loading will dramatically reduce unit life. While actuators can withstand limited shock loads, it is recommended that shock loading be avoided wherever possible. (See page 57)

### Step 5 – Unit Options

M-Track units include end-of-travel limit switches as a standard feature. For positional feedback, a 12K linear membrane potentiometer can be factory installed. The changing potentiometer value provides unit movement feedback for units that are not visible to the machine operator.



# M-Track 1

## DC Motor Acme Screw

Up to 165 lb. (75kg) Rated Load

Up to 1.75 in. (44.45mm)/sec. Travel Speed



M-Track 1 compact units are completely self-contained and sealed to allow use in small spaces without sacrificing power or capability. The load and length capabilities provide solutions for a diverse range of intermittent duty applications.

Functionally, M-Track 1 actuators are easily interchanged with comparable size hydraulic or pneumatic cylinders on intermittent duty applications. The actuator provides consistent, repeatable performance even for applications with operating conditions including temperature extremes, high humidity, or significant dust.

### Features

- An Acme Screw drive delivers up to 165 pounds (75 kilograms) of force at a minimum extension rate of 0.25 inches (6.35 millimeters) per second
- The aluminum zinc alloy housing resists corrosion and provides protection from dirt, dust and humidity
- The M-Track 1 has a temperature operating range of  $-15^{\circ}$  to  $+150^{\circ}$  F ( $-26^{\circ}$  to  $+65^{\circ}$ C)
- Standard stroke lengths of 2, 4, 6, 8, 10, 12 inches (50, 100, 150, 200, 254, 300 millimeters) are available
- Internal limit switches automatically shut off the unit at end of stroke
- Optional potentiometer can provide positional location feedback
- IP65 capable on request
- Rod is non rotating during operation, can be rotated for mounting purposes

### Typical Applications

Light load and short distance applications such as:

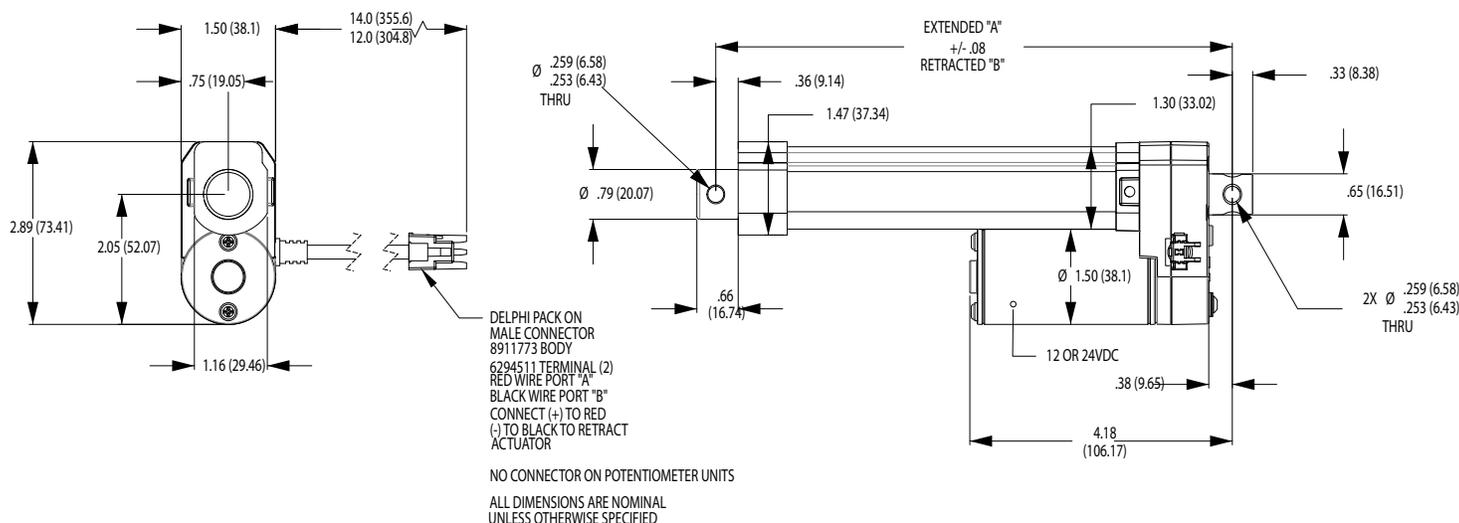
- Valve and vent adjustments
- Light weight tilt or lift positioning
- Vise and clamp operations

### Specifications

<b>Load Capacity</b>	50 lbs. (22kg)	100 lbs. (44kg)	165 lbs. (75kg)
<b>Speed at Full Load</b>	0.85 in. (21mm)/sec	0.45 in. (11mm)/sec	0.25 in. (6mm)/sec
<b>Input Voltage</b>	12 or 24 volt DC for all models		
<b>Static Load Capacity</b>	300 lbs. (135kg) for all models		
<b>Stroke Length</b>	2, 4, 6, 8, 10 and 12 in. (50, 100, 150, 200, 254, 300mm) for all models		
<b>Clevis Ends</b>	.25 in. (6.4mm) diameter		
<b>Duty Cycle</b>	25% for all models		
<b>Operation Temperature Range</b>	$-15^{\circ}$ F to $+150^{\circ}$ F ( $-26^{\circ}$ to $+65^{\circ}$ C) for all models		
<b>Limit Switch</b>	Fixed end of stroke limit switches standard for all units		
<b>Potentiometer</b>	Linear membrane potentiometer optional on all units		

# M-Track 1

Dimensions												
Stroke Length	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
	2	50	4	100	6	150	8	200	10	254	12	300
Retracted Length (without POT sensor)	6.22	158	8.23	209	10.24	260	12.24	311	14.25	362	16.26	413
Retracted Length (with POT sensor)	7.55	192	9.57	243	11.57	294	13.58	345	N/A	N/A	N/A	N/A



- Stroke and its tolerance are based on a unit with no attached load operating at rated voltage +/- .5VDC, 70°F controlled temperature environment. Note normal wear, temperature changes and load variations all affect the stroke tolerance. If stroke tolerance is critical it is advisable that the selected unit be evaluated for performance in the specific application.
- The retract pin to pin dimension and its tolerance are based on a unit with no attached load operating at rated voltage +/- .5VDC, 70°F controlled temperature environment. Note normal unit wear, temperature changes and load variations all affect the stroke tolerance. If the retract pin to pin dimension is critical it is advisable that the selected unit be evaluated for performance in the specific application.
- Rotation of the extension tube is allowed up to one full turn to aid mounting. Rotate rod clockwise until it is fully seated in the unit. Rotate counterclockwise no more than one full turn to align clevis pins.

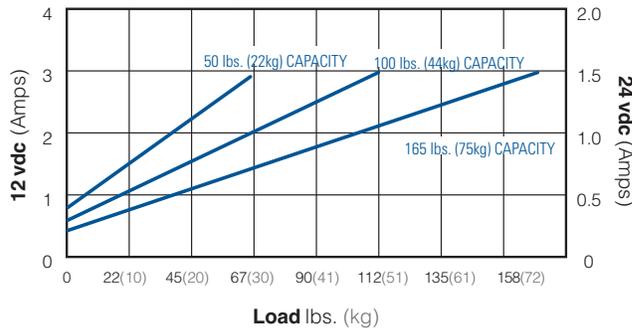
Mounting points in the application must allow the actuator to reach full-extend and full-retract to ensure the internal limit switches are activated. If this is not possible another method for shutting off the actuator must be employed.

- If the actuator encounters an obstruction at mid-stroke and is not allowed to reach the internal limit switches the actuator will stall. An internal thermal circuit breaker designed to protect the motor from damage during stalling and/or overheating due to exceeding duty cycle. If tripped it will self reset after a short period of time. The thermal is rated to protect the motor in the event of a stall condition. It is not designed to protect any other device in the circuit.
- Warner Linear recommends an externally mounted fuse of 6 AMP's max for 12VDC and 3 AMP's max for 24VDC circuit protection. Anything connected to the actuator must be sized to withstand the actuator's power consumption or independently isolated from the circuit.

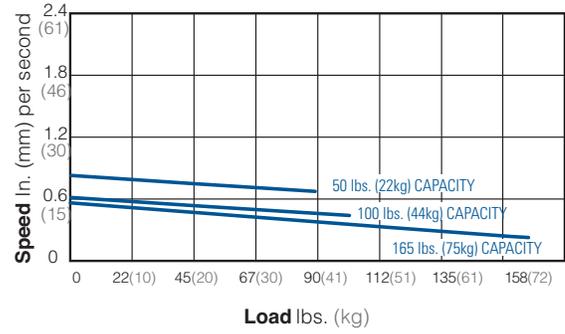
# M-Track 1

## Performance Curves Imperial

### Current vs Load



### Speed vs Load



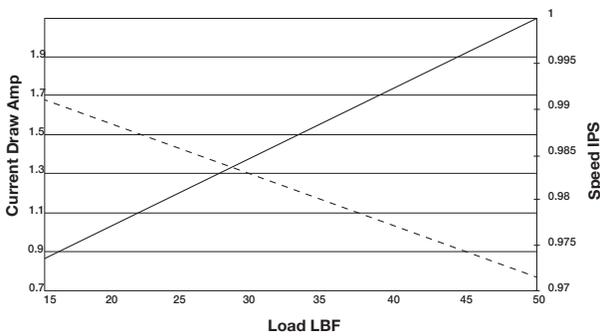
**Current Draw** —————  
**Speed** - - - - -



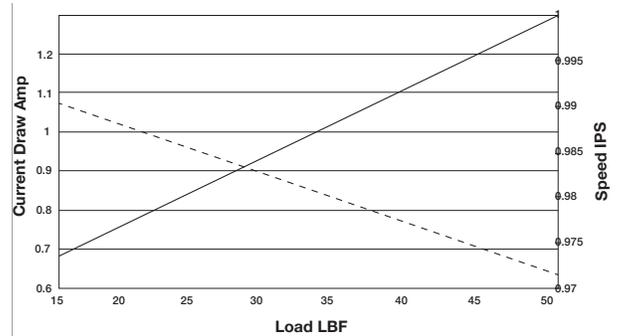
# M-Track 1

## Performance Graphs

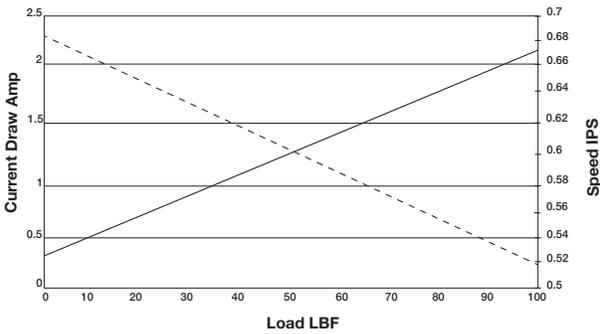
### M1-D012-0050



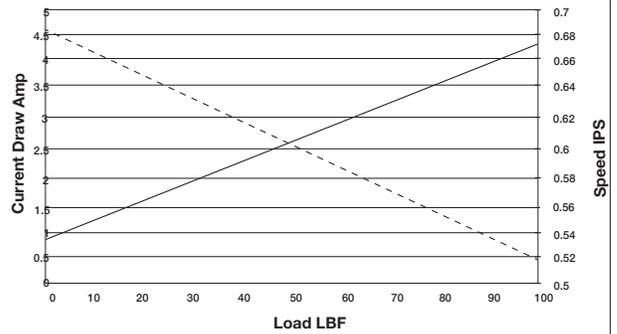
### M1-D024-0050



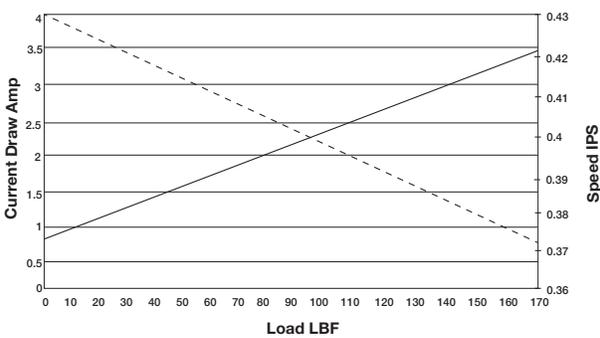
### M1-D012-0100



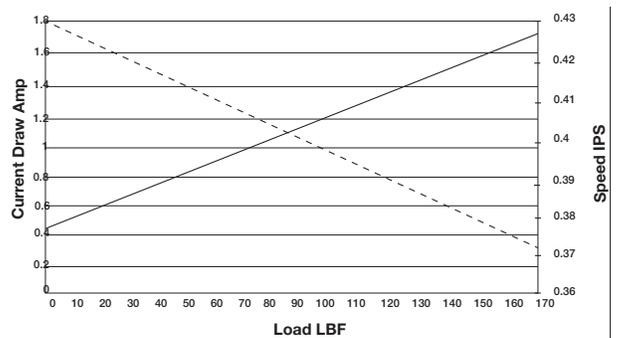
### M1-D024-0100



### M1-D012-0165



### M1-D024-0165



— Linear (Speed in/sec)  
 - - - Linear (Amps 12V DC)

# S-Track

## Acme Screw

Up to 400 lb. (182kg) Rated Load

Up to 1 in. (25.4mm)/sec. Travel Speed

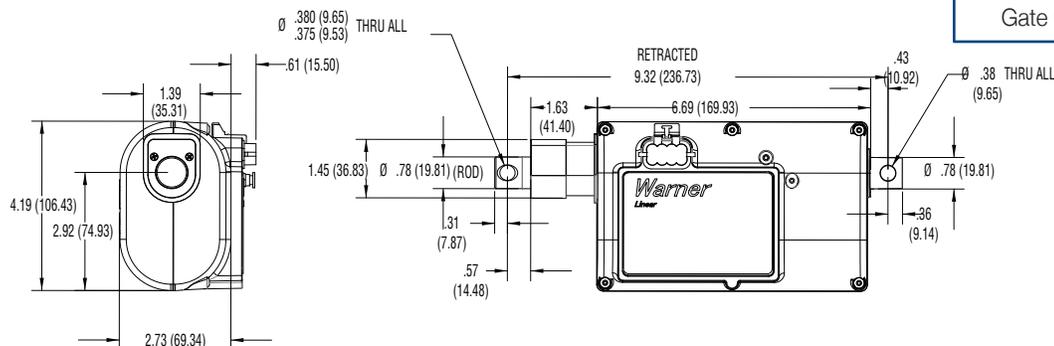


New S-Track electric actuators are designed for better control and quieter operation in general duty applications including medical, industrial, turf & garden and recreational vehicles.

### S-Track Basic Control

The control allows for 12 or 24 VDC switched power operation of the S-Track actuator by turning power off to the motor automatically when the internal end limits are reached.

### Dimensions



### Features

- The end limits are factory set to the maximum allowable stroke of the actuator
- The current and temperature of the motor are monitored at all times and power will be removed from the motor when exceeded to protect components from failure
- Through the 8-pin molded connector there are several standard input and output features to monitor the operation of the actuator
- There is a 0-10 VDC position output that follows linearly with the position of the actuator and is offered in many different voltages and currents
- There is also end of stroke limit outputs which indicate when the actuator reaches the fully retracted and extended positions
- These outputs can be set at the factory as, active low or active high independently and are good for up to 1 amp
- To maintain all of these output signals when switched power is off, a live power feature is available

### Typical Applications

- Indoor Office Equipment
- Medical
- Deck Lifts
- Gate Openers

### Specifications

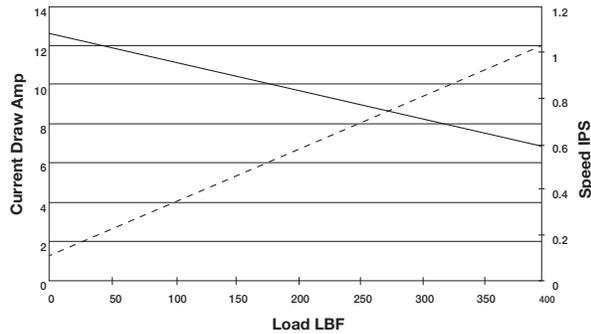
<b>Load Capacity</b>	125 lbs. (56kg)	175 lbs. (78kg)	225 lbs. (101kg)	250 lbs. (112kg)	300 lbs. (135kg)	400 lbs. (157kg)
<b>Speed at Full Load</b>	1.0 in. (25mm)/sec	0.75 in. (18mm)/sec	0.62 in. (15mm)/sec	0.50 in. (12mm)/sec	0.33 in. (8mm)/sec	0.25 in. (6mm)/sec
<b>Input Voltage</b>	12 or 24 volt DC for all models					
<b>Static Load Capacity</b>	700 lbs. (315kg) for all models					
<b>Stroke Length</b>	2, 4, 6, 8, 10 and 12 in. (50, 100, 150, 200, 254, 300mm) for all models					
<b>Duty Cycle</b>	25% for all models					
<b>Operation Temperature Range</b>	-30° F to +150° F (-34° to +65°C) for all models					



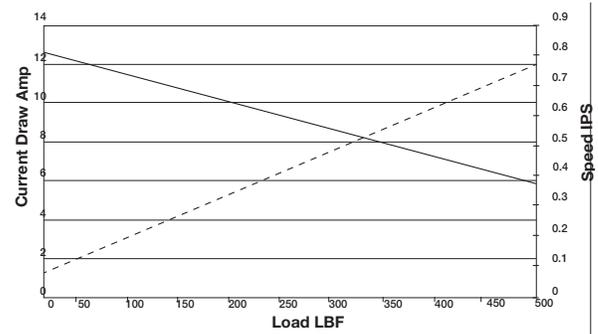
# S-Track

## Performance Graphs

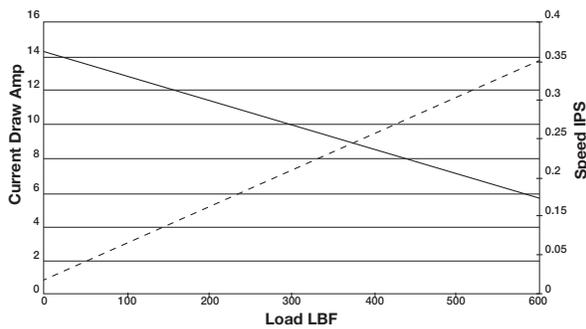
### G07 12V DC



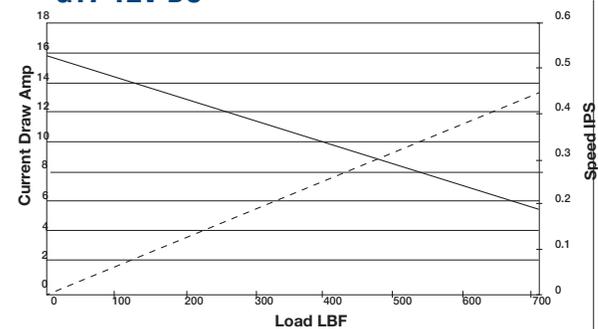
### G011 12V DC



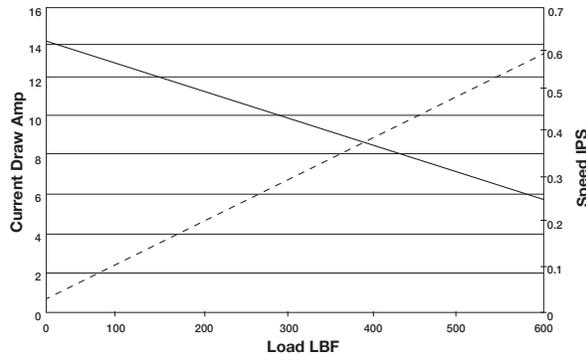
### G14 12V DC



### G17 12V DC



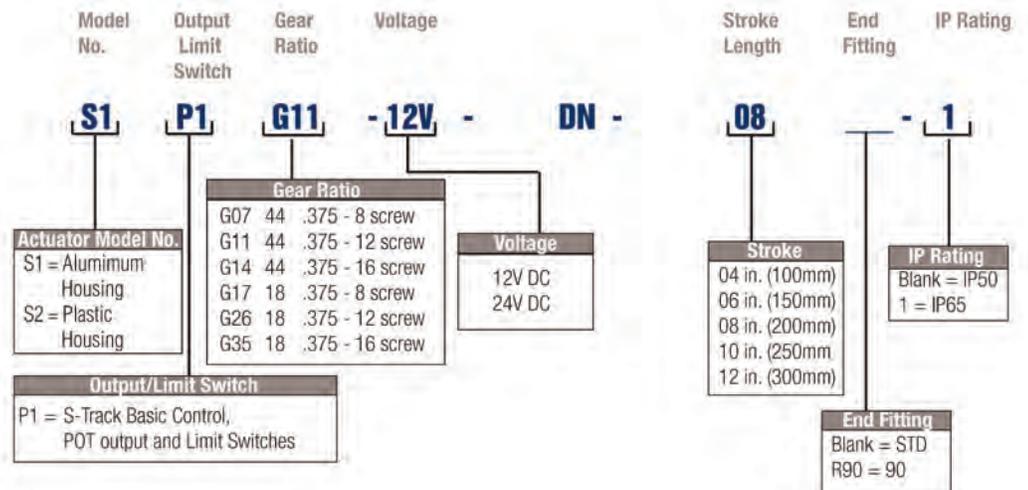
### G35 12V DC



— Linear (Speed in/sec)  
- - - Linear (Amps 12V DC)

Dimensions	
.Stroke	"A"
4" (100mm)	9.32
6" (150mm)	11.32
8" (200mm)	13.32
12" (300mm)	15.32

## Model Configurator



# B-Track Features

## Rugged Duty Actuators

### Key Features

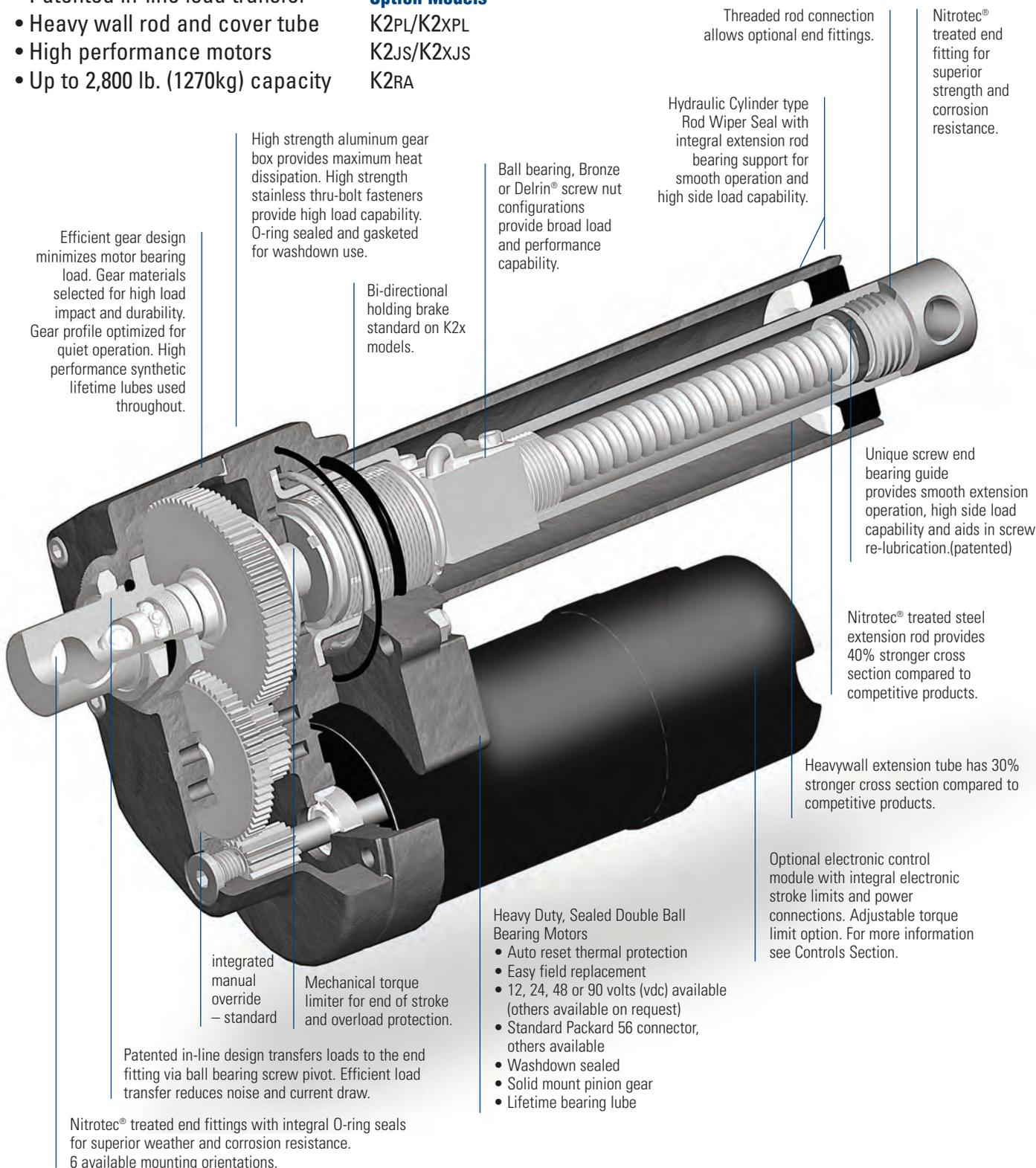
- Weather-tight sealed
- Patented in-line load transfer
- Heavy wall rod and cover tube
- High performance motors
- Up to 2,800 lb. (1270kg) capacity

### Standard Models

K2VL, K2, K2X, K2AC, K2XAC

### Option Models

K2PL/K2XPL  
 K2JS/K2XJS  
 K2RA



Efficient gear design minimizes motor bearing load. Gear materials selected for high load impact and durability. Gear profile optimized for quiet operation. High performance synthetic lifetime lubes used throughout.

High strength aluminum gear box provides maximum heat dissipation. High strength stainless thru-bolt fasteners provide high load capability. O-ring sealed and gasketed for washdown use.

Ball bearing, Bronze or Delrin® screw nut configurations provide broad load and performance capability.

Bi-directional holding brake standard on K2x models.

Threaded rod connection allows optional end fittings.

Nitrotec® treated end fitting for superior strength and corrosion resistance.

Hydraulic Cylinder type Rod Wiper Seal with integral extension rod bearing support for smooth operation and high side load capability.

Unique screw end bearing guide provides smooth extension operation, high side load capability and aids in screw re-lubrication.(patented)

Nitrotec® treated steel extension rod provides 40% stronger cross section compared to competitive products.

Heavywall extension tube has 30% stronger cross section compared to competitive products.

Optional electronic control module with integral electronic stroke limits and power connections. Adjustable torque limit option. For more information see Controls Section.

**Heavy Duty, Sealed Double Ball Bearing Motors**

- Auto reset thermal protection
- Easy field replacement
- 12, 24, 48 or 90 volts (vdc) available (others available on request)
- Standard Packard 56 connector, others available
- Washdown sealed
- Solid mount pinion gear
- Lifetime bearing lube

integrated manual override – standard

Mechanical torque limiter for end of stroke and overload protection.

Patented in-line design transfers loads to the end fitting via ball bearing screw pivot. Efficient load transfer reduces noise and current draw.

Nitrotec® treated end fittings with integral O-ring seals for superior weather and corrosion resistance. 6 available mounting orientations.

# B-Track Configurator

## How To Select

### Step 1 – Determine Load and Stroke length requirements

Use the Quick Selection guide to identify the model family that will provide the load capacity and stroke length needed for your application.

### Step 2 – Determine Gear Ratio

Select gear ratio from performance curves for allowable current draw and needed load.

### Step 3 – Identify motor type and voltage

Select DC motor and motor voltage.

### Step 4 – Motor Type

Select M for ignition protected motor. Select needed motor voltage.

### Step 5 – Confirm the application Duty Cycle

At full load capacity, actuators have a 25% duty cycle. Duty cycle is the amount of 'on-time' compared to cooling time. A unit that runs for 15 seconds should be off for 45 seconds.

### Step 6 – Select Nut Type

Select nut for unit selected. (K2x are all ball bearing).

### Step 7 – Select Stroke Length

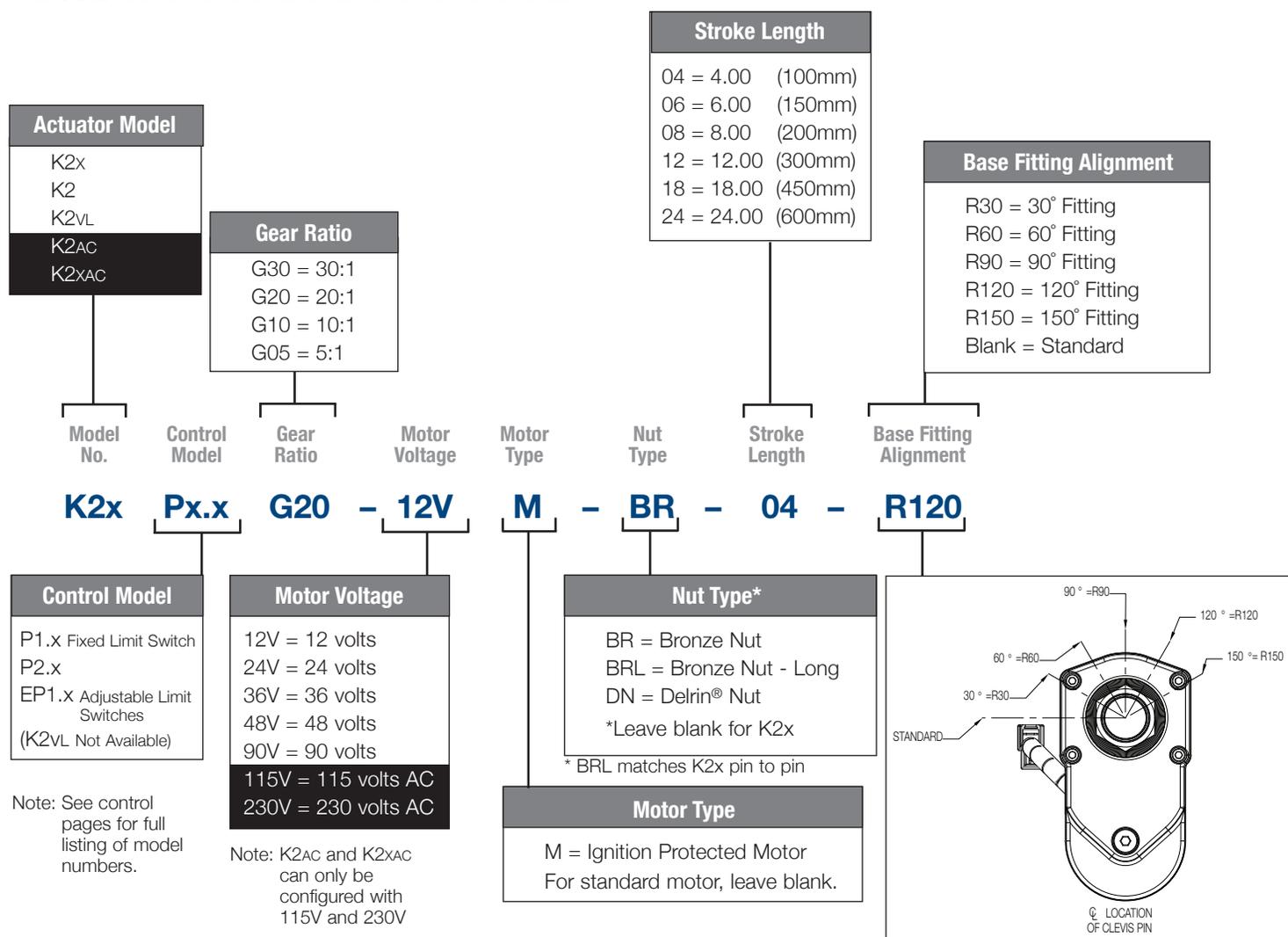
Choose standard lengths from chart. For special length consult factory.

### Step 8 – Select end fitting orientation

Leave blank for standard orientation.

### Important Unit Restrictions

Side loading and shock loads must be considered in actuator applications. Side loading and cantilevered mounting should be eliminated through proper machine design. Side loading will dramatically reduce unit life. While actuators can withstand limited shock loads, it is recommended that shock loading be avoided wherever possible. (See page 57)



Note: See control pages for full listing of model numbers.

Note: K2AC and K2XAC can only be configured with 115V and 230V

# B-Track K2vL

## General Duty Actuator DC Motor Acme Screw

Up to 600 lbs. (270kg) Rated Load

Up to 2.7 in. (68.58mm)/sec. Travel Speed



This value model of the B-track family is well suited for the toughest applications not needing the full load capability of standard K2 models. The K2vL uses a flange bronze bearing configuration for internal load transfer, offering the lowest cost while maintaining the rugged-duty performance capabilities of the B-track family.

K2vL units feature Nitrotec® corrosion protection on end fittings and rods, high performance powder coat paint on cover tubes and gear box covers, providing a totally sealed, weatherproof, and durable finish for years of trouble-free service.

### Features

- Protective coatings and O-ring seals throughout
- Hybrid nut and screw design, no brake needed
- Ball detent overload clutch
- 2 to 12 inches (50 to 300 millimeters) stroke lengths
- Up to 600 pounds (270 kilograms) load capacities
- Speeds up to 2.7 inches (68.58 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

- Flow gate open/close
- Deck and implement lifts for tractors and mobile applications
- Wheelchair and scooter lifts
- Bin and tank cover lifts
- Remote engine clutch engagement

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3000 lbs. (1360kg) Static (in-line load)
  - Refer to performance chart for load/current/speed capabilities
  - Stroke Length Tolerance: +/- .06" (1.52mm)
  - 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: -30°F to 140°F (-34°C to 60°C)
- Weather resistant enclosure & seals (IP 65 capable, 250 hour salt spray, 500 hour for paint)
- Normal operating voltage: 10-16 vdc (Ratings are at 12 vdc Normal.)

### Control/Connections

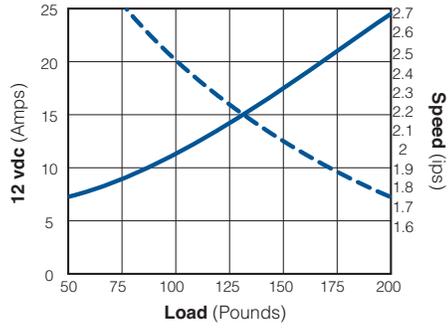
- 14 gauge stranded lead wires-UL style 1230 w/PVC insulation Class F 105°C
- Lead wires abrasion protected with braided covering
- Use momentary contact double pole/double throw switch in powering unit for extend/retract operation. (ON)-OFF-(ON) DPDT
- Connectors:
  - Packard 56 series or Delphi Weather-Pack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



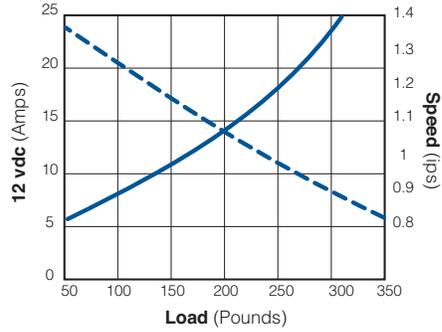
# B-Track K2vL

## Performance Curves Imperial

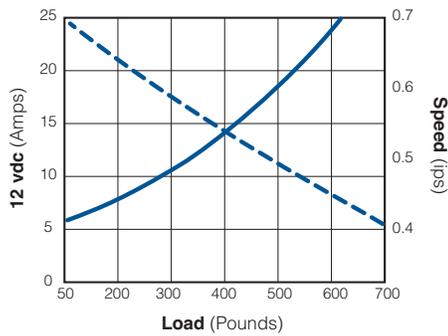
### K2vLG05



### K2vLG10



### K2vLG20

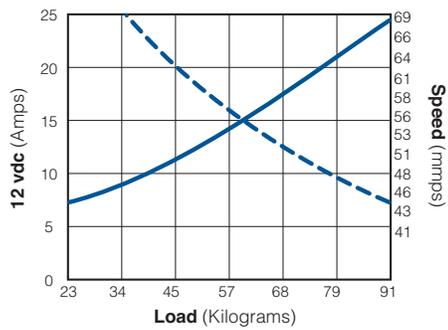


Current Draw

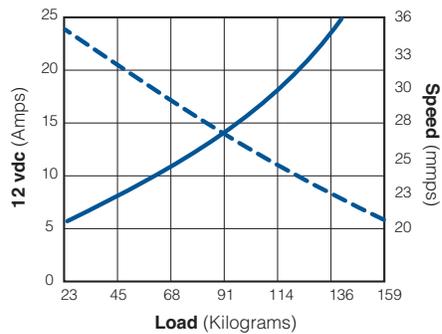
Speed

## Performance Curves Metric

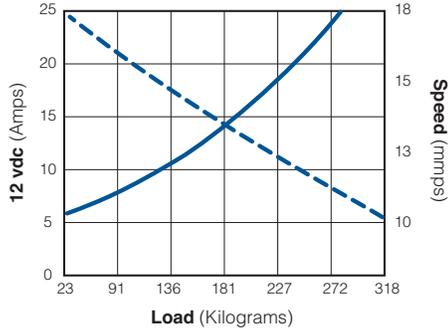
### K2vLG05



### K2vLG10



### K2vLG20



Current Draw

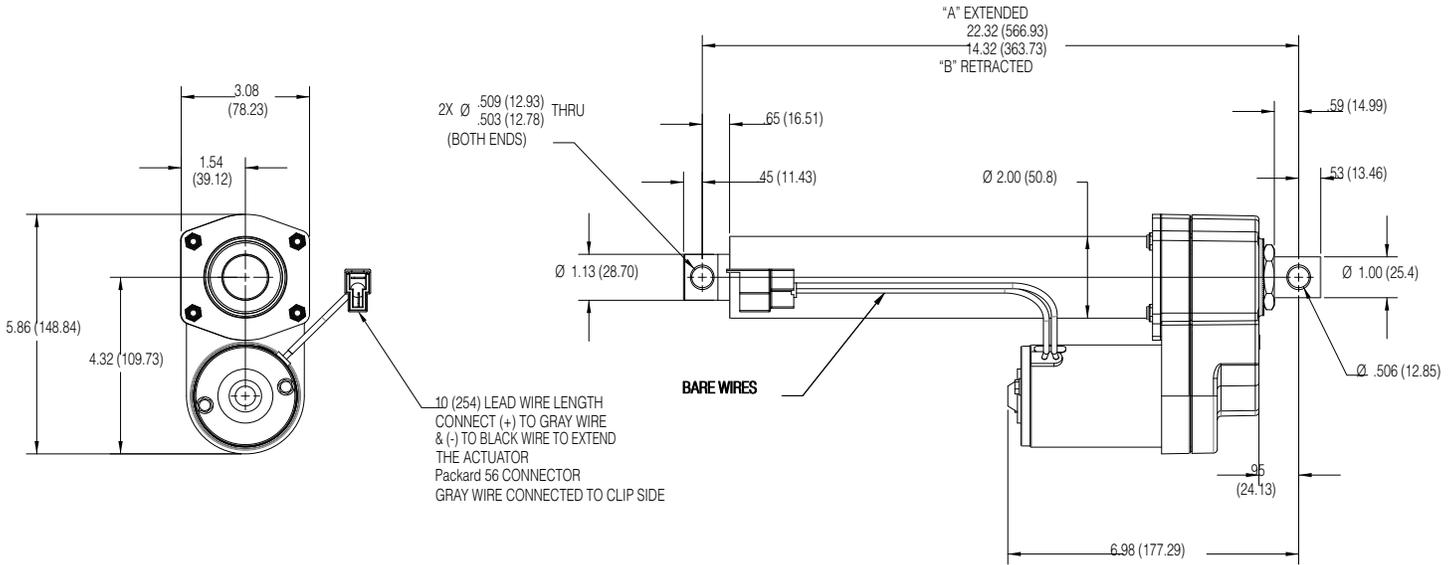
Speed

# B-Track K2vL

## Dimensions

B-Track K2vL	Stroke	in.	mm										
		2	50	4	100	6	150	8	200	10	254	12	300
	A	8.32	211	10.32	262	12.32	313	14.32	364	16.32	415	18.32	465
	B	10.32	262	14.32	364	18.32	465	22.32	567	26.32	669	30.32	770

**Note:** Special lengths available

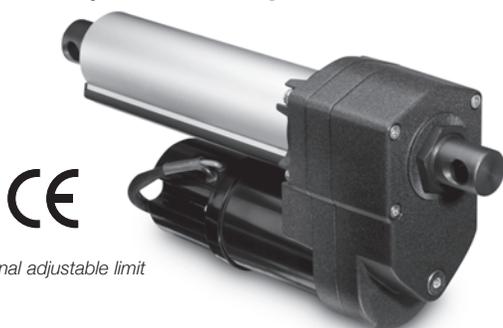


# B-Track K2

## Rugged Duty Actuator DC Motor Acme Screw

Up to 1500 lbs. (680kg) Rated Load

Up to 2.7 in. (68.58mm)/sec. Travel Speed



Shown with optional adjustable limit switch feature

The K2 is the base model in the B-Track family. It incorporates a patented in-line load transfer design which provides high load capability for rugged-duty use, efficient power use, compact package size, excellent corrosion and washdown protection, and high performance synthetic lubrication for life, all at an affordable price.

The K2 uses a solid bronze or Delrin<sup>®</sup> nut with a rolled hybrid screw yielding high impact capability and long screw life. Heavy-duty double-ended ball bearing motors, hardened gears, O-ring seals and an extension rod bearing system that provides best in class capabilities.

**Now Available Optional Adjustable Limit Switch** These easy to use adjustable switches are mounted in a channel on the cover tube with custom cap for protection. They are easily moved to enable the end-user the flexibility of setting the stroke length at any position within the full stroke capability. Just pop the cap off, loosen the set screw and slide the switch into the desired position.

### Features

- Protective coatings and O-ring seals throughout
- Patented in-line load system
- Hybrid nut and screw design, no brake needed
- Ball detent overload clutch
- 2 to 24 inches (50 to 600mm) stroke lengths
- Up to 1500 pounds (680 kilograms) load capacities
- Speeds up to 2.7 inches (68.58 millimeters)/sec. travel
- Thermal overload incorporated into the motor
- Heavy wall construction
- Double ball bearing motors and heat treated gears
- Rugged extension rod bearing support
- Optional 90 vdc motor for use with SBC-AC control
- Custom mounting options available

### Typical Applications

- Heavy duty platform and engine lifts
- Deck and implement lifts for tractors and mobile applications
- Wheelchair and scooter lifts
- Bin and tank cover lifts
- Flow gate open/close
- Table positioning

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3000 lbs. (1360kg) Static (in-line load)
  - Refer to performance chart for load/current/speed capabilities
  - Stroke Length Tolerance: +/- .06" (1.52mm)
  - 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

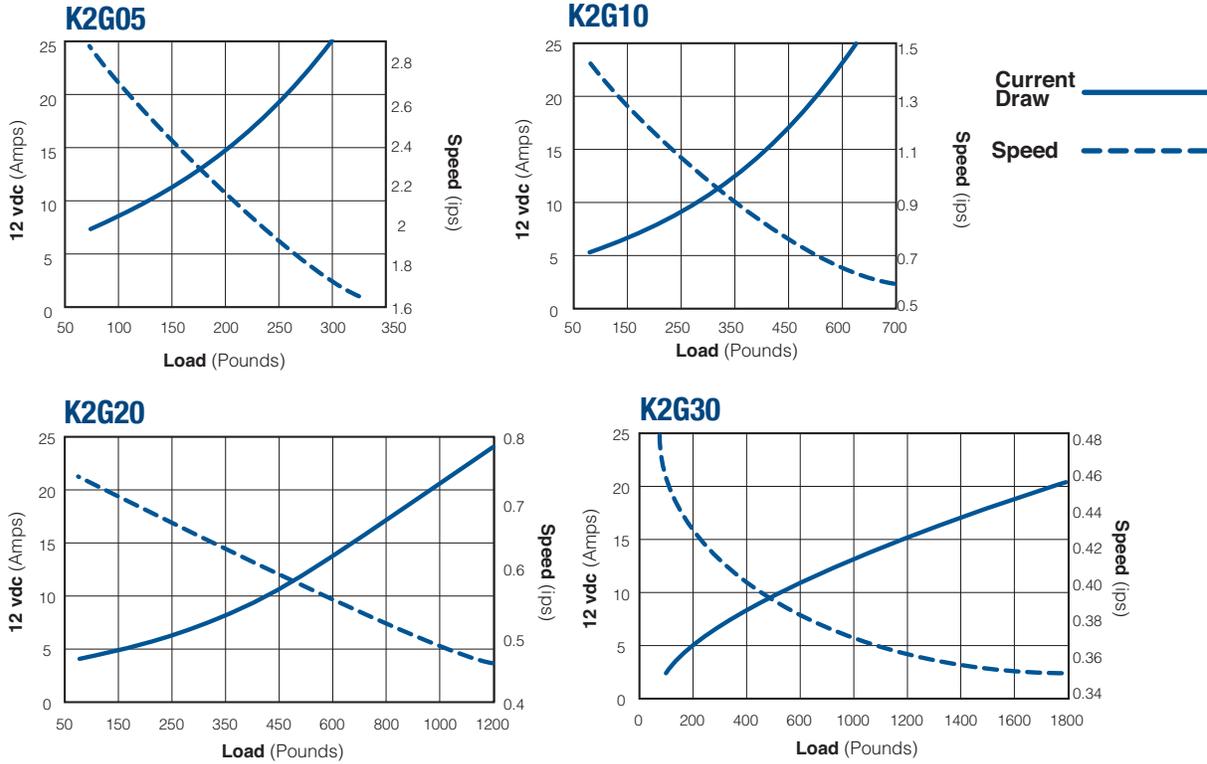
- Ambient temp range: -30°F to 140°F (-34°C to 60°C)
- Weather resistant enclosure & seals (IP 65 capable, 250 hour salt spray, 500 hour for paint)
- Normal operating voltage: 10-16 vdc (Ratings are at 12 vdc Normal.)

### Control/Connections

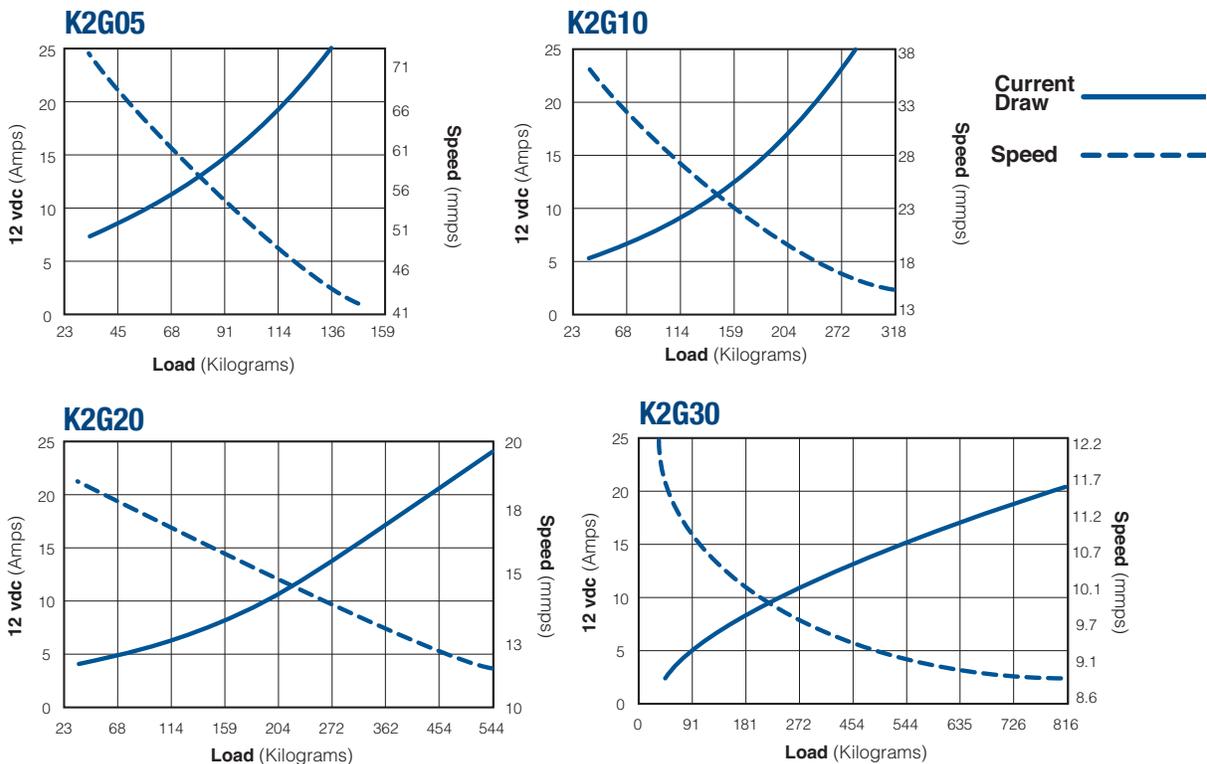
- 14 gauge stranded lead wires-UL style 1230 w/PVC insulation Class F 105°C
- Lead wires abrasion protected with braided covering
- Use momentary contact double pole/double throw switch in powering unit for extend/retract operation. (ON)-OFF-(ON) DPDT
- Connectors:
  - Packard 56 series or Delphi Weather-Pack
  - Packard 56 series with 56 series blades (#2984883 & #2962987)
  - Delphi Weather-Pack series (#121015792 & #121010973)

# B-Track K2

## Performance Curves Imperial



## Performance Curves Metric



# B-Track K2

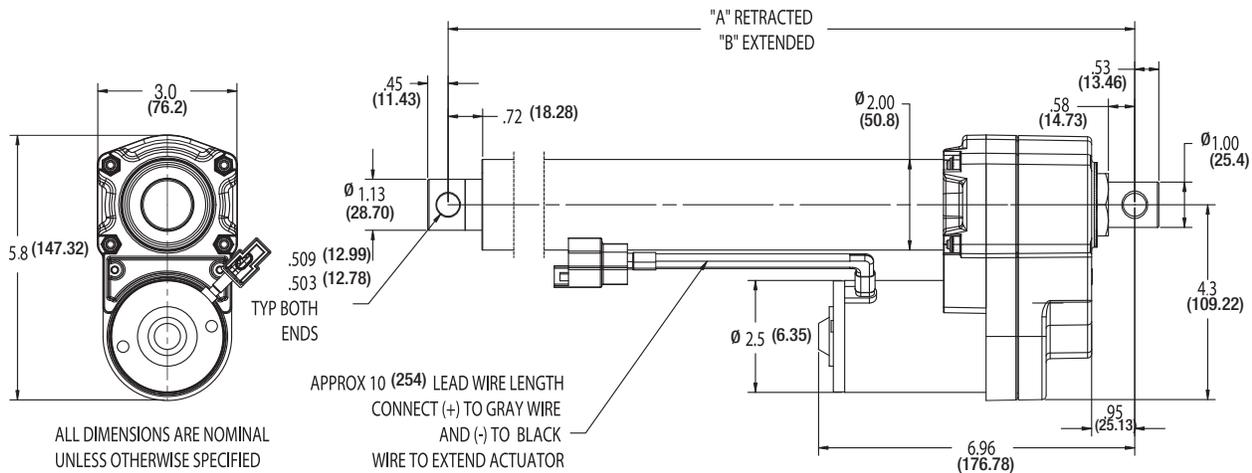
## Dimensions

B-Track K2	Stroke	in.	mm										
		2	50	4	100	6	150	8	200	10	254	12	300
A		8.32	211	10.32	262	12.32	313	14.32	364	16.32	415	18.32	465
B		10.32	262	14.32	364	18.32	465	22.32	567	26.32	669	30.32	770

Note: Special lengths available

B-Track K2	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		14	355	16	405	18	450	20	508	22	558	24	600
A		20.32	516	22.32	567	24.32	618	29.32	745	31.32	796	33.32	846
B		34.32	872	38.32	973	42.32	1075	49.32	1253	53.32	1354	57.32	1456

Note: Special lengths available



# B-Track K2AC

## Rugged Duty Actuator AC Motor Acme Screw

Up to 1100 lbs. (500kg) Rated Load

Up to 1 in. (25.4mm)/sec. Travel Speed



The K2 is the base model in the B-Track family. It incorporates a patented in-line load transfer design which provides high load capability for rugged-duty use, efficient power use, compact package size, excellent corrosion and washdown protection, and high performance synthetic lubrication for life, all at an affordable price.

The K2 uses a solid bronze or Delrin<sup>®</sup> nut with a rolled hybrid screw yielding high impact capability and long screw life. Heavy-duty double-ended ball bearing motors, hardened gears, O-ring seals and an extension rod bearing system that provides best in class capabilities.

**Now Available Optional Adjustable Limit Switch** These easy to use adjustable switches are mounted in a channel on the cover tube with custom cap for protection. They are easily moved to enable the end-user the flexibility of setting the stroke length at any position within the full stroke capability. Just pop the cap off, loosen the set screw and slide the switch into the desired position.

### Features

- Protective coatings and O-ring seals throughout
- Patented in-line load system
- Hybrid nut and screw design, no brake needed
- Ball detent overload clutch
- 4 to 24 inches (100 to 600 millimeters) stroke lengths
- Up to 1100 pounds (500 kilograms) load capacities
- Speeds up to 2.1 inches (53.34 millimeters)/sec. travel
- Thermal overload incorporated into the motor
- Heavy wall construction
- Double ball bearing motors and heat treated gears
- Rugged extension rod bearing support
- Custom mounting options available
- Limit switches offered only in the adjustable version (EP1.x)

### Typical Applications

- Ergonomic lift tables
- Conveyor diverters
- Bin/tank cover lifts
- Roof vents

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3000 lbs. (1360kg) Static (in-line load)
  - Refer to performance chart for load/current/speed capabilities
  - Stroke Length Tolerance: +/- .06" (1.52mm)
  - 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: -30°F to 140°F (-34°C to 60°C)
- Weather resistant enclosure & seals (IP 65 capable, 250 hour salt spray, 500 hour for paint)
- Normal operating voltage: 10-16 vdc (Ratings are at 12 vdc Normal.)

### Control/Connections

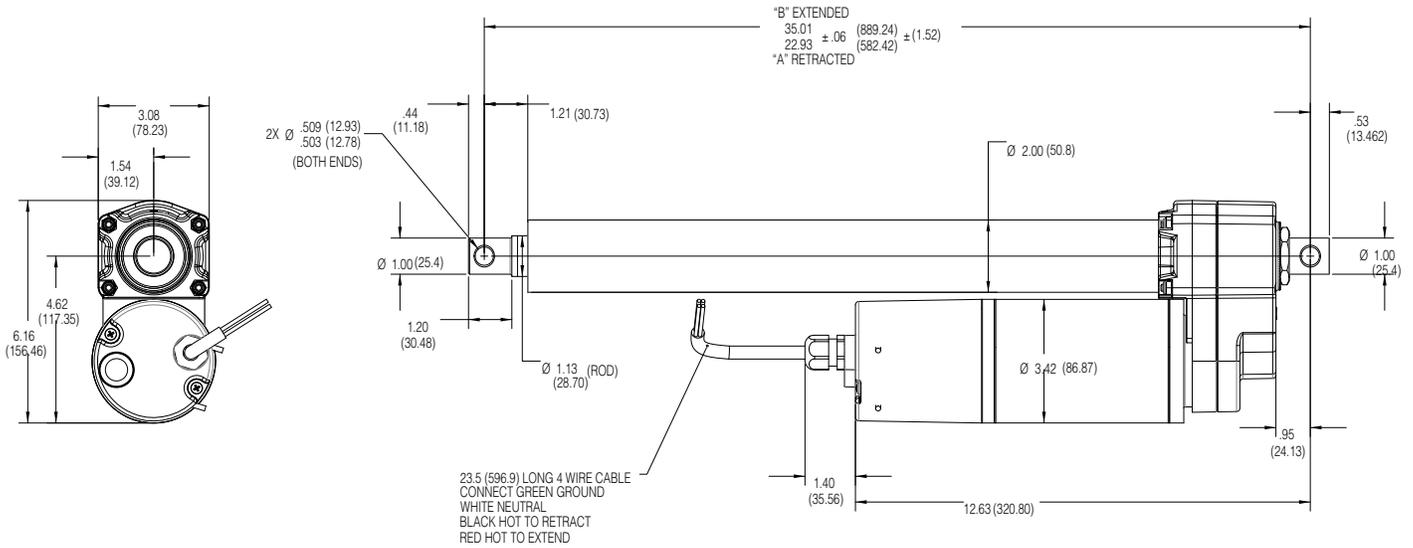
- 14 gauge stranded lead wires-UL style 1230 w/PVC insulation Class F 105°C
- Lead wires abrasion protected with braided covering
- Use momentary contact double pole/double throw switch in powering unit for extend/retract operation. (ON)-OFF-(ON) DPDT

# B-Track K2Ac

## Dimensions

B-Track K2	Stroke	in.	mm	in.	mm								
		4	100	6	150	8	200	12	300	18	450	24	600
A		14.96	380	16.97	431	18.94	481	22.95	583	28.94	735	34.92	887
B		18.97	482	22.99	584	26.93	684	34.95	888	46.93	1192	58.93	1497

**Note:** Special lengths available

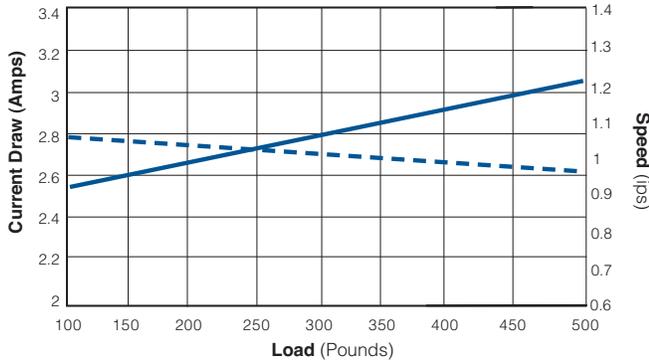


# B-Track K2AC

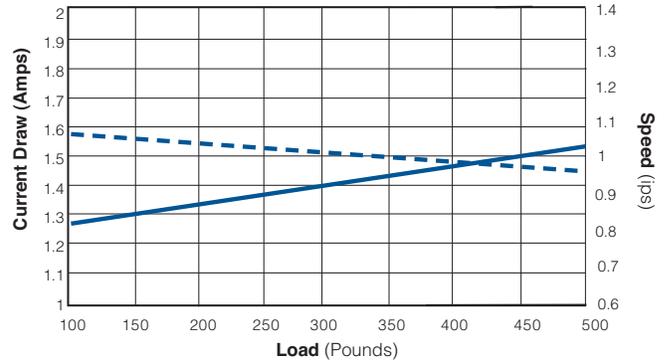
## Performance Curves Imperial

**Current Draw** ———  
**Speed** - - - -

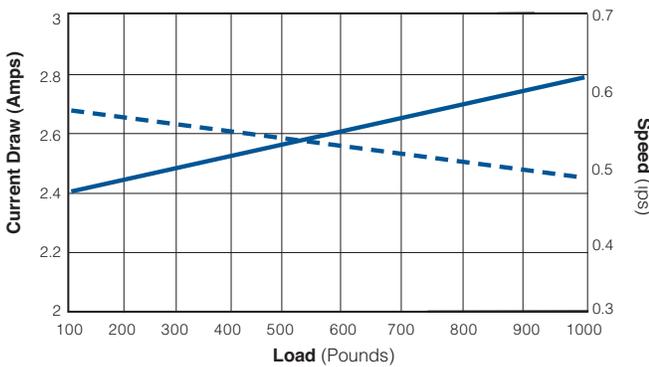
### K2G10-115VAC



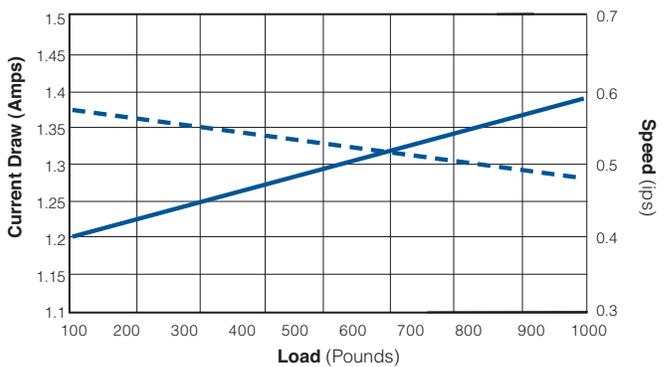
### K2G10-230VAC



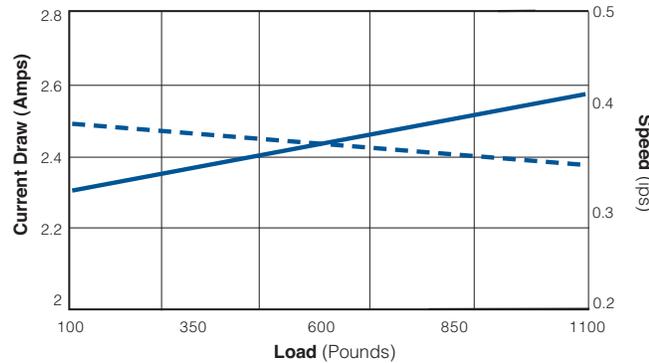
### K2G20-115VAC



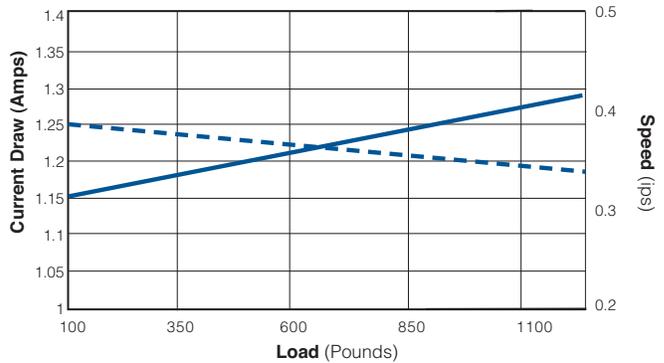
### K2G20-230VAC



### K2G30-115VAC



### K2G30-230VAC



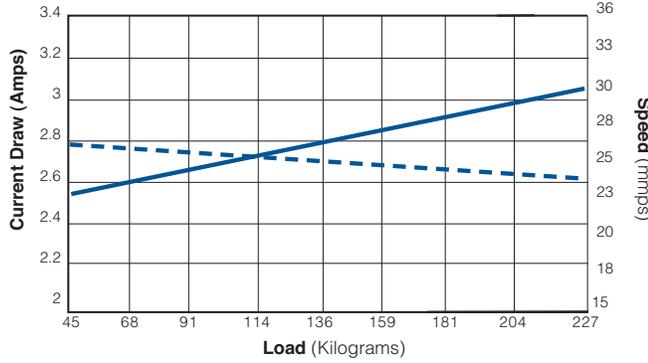


# B-Track K2Ac

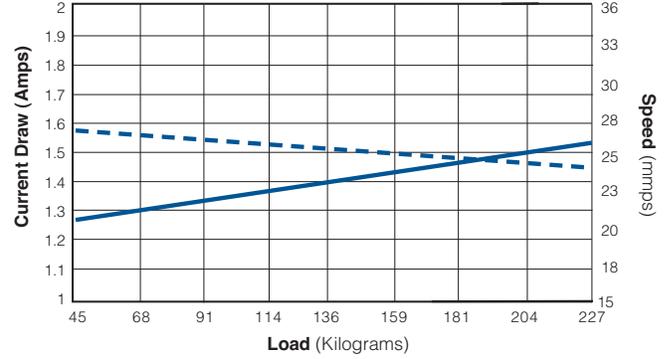
## Performance Curves Metric

Current Draw Speed

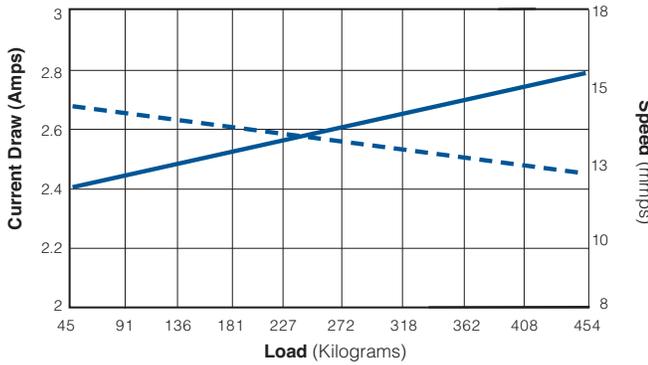
### K2G10-115VAC



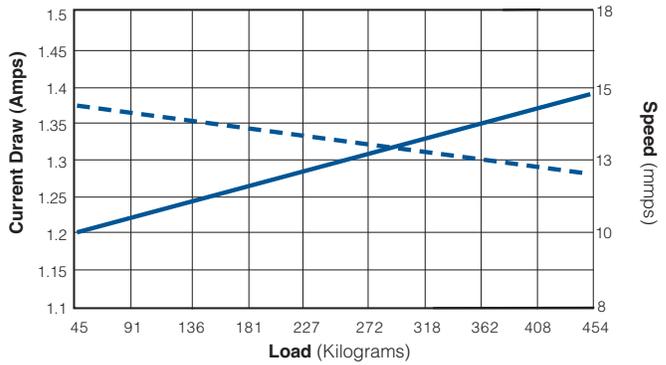
### K2G10-230VAC



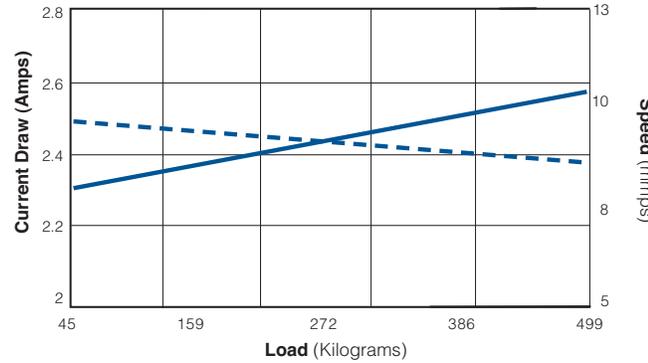
### K2G20-115VAC



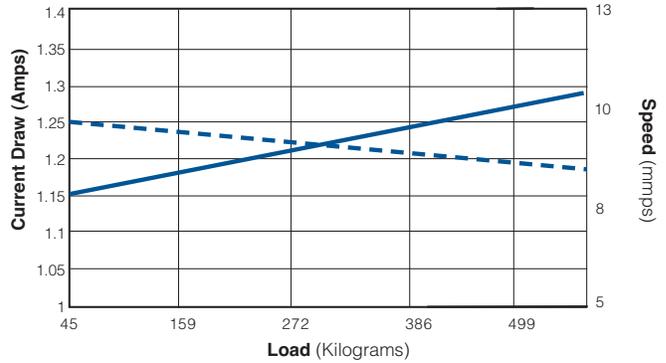
### K2G20-230VAC



### K2G30-115VAC



### K2G30-230VAC



# B-Track K2x

## Rugged Duty Actuator DC Motor Ball Screw

Up to 2,800 lbs. (1270kg) Rated Load

Up to 2.1 in. (53.34mm)/sec. Travel Speed



The K2x model provides the highest load rating in its class. This model incorporates all of the base K2 features with a ball nut screw for a 2,800 lb. (1270kg) load capability within a compact package size. The K2x includes a bi-directional wrap spring brake for load holding capability. These units are well suited for the most demanding applications where an alternative to hydraulic or air cylinders is needed or where hydraulic power sources are not available.

Combining the K2x actuator with BTc control functionality results in precision actuator control at a fraction of the cost of more complicated servo actuator systems. See Controls Section for more information on BTc controls.

**Now Available Optional Adjustable Limit Switch** These easy to use adjustable switches are mounted in a channel on the cover tube with custom cap for protection. They are easily moved to enable the end-user the flexibility of setting the stroke length at any position within the full stroke capability. Just pop the cap off, loosen the set screw and slide the switch into the desired position.

### Features

- Protective coatings and O-ring seals throughout
- Efficient in-line ball screw system
- Integral load holding brake
- Ball detent overload clutch
- 2 to 24 inches (50 to 600 millimeters) stroke lengths
- Up to 2,800 pounds (1270 kilograms) load capacities
- Speeds up to 2.1 inches (53.34mm)/sec. travel
- Thermal overload incorporated into the motor
- Heavy wall construction
- Double ball bearing motors and heat treated gears
- Rugged extension rod bearing support
- Optional 90 vdc motor for use with SBC-AC control
- Custom mounting options available

### Typical Applications

- Paving equipment
- Deck and implement lifts for tractors and mobile applications
- Spray booms
- Scissor and dump box lifts

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3000 lbs. (1360kg) Static (in-line load)
  - Refer to performance chart for load/current/speed capabilities
  - Stroke Length Tolerance: +/- .06" (1.52mm)
  - 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: -30°F to 140°F (-34°C to 60°C)
- Weather resistant enclosure & seals (IP 65 capable, 250 hour salt spray, 500 hour for paint)
- Normal operating voltage: 10-16 vdc (Ratings are at 12 vdc Normal.)

### Control/Connections

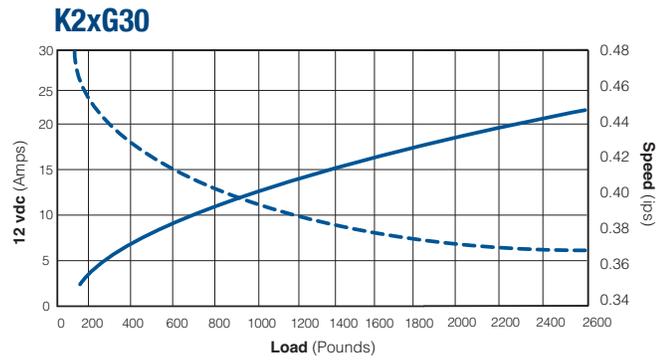
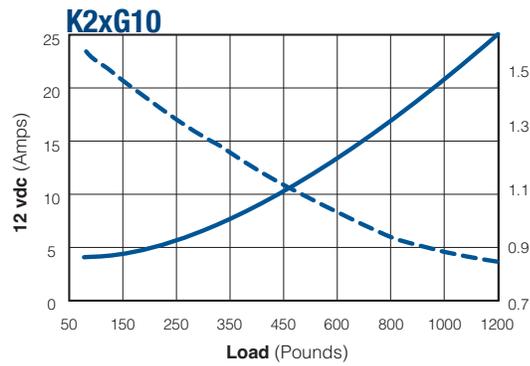
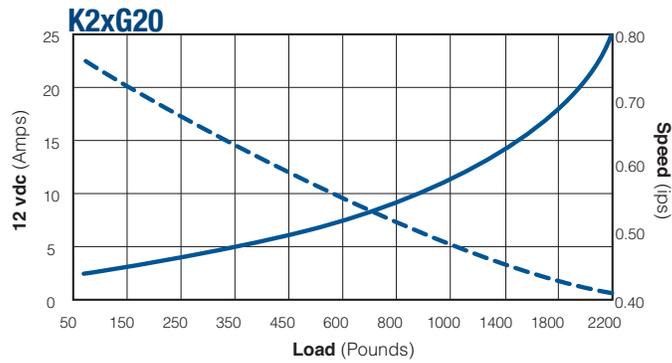
- 14 gauge stranded lead wires-UL style 1230 w/PVC insulation Class F 105°C
- Lead wires abrasion protected with braided covering
- Use momentary contact double pole/double throw switch in powering unit for extend/retract operation. (ON)-OFF-(ON) DPDT
- Connectors:
  - Packard 56 series or Delphi Weather-Pack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



# B-Track K2x

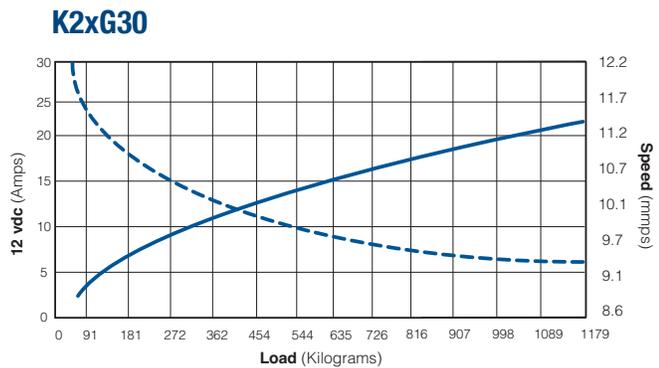
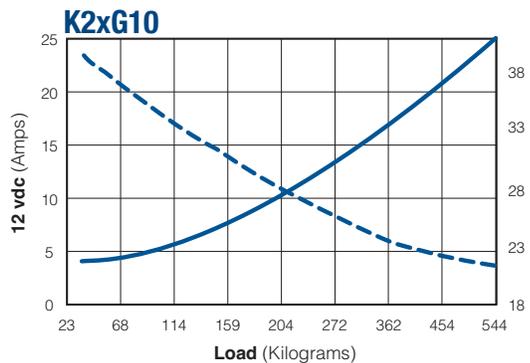
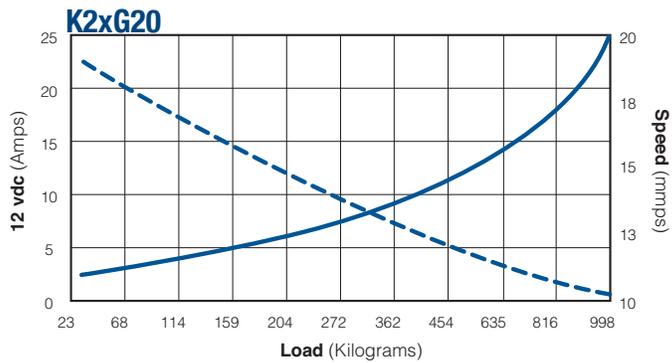
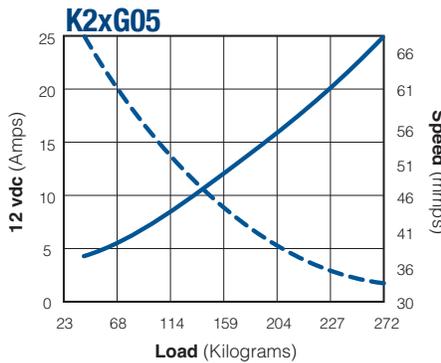
## Performance Curves Imperial

Current Draw ——— Speed - - - - -



## Performance Curves Metric

Current Draw ——— Speed - - - - -



# B-Track K2x

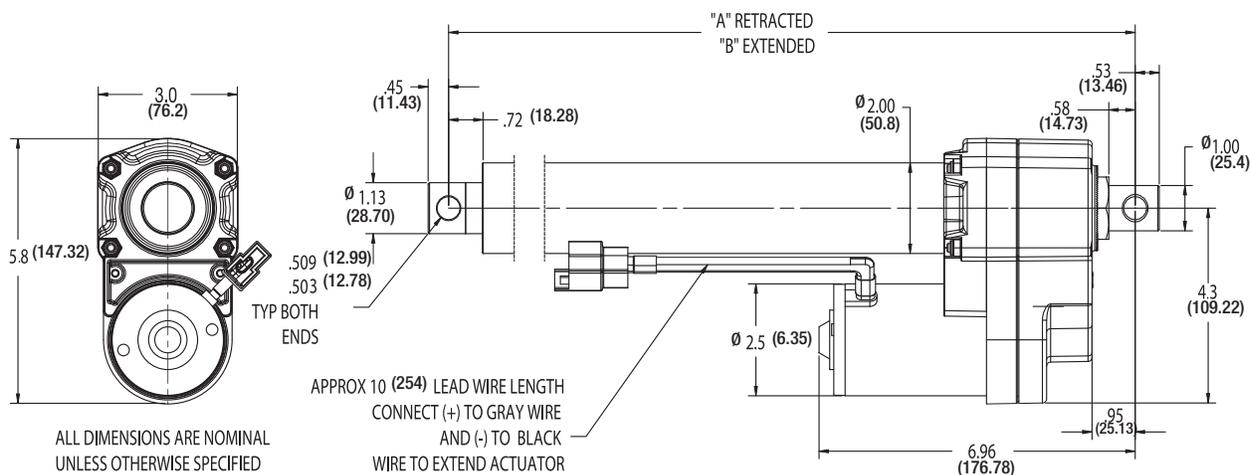
## Dimensions

B-Track K2x	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		<b>2</b>	<b>50</b>	<b>4</b>	<b>100</b>	<b>6</b>	<b>150</b>	<b>8</b>	<b>200</b>	<b>10</b>	<b>254</b>	<b>12</b>	<b>300</b>
	A	9.89	251	11.89	302	13.89	353	15.89	403	17.89	454	19.89	505
	B	11.89	302	15.89	403	19.89	505	23.89	607	27.89	708	31.89	810

**Note:** Special lengths available

B-Track K2x	Stroke	in.	mm										
		<b>14</b>	<b>355</b>	<b>16</b>	<b>405</b>	<b>18</b>	<b>450</b>	<b>20</b>	<b>508</b>	<b>22</b>	<b>558</b>	<b>24</b>	<b>600</b>
	A	21.89	556	23.89	607	25.89	658	30.89	785	32.89	835	34.89	886
	B	35.89	912	39.89	1013	43.89	1115	50.89	1293	54.89	1394	58.89	1496

**Note:** Special lengths available



# B-Track K2xAC

## Rugged Duty Actuator AC Motor Ball Screw

Up to 2,200 lbs. (998kg) Rated Load

Up to 2.1 in. (53.34mm)/sec. Travel Speed



The K2x model provides the highest load rating in its class. This model incorporates all of the base K2 features with a ball nut screw for a 2,200 lb. (998kg) load capability within a compact package size. The K2x includes a bi-directional wrap spring brake for load holding capability. These units are well suited for the most demanding applications where an alternative to hydraulic or air cylinders is needed or where hydraulic power sources are not available.

Combining the K2x actuator with BTc control functionality results in precision actuator control at a fraction of the cost of more complicated servo actuator systems. See Controls Section for more information on BTc controls.

**Now Available Optional Adjustable Limit Switch** These easy to use adjustable switches are mounted in a channel on the cover tube with custom cap for protection. They are easily moved to enable the end-user the flexibility of setting the stroke length at any position within the full stroke capability. Just pop the cap off, loosen the set screw and slide the switch into the desired position.

### Features

- Protective coatings and O-ring seals throughout
- Efficient in-line ball screw system
- Integral load holding brake
- Ball detent overload clutch
- 4 to 24 inches (100 to 600 millimeters) stroke lengths
- Up to 2,200 pounds (998 kilograms) load capacities
- Speeds up to 2.1 inches (53.34 millimeters)/sec. travel
- Thermal overload incorporated into the motor
- Heavy wall construction
- Double ball bearing motors and heat treated gears
- Rugged extension rod bearing support
- Custom mounting options available
- Limit switches offered only in the adjustable version (EP1.x)

### Typical Applications

- Engine Lifts
- Tables
- Indoor Applications
- Machine Tools
- Egg Rotation

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3000 lbs. (1360kg) Static (in-line load)
  - Refer to performance chart for load/current/speed capabilities
  - Stroke Length Tolerance: +/- .06" (1.52mm)
  - 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: -30°F to 140°F (-34°C to 60°C)
- Weather resistant enclosure & seals (IP 65 capable, 250 hour salt spray, 500 hour for paint)
- Normal operating voltage: 10-16 vdc (Ratings are at 12 vdc Normal.)

### Control/Connections

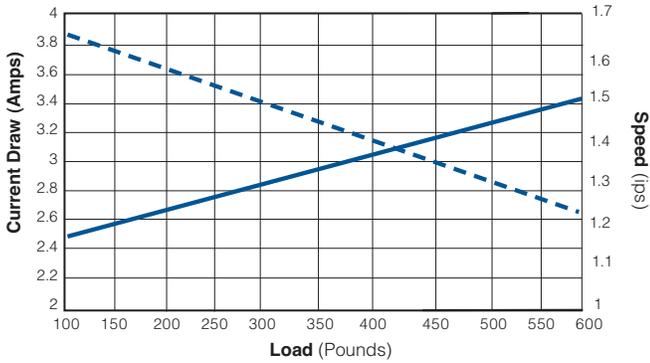
- 14 gauge stranded lead wires-UL style 1230 w/PVC insulation Class F 105°C
- Lead wires abrasion protected with braided covering
- Use momentary contact double pole/double throw switch in powering unit for extend/retract operation. (ON)-OFF-(ON) DPDT

# B-Track K2xAC

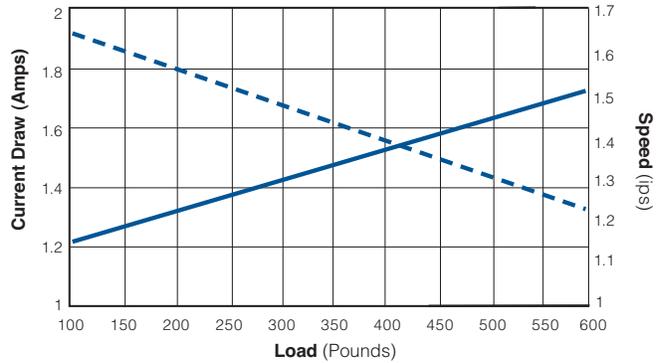
## Performance Curves Imperial

**Current Draw** ———  
**Speed** - - - -

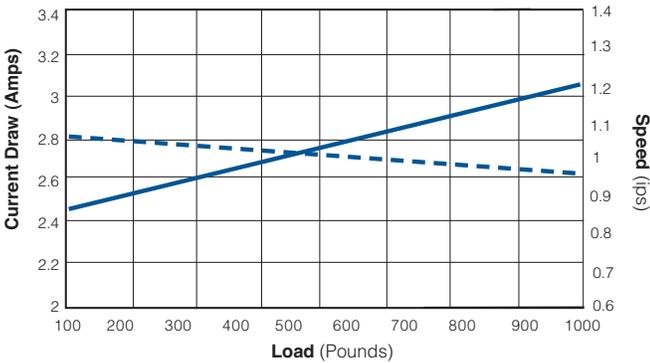
**K2xACG05-115VAC**



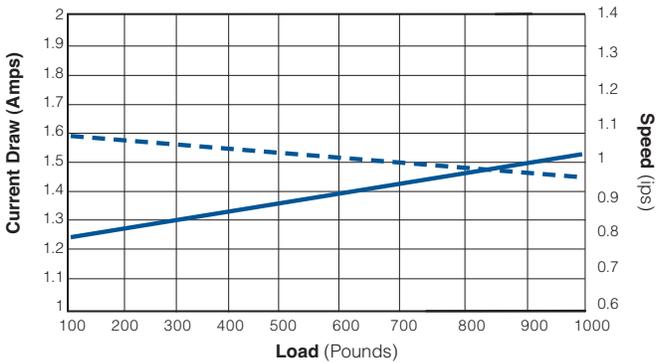
**K2xACG05-230VAC**



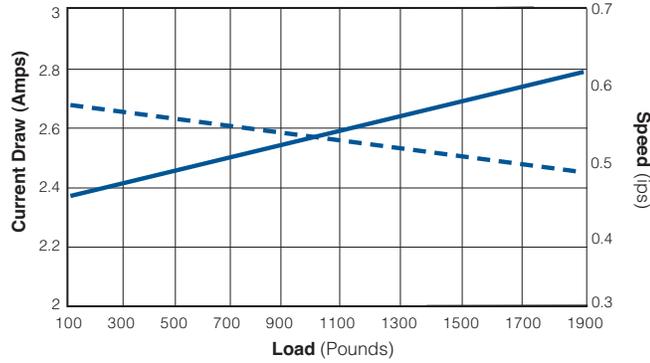
**K2xACG10-115VAC**



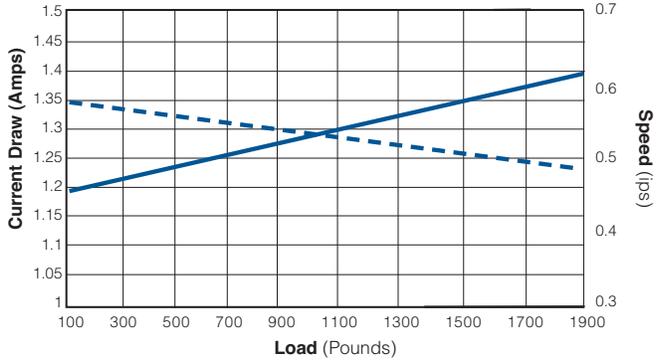
**K2xACG10-230VAC**



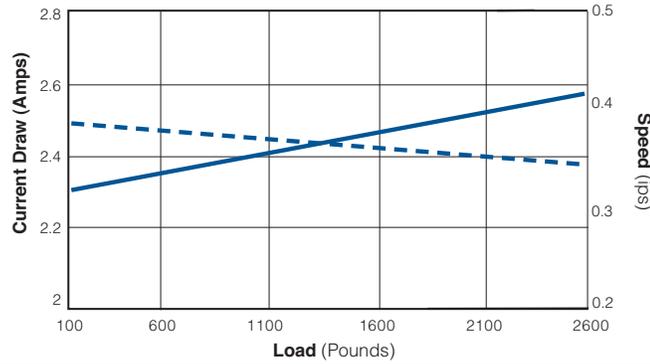
**K2xACG20-115VAC**



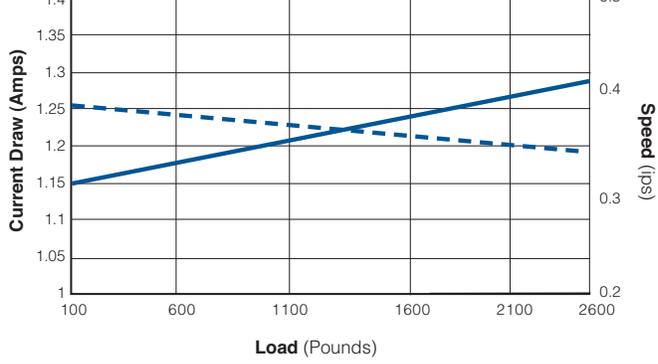
**K2xACG20-230VAC**



**K2xACG30-115VAC**



**K2xACG30-230VAC**



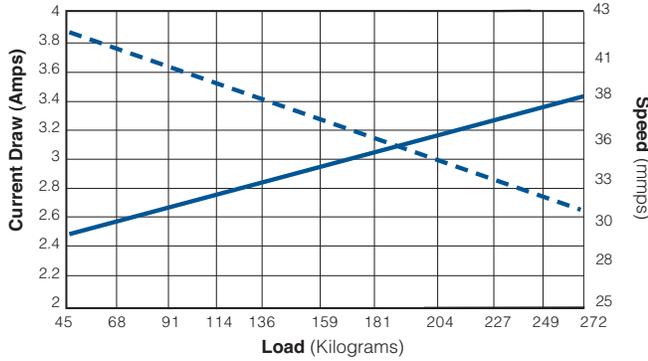


# B-Track K2xAc

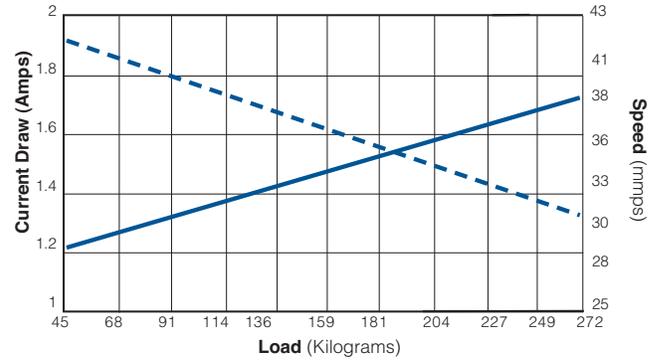
## Performance Curves Metric

Current Draw Speed

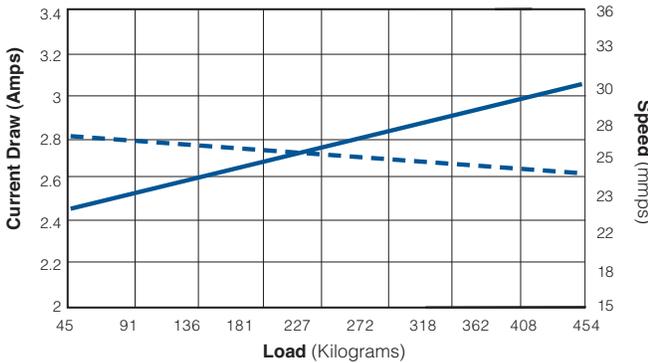
### K2xAcG05-115VAC



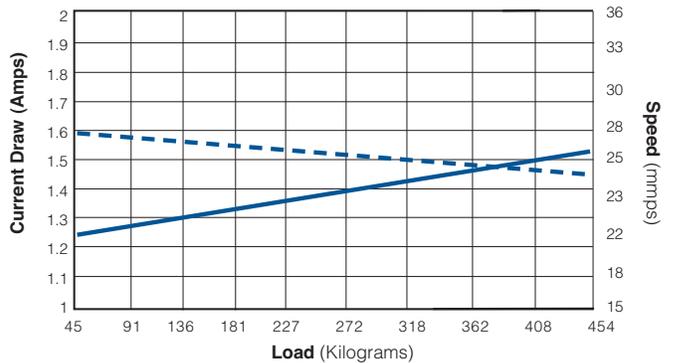
### K2xAcG05-230VAC



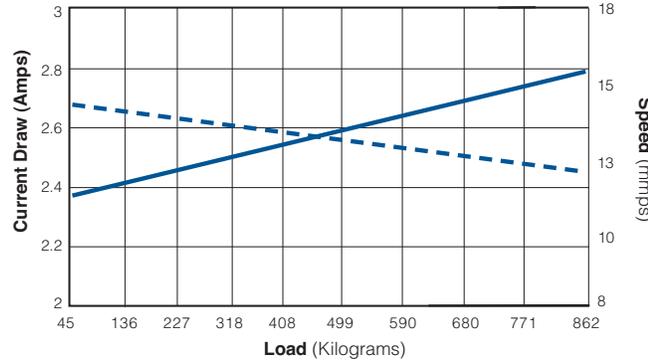
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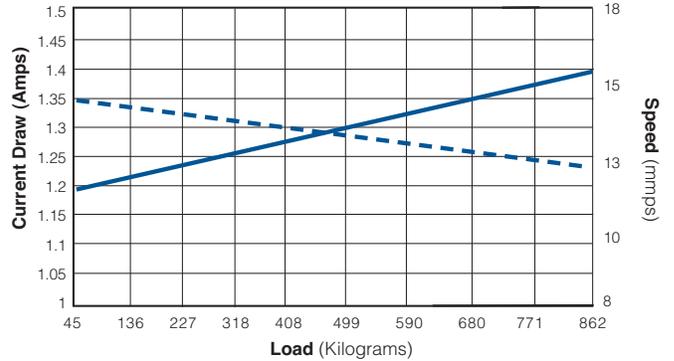
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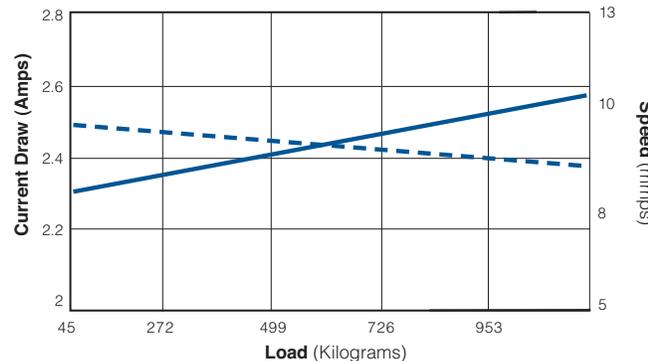
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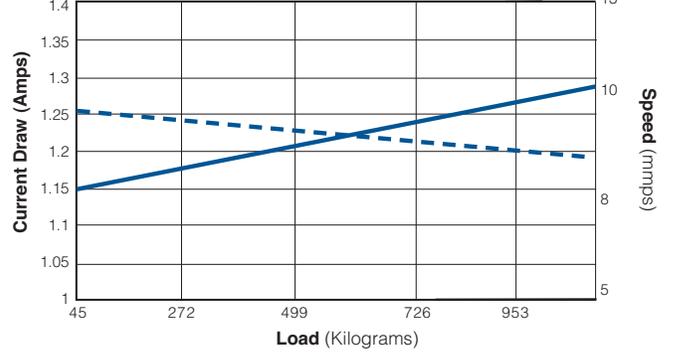
### K2xAcG20-230VAC



### K2xAcG30-115VAC



### K2xAcG30-230VAC

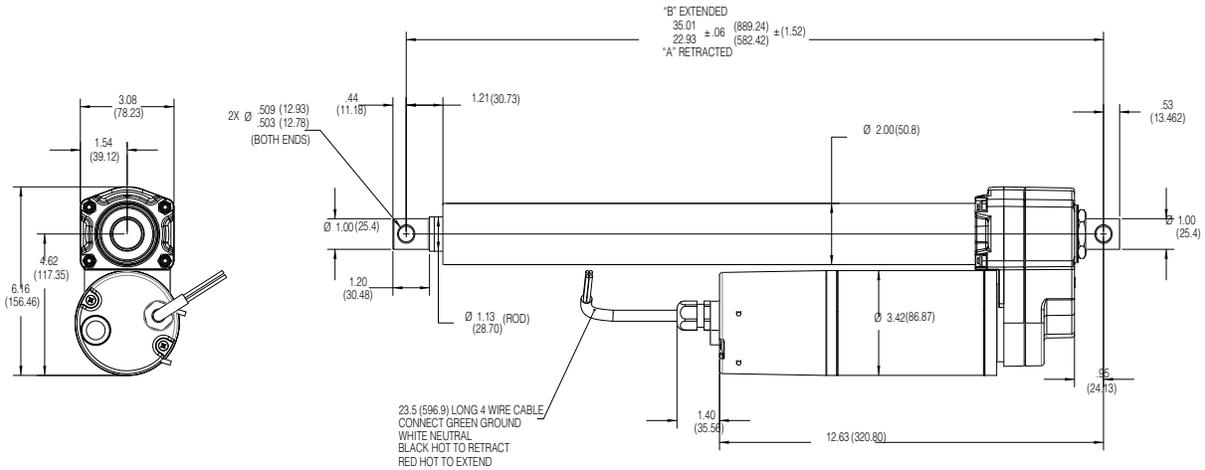


# B-Track K2xAC

## Dimensions

B-Track K2x	Stroke	in.	mm	in.	mm								
		4	100	6	150	8	200	12	300	18	450	24	600
	A	14.96	380	16.97	431	18.94	481	22.95	583	28.94	735	34.92	887
	B	18.97	482	22.99	584	26.93	684	34.95	888	46.93	1192	58.93	1497

Note: Special lengths available



# Custom Actuators

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



Examples of special request features (shown above)

### Rod End Mounting Option Examples

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

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



Consult with factory for specific mounting configuration needs.

# 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.

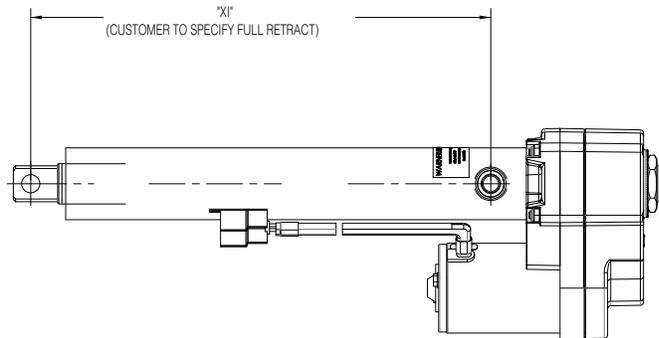
- A teaming of creative resources
- Joint understanding of our actuator capabilities and how they can be tailored to your application
- An understanding of the lowest cost solution to meet your actuator requirements
- Providing a complete solution that includes controls as required

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

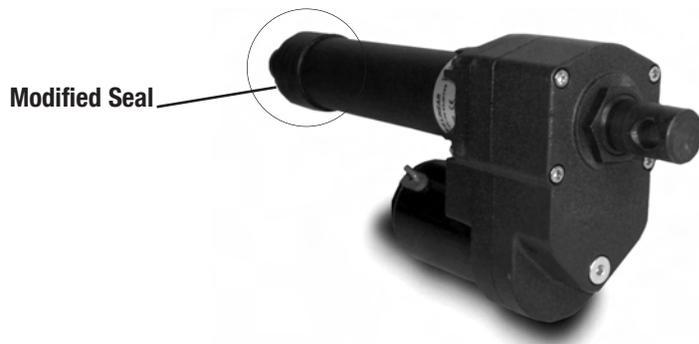
Some common versions of these are shown as our K2PL/K2XPL and K2JS/K2XJS families.

Additional common modifications are:

### Tube/Trunion Mount



### Modified Seal design for expanded contamination protection



# B-Track K2PL / K2xPL

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

Up to 2,200 lbs. (998kg) Rated Load

Up to 2.1 in. (53.34mm)/sec. Travel Speed



*Shown with optional direct drive manual override feature without protective cap.*



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
- 4 to 24 inches (100 to 600 millimeters) stroke lengths
- Up to 2200 pounds (998 kilograms) load capacities
- Speeds up to 2.1 inches (53.34 millimeters)/sec. travel
- Thermal overload incorporated into the motor
- Heavy wall construction
- Double ball bearing motors and 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: 3000 lbs. (1360kg) Static (in-line load)
  - Refer to performance chart for load/current/speed capabilities
  - Stroke Length Tolerance: +/- .06" (1.52mm)
  - 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: -30°F to 140°F (-34°C to 60°C)
- Weather resistant enclosure & seals (IP 65 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 braided 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 K2PL / K2XPL

## Performance Curves

See page 20 for K2PL performance curves.  
See page 27 for K2xPL performance curves.

## Dimensions

B-Track K2PL	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		4	100	6	150	8	200	10	254	12	300	14	355
	A	7.03	179	9.03	229	11.03	280	13.03	331	15.03	382	17.03	433
B	11.03	275	15.03	375	19.03	475	23.03	575	27.03	675	31.03	775	

**Note:** Special lengths available

B-Track K2PL	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		16	405	18	450	20	508	22	558	24	600
	A	19.03	483	21.03	534	23.03	585	25.03	636	27.03	687
B	38.06	967	42.06	1068	46.06	1170	50.06	1272	54.06	1373	

**Note:** Special lengths available

B-Track K2XPL	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		4	100	6	150	8	200	10	254	12	300	14	355
	A	8.53	217	10.53	267	12.53	318	14.53	369	16.53	420	18.53	471
B	12.53	318	16.53	420	20.53	521	24.53	623	28.53	725	32.53	826	

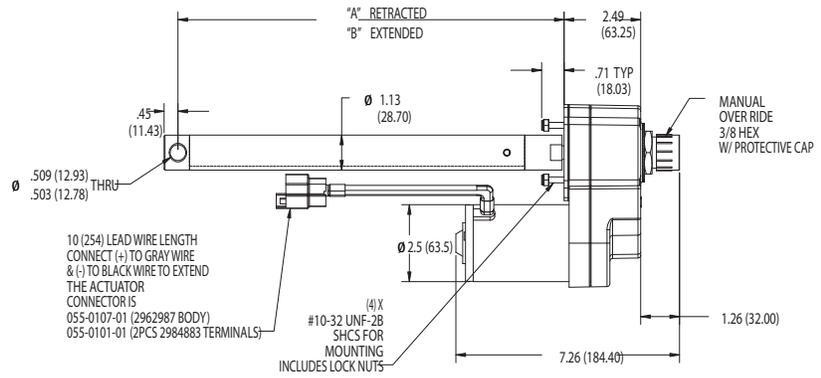
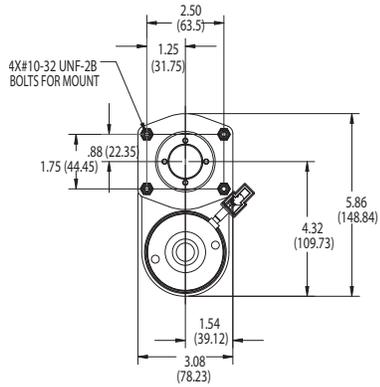
**Note:** Special lengths available

B-Track K2XPL	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		16	405	18	450	20	508	22	558	24	600
	A	20.53	521	22.53	572	24.53	623	26.53	674	28.53	725
B	36.53	928	40.53	1029	44.53	1131	48.53	1233	52.53	1334	

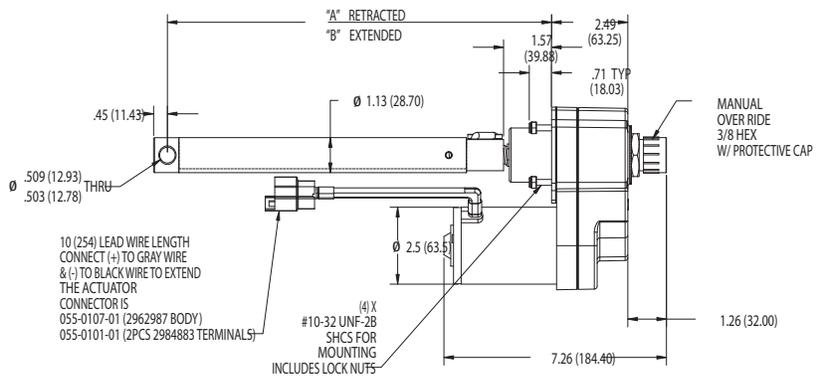
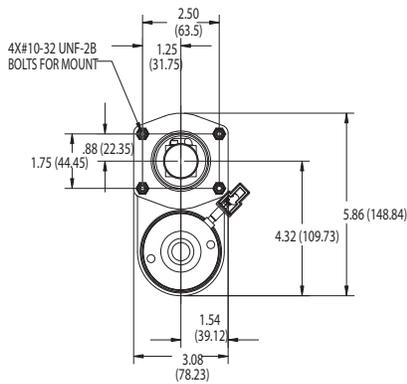
**Note:** Special lengths available

# B-Track K2PL / K2XPL

## B-Track K2PL



## B-Track K2XPL



# B-Track K2Js / K2xJs

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

Up to 2,800 lbs. (1270kg) Rated Load  
 Up to 2.1 in. (53.34mm)/sec. Travel Speed



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



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® 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.

### 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
- 8 to 16 inches (200 to 400 millimeters) stroke lengths
- Up to 2,800 pounds (1270 kilograms) load capacities
- Speeds up to 2.1 inches (53.34 millimeters)/sec. travel
- Thermal overload incorporated into the motor
- Heavy wall construction
- Double ball bearing motors and 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

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3000 lbs. (1360kg) 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: -30°F to 140°F (-34°C to 60°C)
- Weather resistant enclosure & seals (IP 65 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 braided 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 Curves

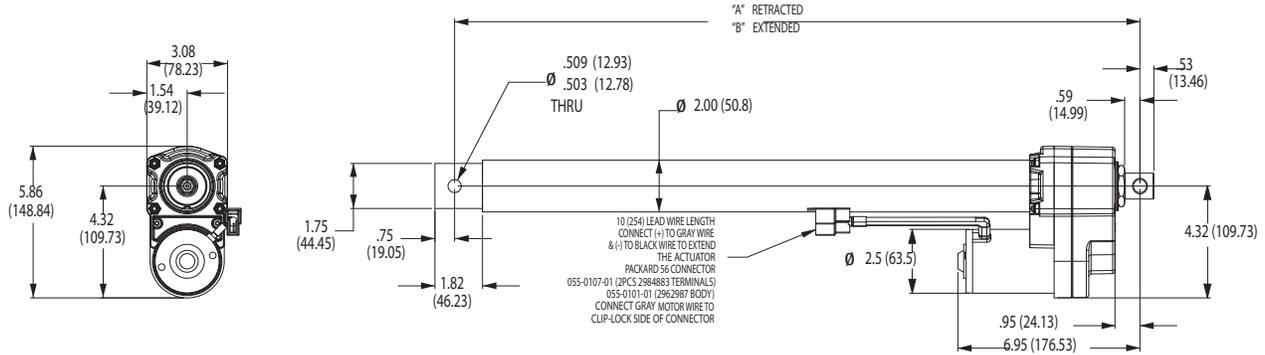
See page 20 for K2Js performance curves.  
 See page 27 for K2xJs performance curves.

## Dimensions

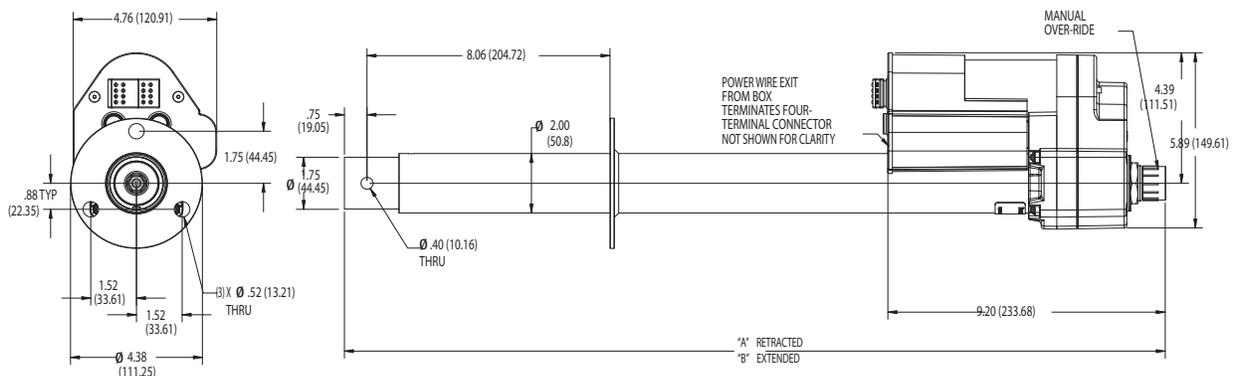
B-Track K2Js/K2xJs	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		8	200	10	254	12	300	14	355	16	405
A		20.98	533	22.98	584	24.98	634	26.98	685	28.98	736
B		28.98	736	32.98	838	36.98	939	40.98	1041	44.98	1142

**Note:** Special lengths available

### B-Track K2Js



### B-Track K2xJs



# B-Track K2RA

## Rotary Actuator DC Motor

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



Shown with extended gear box screws for ease of attachment.



Optional Configurations



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.

### 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 and 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

### Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 3000 lbs. (1360kg) 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: -30°F to 140°F (-34°C to 60°C)
- 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.)

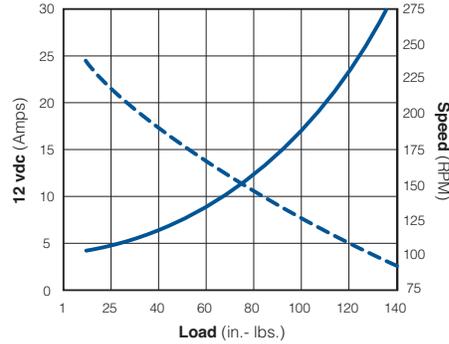
### Control/Connections

- 14 gauge stranded lead wires - SAE J1128 SXL cross linked polyethylene insulation Class F 257°F (125°C)
- Lead wires abrasion protected with braided 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)

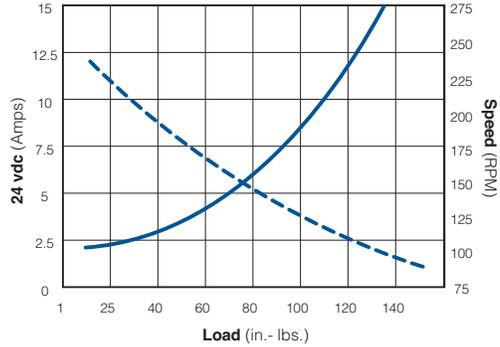
# B-Track K2RA

## Performance Curves Imperial

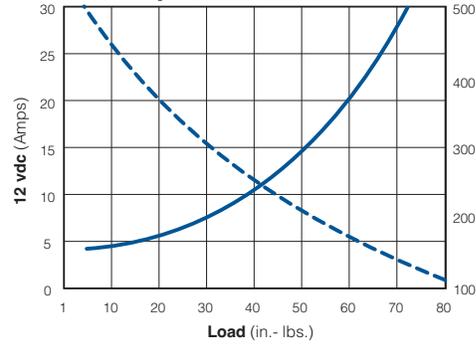
### K2RA20 Speed & Load @ 12 VDC



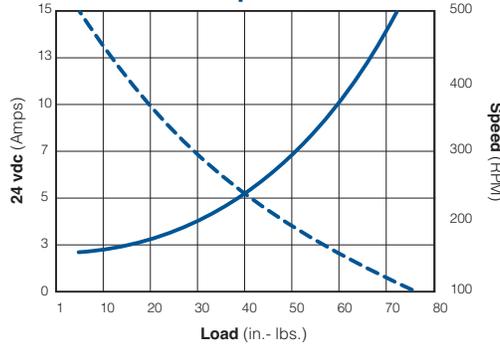
### K2RA20 Load & Speed @ 24 VDC



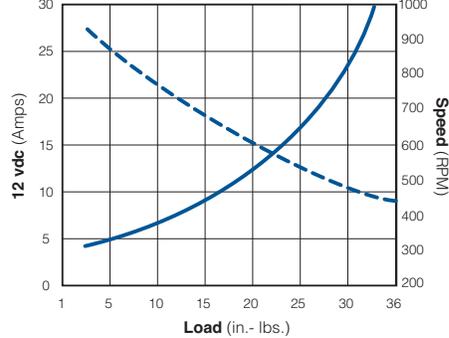
### K2RA10 Speed & Load @ 12 VDC



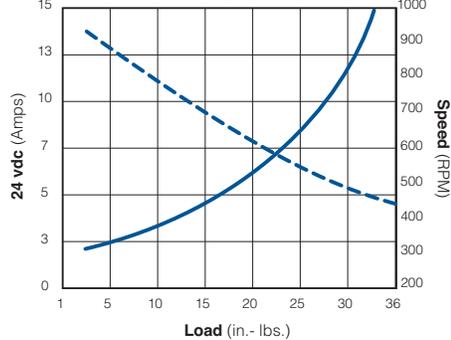
### K2RA10 Load & Speed @ 24 VDC



### K2RA5 Speed & Load @ 12 VDC

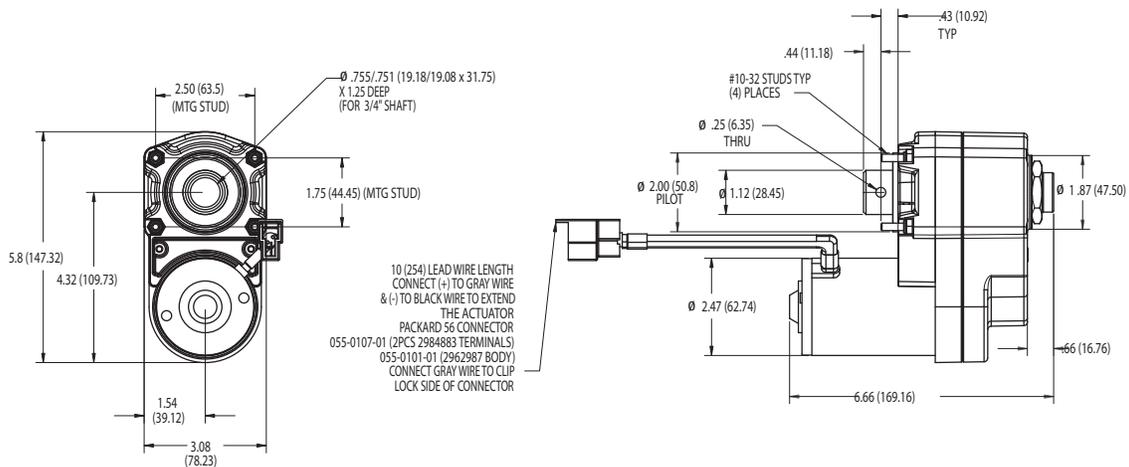


### K2RA5 Load & Speed @ 24 VDC



Current Draw ———  
Speed - - - - -

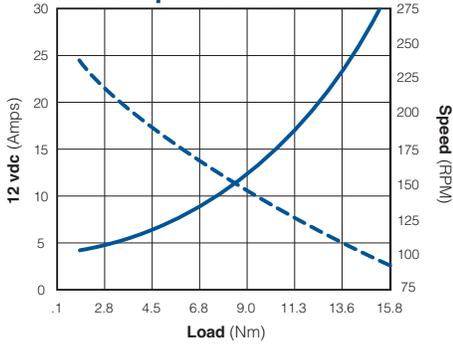
## Dimensions



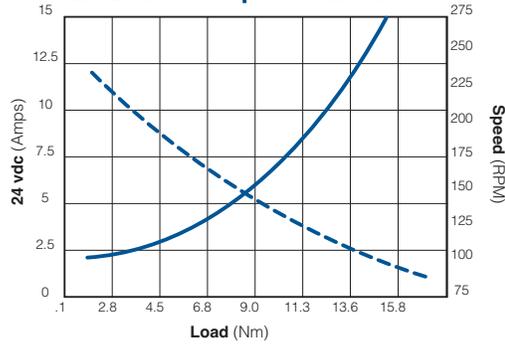
# B-Track K2RA

## Performance Curves Metric

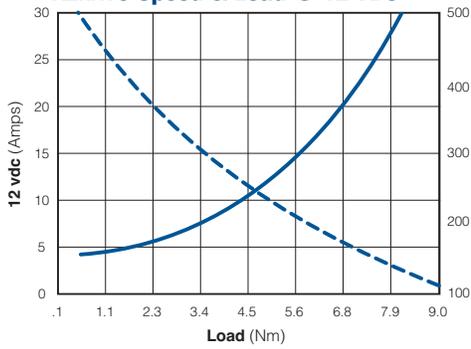
**K2RA20 Speed & Load @ 12 VDC**



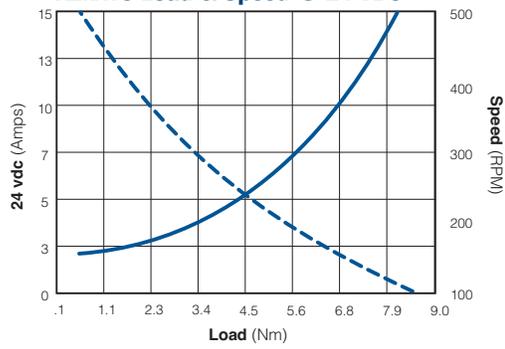
**K2RA20 Load & Speed @ 24 VDC**



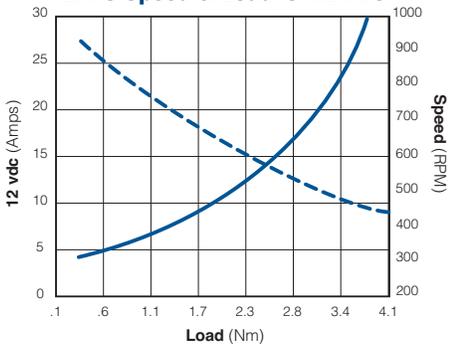
**K2RA10 Speed & Load @ 12 VDC**



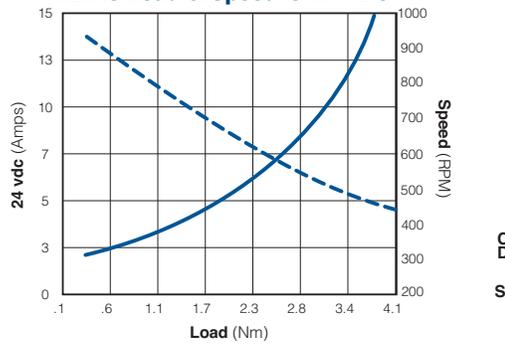
**K2RA10 Load & Speed @ 24 VDC**



**K2RA5 Speed & Load @ 12 VDC**



**K2RA5 Load & Speed @ 24 VDC**



Current Draw    
 Speed 

# Performance Features

## **Warner Linear Actuator Controls available for a wide variety of applications**

Warner Linear provides a full line of actuator controls well suited for a broad range of application needs.

They range from simple to use switch box controls for basic extend/retract function, to state-of-the-art microprocessor based digital electronic controls using SMT design and manufacturing processes.

### **Offered functions:**

**Basic extend and retract**

**Electric switch and electronic stroke limits**

**End of stroke outputs**

**Position feedback potentiometer and encoder outputs**

**Electronic current limit – fixed and programmable**

**Electronic dynamic braking**

**Fixed, manual and electronic adjustable end stops**

**Signal follower**

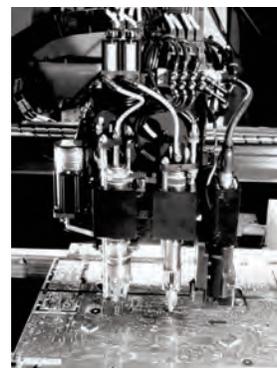
### **Dependable Operation**

Warner Linear controls are state-of-the-art using surface mount electronic components and automated circuit board manufacturing methods. Each control is field durability tested for use in demanding applications.

### **Rugged and Reliable**

Use of SMT manufacturing processes assures consistent performance from control to control.

- Integrated actuator sensors are protected from the environment
- Solid-state electronic components and non-contact sensors (hall effect)
- Actuator mounted or remote mountable



### **Easy To Use**

- Simple plug-and-play switch box controls are hassle-free – just plug in and connect the power clips.
- Basic position controls are integrated with the actuators to simplify ease of use and maintain the rugged duty capabilities of Warner Linear actuators. They are easy to use and plug-and-play ready.
- Advanced microprocessor based controls are also available. They employ digital electronics using SMT processes and offer a broad range of intelligent actuator control options. Consult your Warner Linear technical specialist on how advanced controls might suit your needs.

Warner Linear BTc controls are specifically designed for use with the B-Track line of actuators. Some controls and options are also suitable for use with the M-Track models.



# Power Supply/Control/Accessory Selection Guide

---

## Customer Provides Power

### Switch Box for 12, 24, or 48 volt motor actuators

Input: 12ft (3.66m) cable

Output: 1ft cable or optional cables (M1, K2, K2x, RA actuators)

Page 45

### Switch Box for 115 or 230 volt actuators

Input: 6ft (1.83m) cable

Output: customer supplied connector (K2AC, K2XAC actuators)

Page 45

## Power Supply Required

### 12 or 24 volt DC Power Supply for M1 actuator

Options: AC input with plug

AC input without plug

Switch included

Switch not included

Page 46

### 90 volt DC Power Supply for K2/K2x actuator

Options: AC input with plug

AC input without plug

Switch included

Switch not included

Speed Potentiometer

Page 47

### 24 volt DC Power Supply for K2/K2x actuator

Options: AC input with plug

AC input without plug

Switch included

Switch not included

Page 48

**NOTE:** All power supply designs are provided with a one foot long cable for connection to actuator. Accessory cables are available in lengths of 5, 10, 20, 25 foot (1.524, 3.048, 6.096, 7.62mm) length.

## Controls

### End of travel limit switches

Factory set/not adjustable (P1)

Field Adjustable (EP1)

Page 50-52

Page 53

### Current limit control

Page 54

### Position feedback control

Page 55

### Wireless actuator control

Page 56

# Simple Switch Box Controls

All actuators are controlled using an external-retract-off switching function. The SBC-DC and SBC-AC provide a simple mounted switch compatible with Warner Linear actuators.

## SBC-DC



- Power:** Compatible with 12, 24 and 48 volt DC actuators
- Function:** Extend, Retract, Off via DPDT momentary toggle switch
- Enclosure:** ABS plastic enclosure 4.7" L x 3.2" W x 2.2" H (119.38mm L x 81.28mm W x 55.88m H)
- Input Cable:** 12ft. (3.66m), 2 wire, 14AWG cable with alligator clip ends
- Output Cable:** 1ft. (.30m) cable provided. Designate connector appropriate to actuator being used  
Optional extension cables are available in 5-25ft (1.524 - 7.62m) lengths

Model	input Power	Connector Style	Mating Cable
<b>SBC</b>	<b>DC</b>	<b>3</b>	<b>10</b>
		<b>Connector Style: (One End Female Weatherpack) Other End is Male Version of:</b> 1=Mini Packard 56 (M-Track) 2=Packard 56 3=Weatherpack 4=Deutsch (DT06-2S)	<b>Length of Mating Cable in Feet</b> (If blank, switch has no mating connector)

## SBC-AC

- Power:** Compatible with 115 or 230 volt VAC input
- Function:** Extend, Retract, Off via DPDT momentary contact switch
- Enclosure:** 4.72" L x 4.72" W x 3.15" (119.89mm L x 119.89mm W x 80.01mm H) long dust tight enclosure
- Protection:** Externally mounted 5 Amp fuse on outside of enclosure for easy replacement
- Input Cable:** 6ft. (1.829m) open ended tinned AC input cable provided
- Output Cable:** Sealed cable gland included for customer supplied output cable

Model	input Power	input Wire Style
<b>SBC</b>	<b>AC</b>	<b>A</b>
<b>Input Wire Style</b> Blank=6' (1.829m) Open (3) Strand Wire A=6' (1.829m) Long 3 Prong Plug		

## Optional Extension and Control Power Cables

Power supplies include a 1ft. (.30m) length cable to connect to actuator.

Accessory cables may be ordered in lengths of 5, 10, 20 and 25 feet (1.524, 3.048, 6.096 and 7.62 meters) with the appropriate connector for the actuator selected. (mini-packard, Packard 56, Weatherpack, Deutsch)

Live Power (LP) cables are required to provide constant power to BTc Limit switch or potentiometer feedback circuits mounted on the actuator. LP cables provide two connectors.

Signal Cable (SC) cables provide the LP cable with two additional connectors for use with limit switch or potentiometer feedback.

# M-Track Power Supply

## Extension Cable Part Number

12 & 24 Volt Model <b>SBC</b>	Number of Conductors <b>— 2</b>	Cable Type <b>PC</b>	Connector Style <b>3</b>	Dual Output <b>Y</b>	Length in Feet (Meters) <b>— 20 (6.096)</b>
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**Cable Type**

PC= Power Cable (Carol "J" Cord with Shrink Sleeves)  
 SC= Signal Cable (with Shrink Sleeves Only)  
 LP= Live Power (22 AWG, 4 conductor wire but only use red & black wires. Trim white & green wires flush with insulation.)

**Connector Style: One End Male, One End Female**

1=Mini Packard 56 (M-Track)  
 2=Packard 56  
 3=Weatherpack  
 4=Deutsch

**Dual Output "Y" Cable**

(Used only on PC & LP options)

### Example

## SBC-AC Power Supply



- Input:** 85-264 volts AC
- Output:** 12 volts @ 5.4Amps  
24 volts @ 2.7Amps
- Input Cable:** Standard: 6ft. (1.829m) ( open end, tinned cable)  
Optional: 6ft. (1.829m) with 115 VAC 3 prong plug
- Output Cable:** 1ft. (.30m) length cable with 2-pin Packard 56 (for M-Track 1)  
Optional extension cables can be ordered in 5-25ft. (1.524-7.62m) lengths
- Enclosure:** 4.72" x 4.72" x 3.15" (119.89mm L x 119.89mm W x 80.01mm H)  
polycarbonate housing NEMA 4, 4x, 12, 13
- Operating Temperature:** -30° F to 140° F (-34°C to 60°C)
- Ratings:** CE, TUV, UL/cUL Conducted EMI meets EN55022 and ROHS
- Protection:** External fuse provided
- Switching:** No switch or DPDT momentary switch

### Example

AC Power Supply <b>SBC</b>	Input Power <b>AC2</b>	Output Power <b>12V</b>	Connector Style <b>1</b>	Input Wire Style <b>A</b>	Switch <b>S</b>	Readout <b>R</b>
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**Input Power**

AC=115 VAC input  
AC2=230 VAC input

**Output Power**

12V=12VDC (M-Track Only)  
24V=24VDC

**Connector Style: (Female Gender)**

1=Mini Packard 56 (M-Track)

**Input Wire Style**

Blank=6' (1.829m) Open (3) Strand Wire  
 A=6' (1.829m) Long 3 Prong Plug (Plug only available on 115 VAC input)

**Switch**

S=Rocker Switch  
Blank=No Switch

**Readout**

R= 0-10V

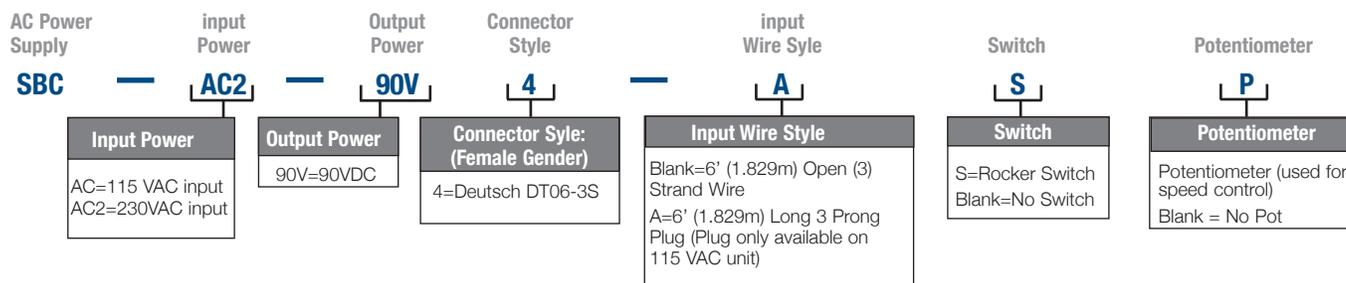
# K2/K2X Power Supplies

## SBC-AC/SBC-AC2 Power Supply 90 volt output



- Input:** AC: 115 volt AC  
AC2: 230 volt AC
- Output:** 90 volts DC @ 5 Amps
- Input Cable:** Standard: 6 ft. (1.829m) open end, tinned cable  
Optional for 115 AC 6 ft. (1.829m) with 115 VAC 3 prong plug
- Output Cable:** 1 ft. (.30m) cable with 3-pin Deutsch connector  
Optional extension cables can be ordered in 5-25 ft. (1.524-7.62m) lengths
- Enclosure:** 4.72"L x 4.72"W x 3.15"H (119.89mm L x 119.89mm W x 80.01mm H) polycarbonate housing NEMA 4, 4x, 12, 13
- Fusing:** External fuse mounted on enclosure for easy replacement
- Switching:** DPDT momentary rocker switch for manual actuator control or Customer may supply their own switch
- Potentiometer:** Optional speed pot allows for output voltage adjustment (varies actuator speed)

### Example



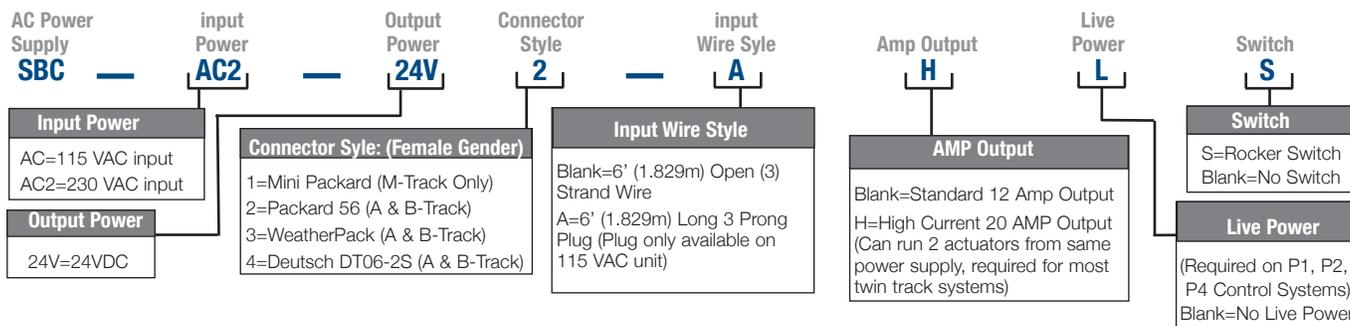
# K2/K2X Power Supplies

## SBC-AC/SBC-AC2 Power Supply 24 volt output



- Input:** AC: 115 volt AC  
AC2: 230 volt AC
- Output:** 24 volts @ 12 Amps
- Input Cable:** Standard: 6 ft. (1.829m) open end, tinned cable  
Optional for 115 AC 6 ft. (1.829m) with 115 VAC 3 prong plug
- Output Cable:** Standard 1 ft. (.30m) cable: specify connector to match actuator:  
 1) Mini Packard standard for M-Track actuators  
 2) Packard 56 standard on K2 and K2x model actuators  
 3) Packard WeatherPack optional on K2 and K2x model actuators  
 4) Deutsch DT06-2S optional on K2 and K2x model actuators  
 Optional extension output cables can be ordered in 5-25 ft. (1.524-7.62m) lengths
- Enclosure:** 6.69"L x 6.69"W x 3.54"H (169.93mm L x 169.93mm W x 89.916mm H) polycarbonate housing NEMA 4, 4x, 12, 13
- Fusing:** External fuse mounted on enclosure for easy replacement
- Switching:** DPDT momentary rocker switch for manual actuator control or Customer may supply their own switch
- Live Power Option:** When used with BTc control options (limit switch, potentiometer feedback) the Live Power option is required. Live power option provides a constant output power source for external control components regardless of output power to the actuator. (See Extension Cable selection to select the correct cable for this option.)

### Example



# Switch Only Units SO

Any of Warner Linear's K2 or K2E actuators can be provided with hall-effect or reed switches to be used by the customer to control actuator start/stopping & positioning. The hall-effect and reed switches are both non-contact, and use a magnet mounted on the screw inside the actuator tube to activate. Actuators can have 2-4 switches dependent on stroke length.

## Hall Effect

The hall-effect switch is an NPN output/current sinking and requires a pull-up resistor to operate.

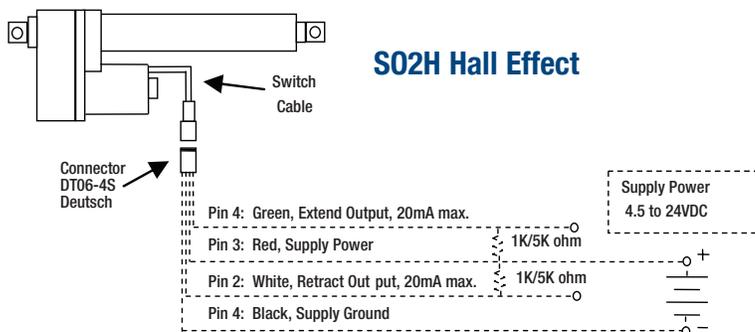
\*The Hall-effect switches can also be configured to provide positioning information. A ten tooth wheel with two switches is used to provide an A and B pulse for position and direction along with a home switch and fully extended switch. This unit would be a "SO4" configuration.

Hall-Effect Switch Part Numbers Available, with K2 actuator product: **SO2H** – 2 end limit switches

Hall-Effect Switch Part Numbers Available, with K2E or K2XE actuator product:

- SO2H** – 2 end limit switches
- SO3W** – 2 wheel position switches & home end limit switch
- SO3H** – 2 end & 1 mid limit switches
- SO4W** – 2 wheel position switches & 2 end limit switches
- SO4H** – 2 end & 2 mid limit switches

**Note 1:** Consult factory for other options if needed  
**Note 2:** Units with 3 switches can be no shorter than 4" and units with 4 switches can be no shorter than 6".



\*All dotted lines are customer connections

## Hall Effect

- Supply Voltage:** 4.75 to 24 VDC
- Output:** Current sinking, max. of 25mA
- Lead Wires:** 24 AWG
- Operating Temperature:** -40 to 85 deg C
- Protection:** Reverse polarity protected
- Housing:** Rugged thermoplastic, sealed

## Reed

- Supply Voltage:** Up to 200 VDC max. O switch  
Up to 175 VDC max. C switch
- Switching Current:** 1.2 Amps max. O switch  
1.5 Amps max. C switch
- Contact Rating:** 10 Watts max. O switch  
5 Watts max. C switch
- Lead Wires:** 24 AWG
- Operating Temperature:** -40 to 105 deg C
- Housing:** Hermetically sealed

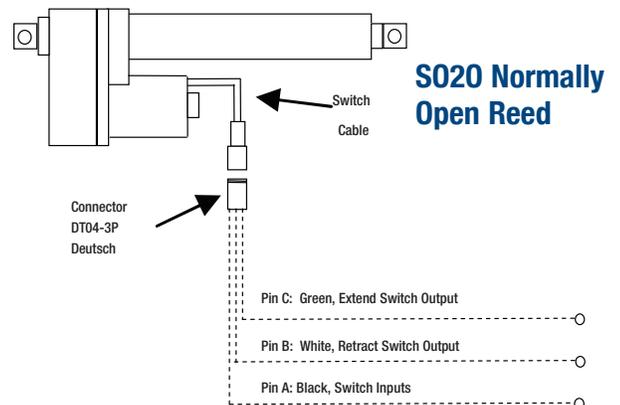
## Reed Switch

The reed switch can only be provided on a K2E actuator (adjustable unit). Switches can be selected as normally open (O) or normally closed (C).

Reed Switch Part Numbers Available, with K2XE actuator product only:

- SO2O** – 2 Normally Open, adjustable reed switches
- SO2C** – 2 Normally Closed, adjustable reed switches
- SO3O** – 3 Normally Open, adjustable reed switches
- SO3C** – 3 Normally Closed, adjustable reed switches
- SO4O** – 4 Normally Open, adjustable reed switches
- SO4C** – 4 Normally Closed, adjustable reed switches

**Note 1:** Consult factory for other options if needed  
**Note 2:** Units with 3 switches can be no shorter than 4" and units with 4 switches can be no shorter than 6".



# P1.x Electronic Stroke Limit Control

## Standard



The P1.x Limit Switch control provides end of travel positioning through the use of a hall effect sensor and motor mounted relay.

Hall effect sensors are factory mounted within the actuator cover tube. The sensor position is set at the factory and is not field adjustable (See EP.1 for adjustable switch functions). The hall effect sensors are sealed for life and are not subject to wear.

The Electronic Stroke control package consists of the hall effect sensors and a motor mounted relay within an enclosure suited for harsh environments.

A Zener diode suppression is used on both input and outputs for added protection from electrical spikes. Unit reversing is achieved by reversing input power polarity to the motor.

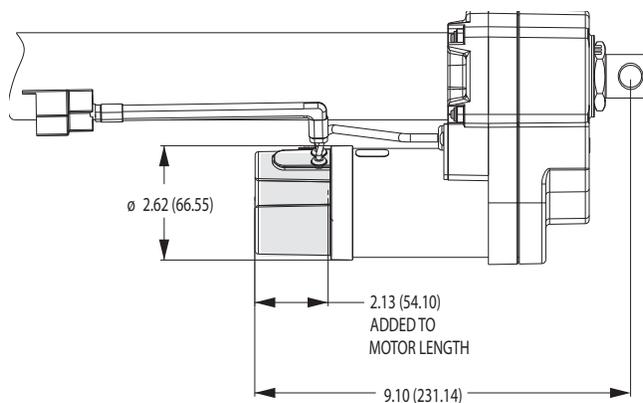
## Specifications

**Power:** 25 Amps max. @ 12 volts  
12.5 Amps max. @ 24 volts

**Operating Temperature:** -30° to +140° F (-34°C to 60°C)

## Options

- P1.0** Standard Stroke Limit Control
- P1.1** Same as P1.0 with two LEDs on the outside of the control module. LEDs indicate when end of travel has been reached.
- P1.2** Same as P1.0 with two 12/24 volt, 0.5 Amps outputs that can be used to signal an external switch, relay, lamp or PLC input.
- P1.2LE** Two +5 VDC 25ma outputs plus a ground to provide a signal when end of travel is reached. This output can be used to power LEDs.



# BTc Controls P1-DC

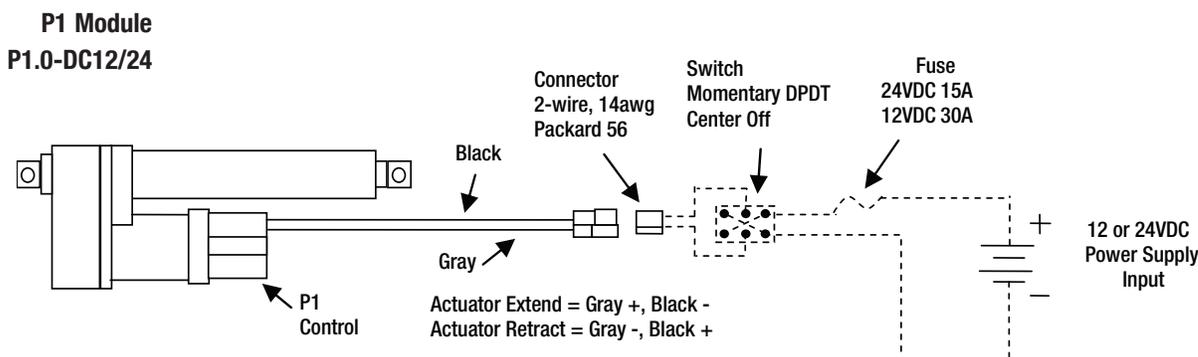
## P1 Electronic Stroke Limit Control

### Model Selection

Model No.	Input Voltage (vdc)	Maximum Output Current (Amps)	Features
P1.0 (DC12)	12	25	Base = Electronic Stroke Limit with Electronic Dynamic Braking
P1.0 (DC24)	24	12.5	Base = Electronic Stroke Limit with Electronic Dynamic Braking
P1.1 (DC12)	12	25	Base & LED indicators on Housing
P1.1 (DC24)	24	12.5	Base & LED indicators on Housing
P1.2 (DC12)	12	25	Base & +12 vdc Outputs
P1.2 (DC24)	24	12.5	Base & +24 vdc Outputs
P1.2LE (DC12)	12	25	Base & LED Outputs +5 vdc
P1.2LE (DC24)	24	12.5	Base & LED Outputs +5 vdc

**Note:** For adjustable external end limits add E before P

### Wiring Diagrams



### Operation

When the “Customer Supplied Switch” is held in the direction allowing positive 12 or 24VDC to the gray wire and 12 or 24VDC ground to the black wire, the actuator will extend until it reaches the end of stroke. At the end of stroke, which is determined by the factory set location of the hall effect switches inside the actuator cylinder, power will be removed to the actuator by the P1.0 control. The actuator will no longer move in that direction even if the customer supplied switch is held.

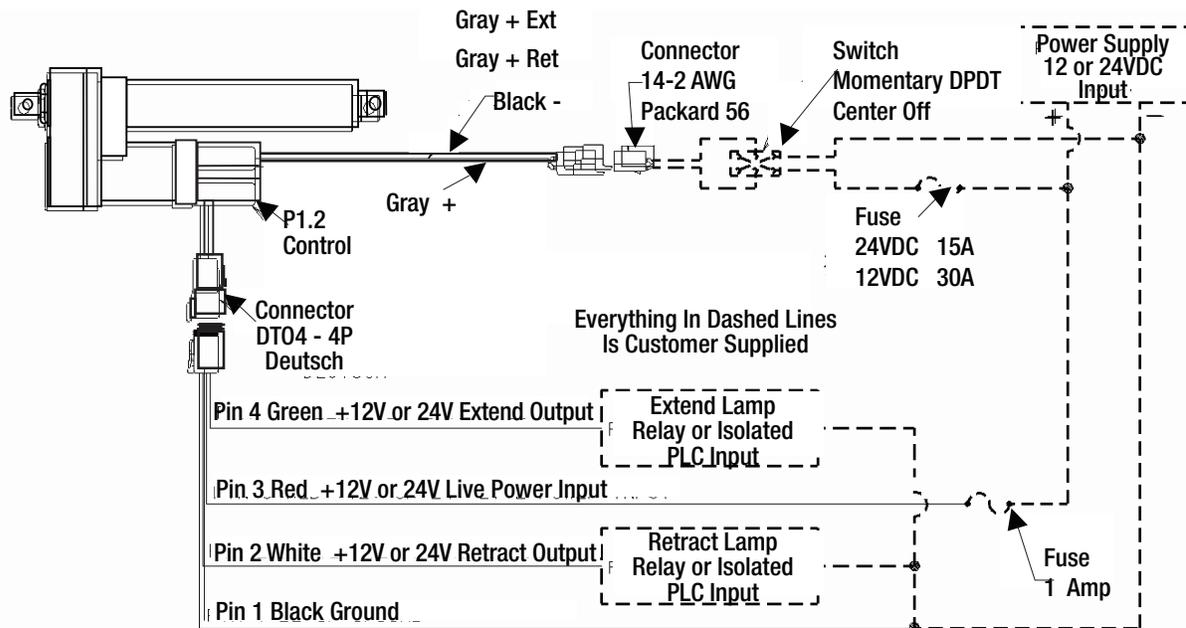
When the switch is held in the opposite direction so the positive lead of the 12 or 24VDC signal is on the black wire and the 12 or 24VDC ground is on the gray wire, the actuator will retract until it returns to the full home position which is determined by the factory set location of the second hall effect switch.

If the actuator does not stop when at either end then something in the actuator or P1.0 control may be damaged. Please call the factory for further analysis.

The actuators are 100% tested before leaving the factory.

# BTc Controls P1-DC

## P1 Electronic Stroke Limit Control



### Operation

When the “Customer Supplied Switch” is held in the direction allowing positive 12 or 24VDC to the gray wire and 12 or 24VDC ground to the black wire, the actuator will extend until it reaches the end of stroke. At the end of stroke the “Extend Output” (green wire) will have +12 or 24 Volts to ground, indicating it is at the end. This signal can be used to light a Lamp, signal a relay coil, or an isolated PLC input that only requires 500mA or less. This output will only be on as long as power is maintained from the “Customer Supplied Switch”.

However, if the output needs to be on even if the “Customer Supplied Switch” is not activated then the “Live Power input” can be used. This will provide power all the time for the output to remain on whenever the Actuator is at either travel end.

Apply +12 VDC (for 12VDC unit) or +24 VDC (for @24VDC unit) to the red wire of the Deutsch (DT04-4P) 4 pin connector and ground to the black wire. This supply needs to be the same supply as the actuator and will require less than 500mA.

When the switch is held in the opposite direction so the positive lead of the 12 or 24VDC signal is on the black wire and the 12 or 24VDC ground is on the gray wire the, actuator will retract until it returns to full home position. At the full home position, the “Retract Output” (white wire) will have +12 or 24 volts to ground.

**CAUTION Do not reverse polarity at live power input (i.e. 22GA red & black wires) or damage will occur.**

# EP1.x Electronic Stroke Limit Control

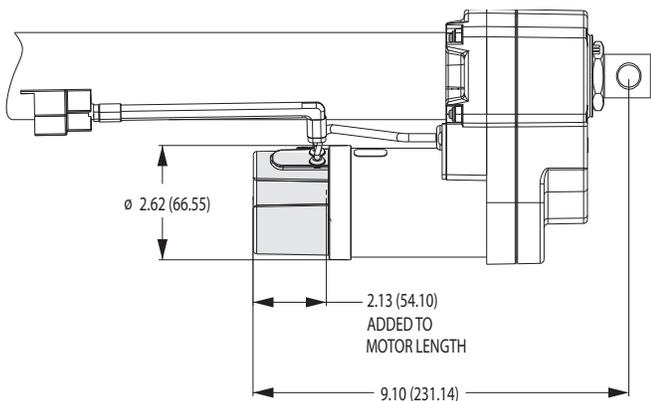


The EP1.x Limit Switch control provides end of travel positioning through the use of a magnetic switch and motor mounted relay.

The EP1 limit switches are mounted in a channel on the actuator cover tube accessible below a durable cover. (For factory set limit switches see P1.0 designs). The EP1 switches are field adjustable.

The Electronic Stroke control package consists of the magnetic sensors and a motor mounted relay within an enclosure suited for harsh environments.

A Zener diode suppression is used on both input and outputs for added protection from electrical spikes. Unit reversing is achieved by reversing input power polarity to the motor



## Specifications

**Power:** 25 Amps max. @ 12 volts  
12.5 Amps max. @ 24 volts

**Operating Temperature:** -30° to +140° F (-34°C to 60°C)

## Options

- EP1.0** Standard Stroke Limit Control
- EP1.1** Same as P1.0 with two LEDs on the outside of the control module. LEDs indicate when end of travel has been reached.
- EP1.2** Same as P1.0 with two 12/24 volt, 0.5 Amps outputs that can be used to signal an external switch, relay, lamp or PLC input.
- EP1.2LE** Two +5 VDC 25ma outputs plus a ground to provide a signal when end of travel is reached. This output can be used to power LEDs.
- EP1.4** Same as P1.0, end limit stopping with 0-10K ohm potentiometer output.
- EP1.5** End limit stopping with end limit outputs and 0-10K potentiometer outputs.



# Controls PQS

## PQS Quick Stop Control



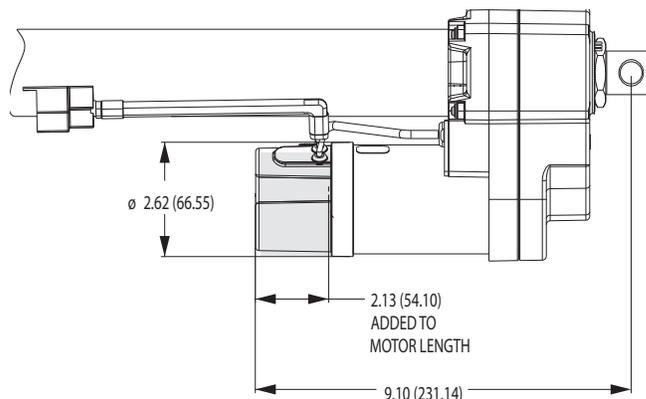
The PQS Quick Stop Control is an adjustable bi-directional current control that monitors motor current draw during actuator movement. If current draw exceeds set point due to obstruction or overload, the control removes power from the motor stopping the actuator. The PQS control does not currently have internal memory. Therefore, if switched power is removed and reapplied in the same direction as the obstruction and the obstruction has not been removed the actuator could move in that same direction until it trips again. The current is set to trip in approximately 100 milliseconds.

Current limits are set via potentiometers accessible from the side of the control housing. Current limits can be adjusted independently for each direction of movement.

### Specifications

**Supply Power:** 25 Amps @ 12 volts dc  
12.5 Amps @ 24 volts dc

**Operating Temperature:** -30° to 140° F (-34°C to 60°C)

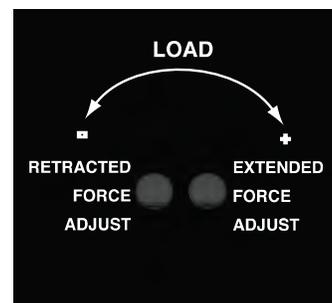
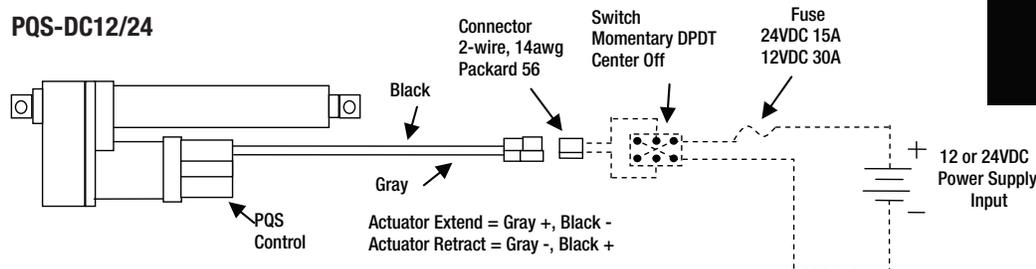


### Changing extend or retract load limits:

- Remove access plugs on the side of control.
- Rotate trim pot counter clockwise for min. load.
- Rotate trim pot clockwise for max. load.
- Adjust the Retract pot to control closing force.
- Adjust the extend pot to control lifting force.
- Adjust as viewed with extension rod pointing up.
- Reinstall access plugs.

### Wiring Diagrams

**PQS Module**  
**PQS-DC12/24**



### Model Selection

Model No.	Input Voltage (vdc)	Maximum Output Current (Amps)	Features
PQS	12	25	Base = Electronic Stroke Limit with Mid-stroke Current Limit and Electronic Dynamic Braking
PQS	24	12.5	Base = Electronic Stroke Limit with Mid-stroke Current Limit and Electronic Dynamic Braking
PQS.2	12	25	Base & +12VDC Trip Outputs
PQS.2	24	12.5	Base & +24VDC Trip Outputs

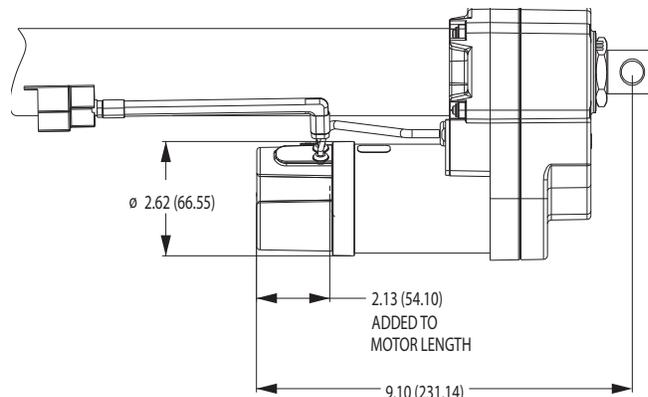
# BTc Controls P2-DC

## P2-DC Position Feedback Control



### Specifications

- Supply Power:** 25 Amps @ 12 volts dc  
12.5 Amps @ 24 volts dc
- Operating Temperature:** -30° to 140° F (-34°C to 60°C)
- Protection:** Zener diode suppression on the input and output for protection from electrical noise.

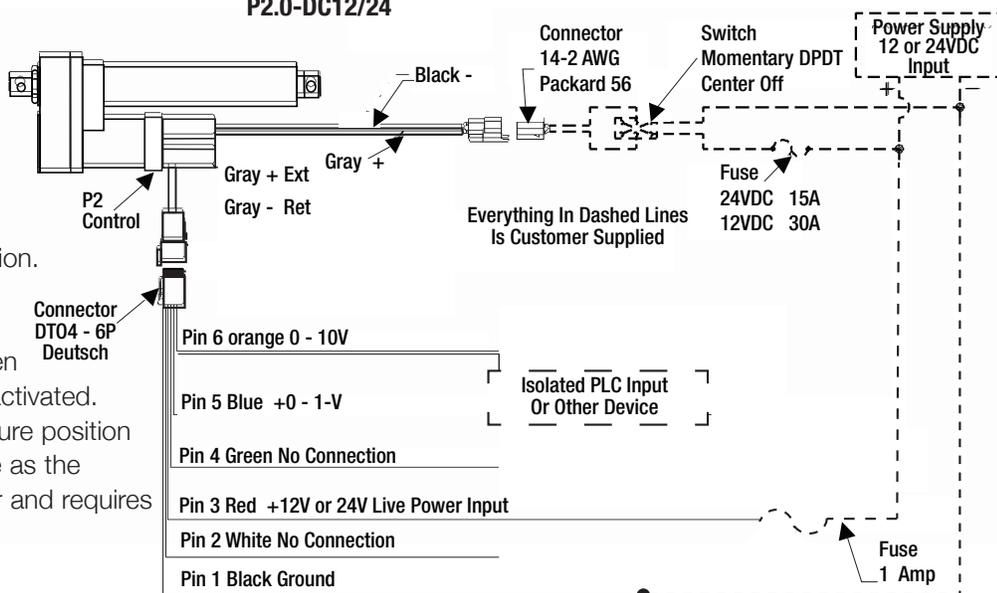


The P2.0 Position Control is a microprocessor position feedback control providing a 0 -10 volt DC output indicating actuator travel. The control uses two inductive pulse count sensors and a counting wheel to accurately determine actuator position. A third sensor at the full retract position provides a zero or home position indication.

Hall Effect limit switches (those used in the P1.0 control) are used to provide end of travel positioning and will shut off actuator at both full extend and retract settings. All sensors are non-contact and sealed for life. They are integrated within the actuator and control to protect them from contamination.

Live Power is needed to maintain the 0-10VDC analog output signal even when the "Customer Supplied Switch" is not activated. This feature has to be connected to ensure position is saved. The power has to be the same as the switched power supplied to the actuator and requires less than 100mA.

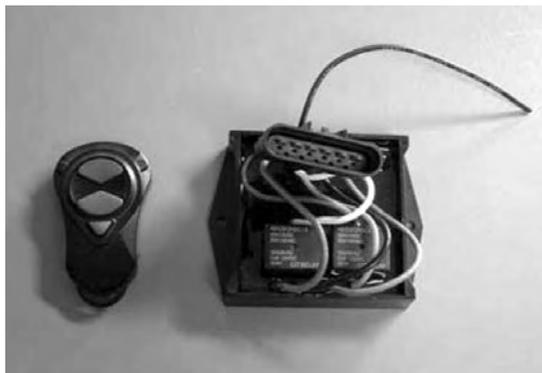
### Wiring Diagram P2 Module P2.0-DC12/24



### Model Selection

Model No.	Input Voltage (vdc)	Maximum Output Current (Amps)	Features
P2.0 (DC12)	12	25	Base = Electronic Stroke Limits with 0 to + 10V Analog Output and EDB
P2.0 (DC24)	24	12.5	Base = Electronic Stroke Limits with 0 to + 10V Analog Output and EDB

# Wireless Actuator Control



Warner Linear's wireless actuator control can be used to remotely control a 12 or 24VDC actuator up to 100 ft. away. It can be used with our standard line of P1 end limit controls. The unit is offered in a single and dual actuator output for the 12VDC unit. The 24VDC unit is only available with two actuator outputs. All models have a manual override feature to operate the actuator without a remote. The wireless system is an RF design operating at 915MHz. One remote is provided with the receiver unit, but the receiver can have up to four remotes programmed to work with it.

## Specifications

<b>Power:</b>	12/24 VDC
<b>Maximum Current:</b>	20 Amps single, 10 Amps dual
<b>Operating Temperature:</b>	-20° to +140° F (-28°C to 60°C)
<b>Operating Frequency:</b>	915 MHz
<b>Enclosure:</b>	IP67
<b>Replaceable Remote Battery:</b>	CR2032, life expectancy dependent on use, but should last approx. 2 years

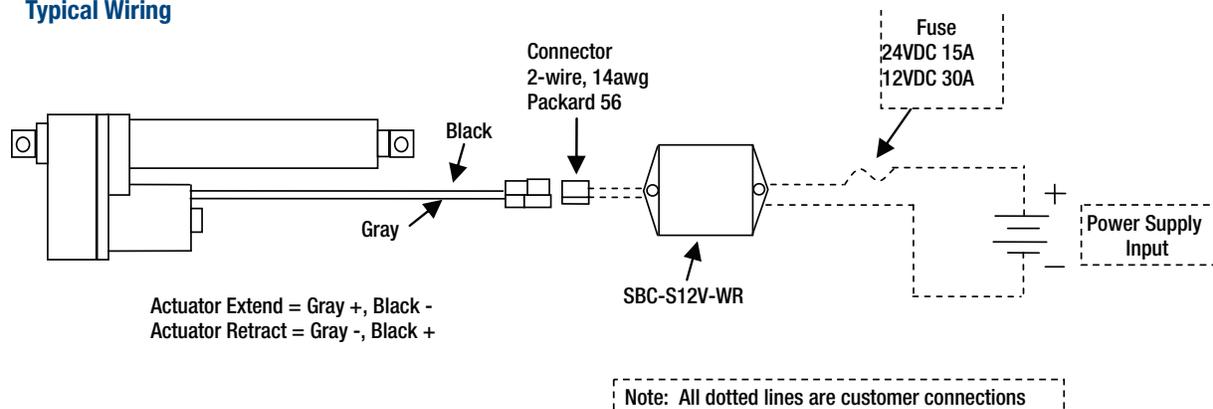
## Models Available

SBC-S12V-WR:	20 Amp, Single Output
SBC-D12V-WR:	10 Amp, Dual Output
SBC-D24V-WR:	10 Amp, Dual Output

## Accessories

- Remote:** Single Output, SBC-SWT
- Dual Output:** SBC-DWT
- Remote Lanyard:** 059-0200-50
- Remote Holder w/ Clip:** SBC-HDR
- Connector:** Delphi 135 21467 for single output  
Tyco 350735-1 for dual output

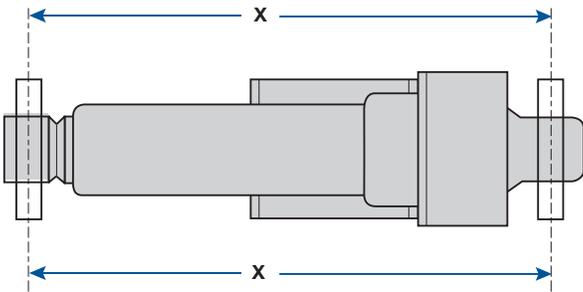
### Typical Wiring



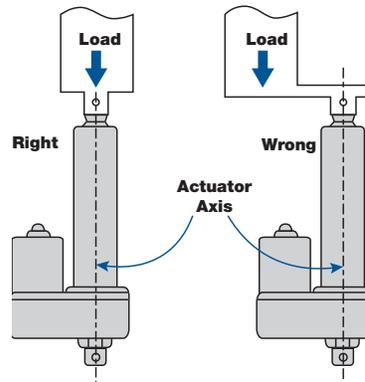
# General Mounting Information

Warner Linear actuators are quickly and easily mounted by slipping pins through the holes at each end of the unit and into the brackets on the machine frame and load to be moved.

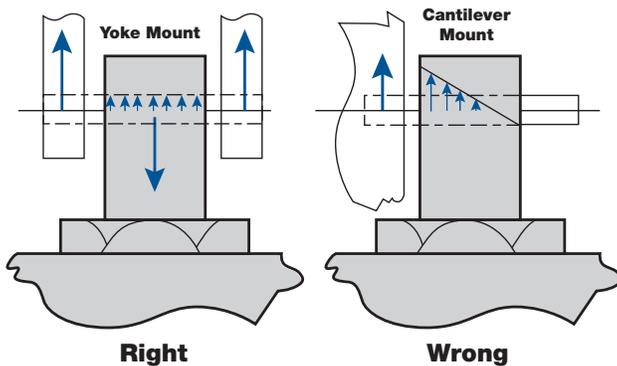
Use of solid pins provide maximum holding capability with a retaining ring or cotter pin on each end to prevent the solid pin from falling out of the mounting bracket (it is best to avoid roll pins and spring pins).



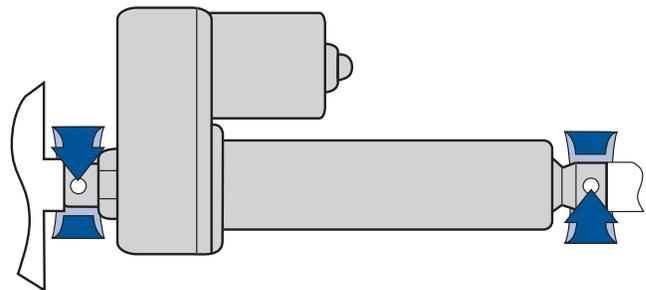
Mounting pins must be parallel to each other as shown above. Pins which are not parallel can cause excess vibration or actuator binding.



Loads should act along the axis of the actuator. Off-center loads may cause binding and lead to premature unit failure.



Ensure that mounting pins are supported at both ends. Cantilevered mounting is unacceptable. Failure to provide proper support will shorten unit life.

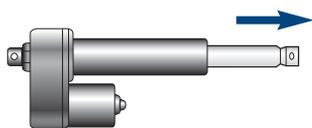


Do not attempt to mount M-Track actuators by the cover tube. The tube is not designed to support the forces required for tube mounting.

All actuator mounting supports must be capable of withstanding the load and torque developed when the unit extends or retracts. Restraining torque values are also provided with the details on each unit.

**M-Track** Torque created 20 inch pounds (2.3 Nm)  
**All others** Torque created 100 inch pounds (2.3 Nm)

# Glossary



**Figure 1** Axial load

## Axial load

A load along the axis of the actuator screw (see figure 1).



**Figure 2** Cantilevered mount

## Back drive

Force applied on a ball bearing nut that causes rotational torque to reverse direction. A force sufficient to cause a unit to reverse direction.

## BTc

B-Track control family.

## Cantilevered mount

A mounting where the mounting pin is not supported on both sides. Cantilevered mounts are common causes of failure (see figure 2).

## Clevis mount

A U-shaped metal piece that has the ends drilled to accept a pin or bolt (see figure 3).

## Compression load

Compression loading will press on the unit (see figure 4).

## Cover tube

The outer tube or cover that encloses the screw and extension tube for an actuator.

## Current vs. load

The load on the motor is measured by amperes (current). Current draw will increase as load increases.

## Cycle

Movement from a fully retracted to fully extended position and back to fully retracted.

## Duty cycle

The amount of 'on-time' vs total time. A 25% duty cycle means that a unit operates for 10 seconds out of 40 seconds, or 4 seconds out of 16 seconds.

## Eccentric load

An off-center load which may cause binding and shorten actuator life (see figure 5).

## End play

The amount of backlash or movement between the extension tube and the body of the actuator.

## Extension rate

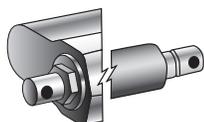
The rate of speed at which the actuator extends or retracts. This will vary based on loading (impact of load on speed is greater on DC units than on AC units).

## Efficiency

Ratio of input power to output power.

## ESL

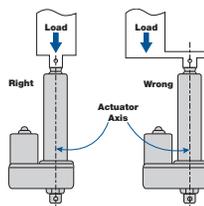
Electronic Stroke Limit magnetically activated hall effect switches that turn power off at end of stroke.



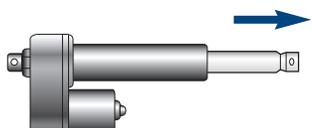
**Figure 3** Clevis mount



**Figure 4** Compression load



**Figure 5** Eccentric load



**Figure 6** Extended length

### Extended length

The overall length of the actuator from the center of the rear clevis to the center of the extension tube pin hole when the unit is at full extension (see figure 6).

### Load

The force, measured in pounds, that is applied as an axial load on the actuator.

### Load holding

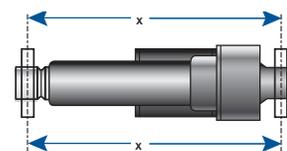
The ability of the actuator to hold a load stationary when power is off.

### Peak load

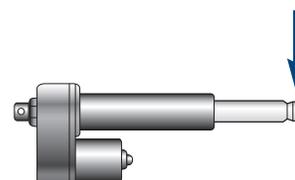
The maximum dynamic load that will be applied to the actuator, or that the actuator is capable of moving.

### Pin mount

The use of a dowel or pin through the hole in the clevis mount (on the rear of an actuator) or the extension tube (on the front of an actuator) (see figure 7).



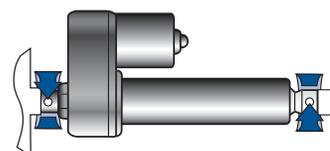
**Figure 7** Pin mount



**Figure 8** Radial load also side loading

### Radial load

A load applied to the side of the extension tube or across the body of the actuator. Normally radial loading will have a negative impact on unit life (see figure 8).



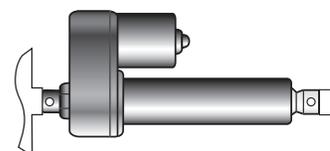
**Figure 9** Restraining torque

### Restraining torque

The torque required to prevent torque within the unit from causing rotation on the body or extension tube of the unit (see figure 9).

### Retracted length

The overall length of the actuator from the center of the rear clevis to the center of the extension tube pin hole when the unit is at full retracted position (see figure 10).



**Figure 10** Retracted length

### Side load

See radial loading (see figure 8).

### Static load

The maximum non-operating (or non-moving) load. Static load is the load holding capability of an actuator.

### Synchronous position

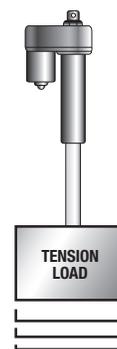
Having more than one actuator extend and retract together maintaining  $\pm 0.20$  position relative to each other.

### Tension load

A load that will tend to pull on the unit (see figure 11).

### Thermal overload

A switch within the motor that will open if the motor exceeds a predetermined heat level.



**Figure 11** Tension load



Legacy products: From 2005 through 2009 Warner Linear provided the A-Track series of actuators. These have been replaced by the K2, K2AC, K2x, and K2xAC products which are direct replacements for the A-Track 2, 5, and 10 models.

The A-Track designs will continue to be available on a limited basis for some time to come. We do not recommend these for new applications but will continue to provide them as replacement items so long as supply is available.

## General Duty



### A-Track 2

Efficient design offering low cost power capability. For use in applications where moisture or environmental contamination exist.

Drive Type:  
Acme Screw

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)  
330 @ 1.0 150 @ 1.0  
500 @ 0.5 227 @ 0.5

Stand. Stroke Length in. (mm)  
4, 6, 8, 12, 18, 24 (100, 150,  
200, 450, 600)

Input Voltage (vdc):  
12, 24

#### Typical Applications:

Drum Lifts  
Access Panel Lifts  
Walk Behind  
Sweeper/Polishers  
Tractor Hood Lifts  
Spout Positioning



### A-Track 5

Efficient design offering moderate power capability. For indoor use or where AC power is available.

Drive Type:  
Acme or Ball Screw

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)  
330 @ 1.2 120 @ 1.2  
500 @ 0.75 227 @ 0.75  
1000 @ 1.0 454 @ 1.0  
1300 @ 0.75 590 @ 0.75

Stand. Stroke Length in. (mm):  
4, 6, 8, 12, 18, 24 (100, 150,  
200, 450, 600)

Input Voltage (vac):  
115, 230

#### Typical Applications:

Work Table Positioning  
Conveyor Positioning  
Remote Louver Control  
Door Opening  
Vent Control  
Scissor Lift Tables



### A-Track 10

Completely self-contained for more demanding outdoor applications requiring moderate load and duty cycle capability.

Drive Type:  
Ball Screw

Load Capacity & Speed  
lbs. @ in./sec. (kg@mm/sec)  
500 @ 2.0 227 @ 2.0  
750 @ 1.0 340 @ 1.0  
1000 @ 0.5 454 @ 0.5

Stand. Stroke Length in. (mm)  
4, 6, 8, 12, 18, 24 (100, 150,  
200, 450, 600)

Input Voltage (vdc):  
12, 24

#### Typical Applications:

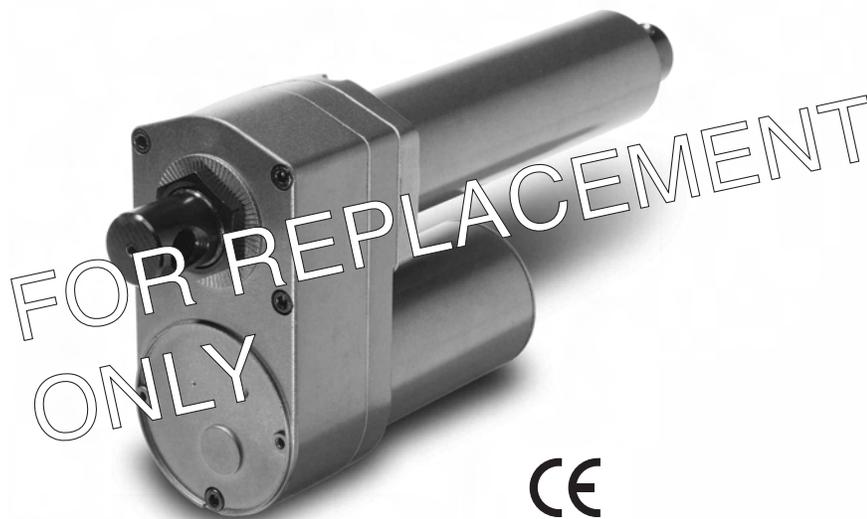
Boat Engine Covers  
Round Baler Covers  
Engine Hoods  
Scooter Lifts

# A-Track 2

## DC Motor Acme Screw

Up to 500 lbs. (227kg) Rated Load

Up to 1.0 in. (25.4mm)/sec. Travel Speed



### Features

- Sealed and gasketed for mobile or outdoor applications
- Overload clutch standard
- 4, 6, 8, 12, 18 and 24 inches (100, 150, 200, 300, 457 and 610 millimeters) stroke lengths
- 12 or 24 volt DC motors
- Acme screw drive
- Thermal overload included in double ball bearing motor.

### Typical Applications

- Gate and valve positioning
- Tailgate lifts
- Mobile equipment spout positioning control

### General Purpose DC Actuator

The A-Track 2 incorporates an Acme screw drive system that provides a value priced unit for moderate duty applications. The A-Track 2 includes lubrication for the life of the unit, combined with robust seal and O-ring design, creating a maintenance free design, even when used in applications with high humidity or dust.

### Specifications

<b>Load Capacity</b>	330 lbs. (150kg)	500 lbs. (227kg)
<b>Speed at Full Load</b>	1.0 in. (25.4mm)/sec	0.50 in. (12.7mm)/sec
<b>Input Voltage</b>	12 or 24 volt for all models	
<b>Static Load Capacity</b>	1000 lbs. (454kg) for all models	
<b>Stroke Length</b>	4, 6, 8, 12, 18 and 24 inches (100, 150, 200, 300, 457, 610mm) for all models	
<b>Clevis Ends</b>	.51 in. (13 mm) diameter	
<b>Duty Cycle</b>	25% for all models	
<b>Operation Temperature Range</b>	-15° F to +150° F (-26°C to + 65°C) for all models	
<b>Limit Switch</b>	Optional adjustable travel limit switches (20:1 only) 500 lb. (227kg)	
<b>Potentiometer</b>	Optional feedback potentiometer	
<b>Restraining Torque</b>	100 in. lbs. (11.30Nm)	
<b>Thermal Overload</b>	Thermal overload included in all motors	

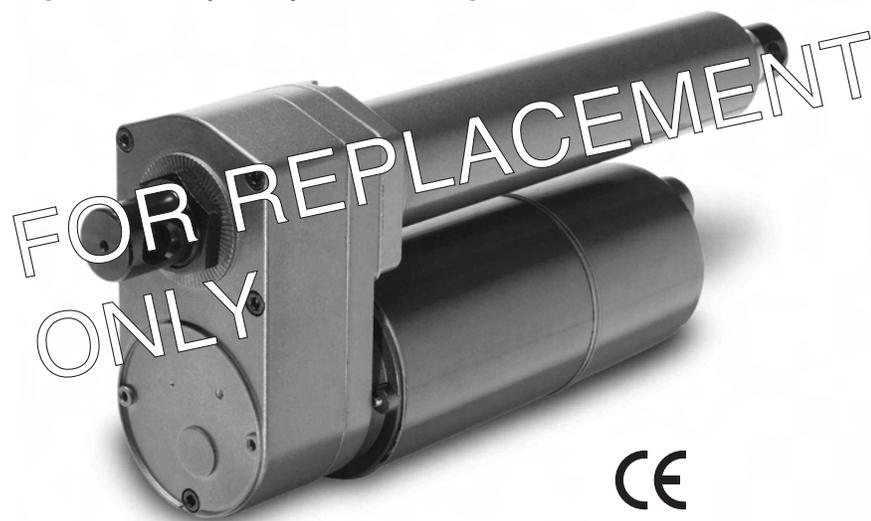


# A-Track 5

## AC Motor Acme Screw

Up to 500 lbs. (227kg) Rated Load

Up to 0.98 in. (25mm)/sec. Travel Speed



### Features

- Acme screw drive system
- 115 volt AC (60hz) and 230 volt AC (50hz) motors available
- 4, 6, 8, 12, 18 and 24 inches (100, 150, 200, 300, 457 and 610 millimeters) strokes
- Acme screw drive train
- Overload clutch standard
- Lubricated for life
- Capacitor included with motor

### Typical Applications

- Ergonomic lift tables
- Conveyor diverters
- Bin/tank cover lifts
- Roof vents

The A-Track 5 Acme screw actuator is a general purpose AC actuator with load capacities of 330 and 500 pounds (150 and 227kg) for use in moderate duty interior applications. The unit includes a power off motor stopping brake for faster stops and extra load holding capability. The Model 5 allows for stroke lengths of 4 to 24 inches (100 to 610mm) for in-plant or protected applications.

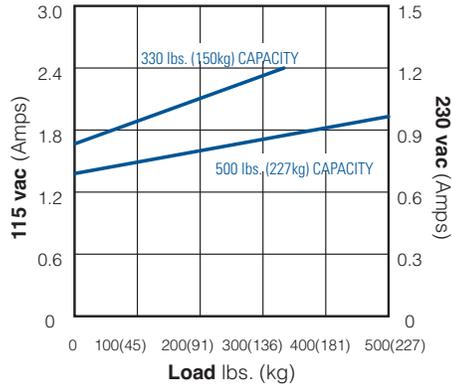
### Specifications

<b>Load Capacity</b>	330 lbs. (150kg)	500 lbs. (227kg)
<b>Speed at Full Load</b>	0.98 in. (25mm)/sec	0.55 in. (14mm)/sec
<b>Input Voltage</b>	115 vac (60hz) and 230 vac (50hz) for both models	
<b>Static Load Capacity</b>	1000 lbs. (454kg) for all models	
<b>Stroke Length</b>	4, 6, 8, 12, 18 and 24 inches (100, 150, 200, 300, 457, 610mm) for all models	
<b>Clevis Ends</b>	.51 in. (13mm) diameter	
<b>Duty Cycle</b>	25% for all models	
<b>Operation Temperature Range</b>	-15° F to +150° F (-26°C to + 65°C) for all models	
<b>Limit Switch</b>	Optional adjustable travel limit switches (20:1 only) 500 lb. (227kg)	
<b>Potentiometer</b>	Optional feedback potentiometer	
<b>Restraining Torque</b>	100 inch pounds (11.30Nm)	
<b>Thermal Overload</b>	Thermal overload included in all motors	

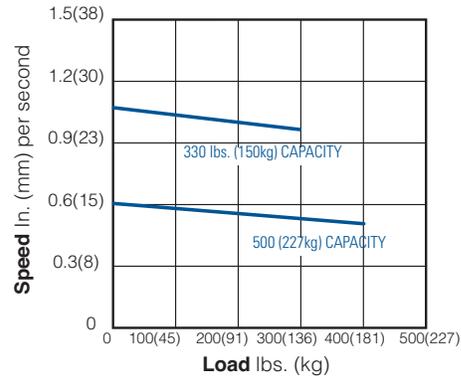
# A-Track 5

## Performance Curves

### Current vs Load



### Speed vs Load



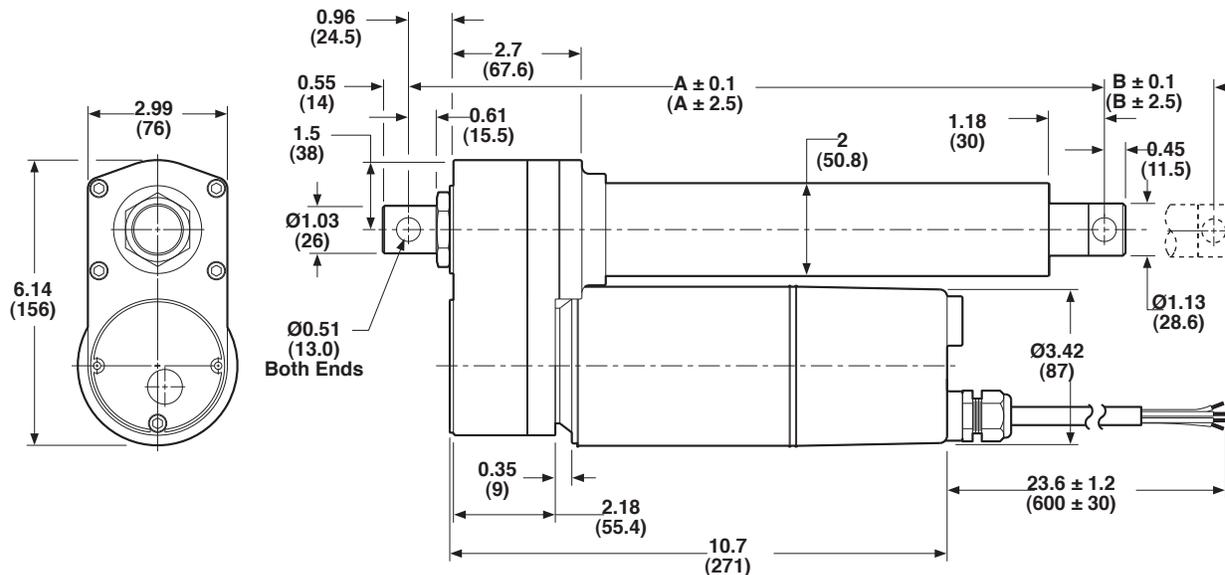
## Dimensions

### With Limit Switches

A-Track 5 Acme	Stroke	in.		mm		in.		mm		in.		mm	
		4	100	6	150	8	200	12	300	18	450	24	600
A		17.95	456	19.92	506	21.89	556	25.91	658	31.89	810	37.87	962
B		4.01	102	6.02	153	7.99	203	12.00	305	17.99	457	24.01	610

### Without Limit Switches

A-Track 5 Acme	Stroke	in.		mm		in.		mm		in.		mm	
		4	100	6	150	8	200	12	300	18	450	24	600
A		14.96	380	16.97	431	18.94	481	22.95	583	28.94	735	34.92	887
B		4.01	102	6.02	153	7.99	203	12.00	305	17.99	457	24.01	610



# A-Track 5

## AC Motor Ball Screw

Up to 1300 lbs. (590kg) Rated Load

Up to 1.89 in. (48mm)/sec. Travel Speed



### Features

- Ball bearing screw drive system
- Anti-coast load holding brake
- 4–24 inches (100-610 millimeters) stroke length capability
- Load limiting clutch standard
- Thermal overload protection in the motor
- Capacitor included in motor

### Typical Applications

- Ergonomic lift tables
- Conveyor diverters
- Bin or tank cover lifts
- Die transfer carts

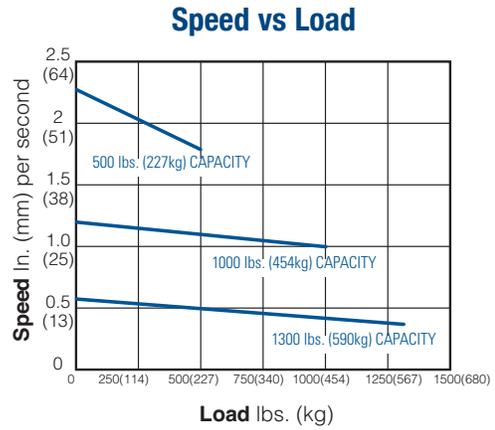
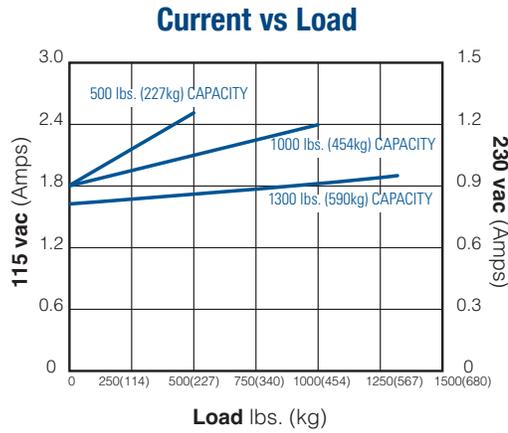
The A-Track 5 Ball Screw is a ball screw drive linear actuator for industrial and commercial applications. The unit provides load capacity up to 1300 pounds (590 kilograms) with either 115 volt or 230 volt AC motors. This unit includes a power off load holding brake which stops the motor from turning when power is off. The Model 5 allows for stroke lengths of 4 to 24 inches (100 to 610 millimeters) for in-plant or protected applications.

### Specifications

<b>Load Capacity</b>	500 lbs. (227kg)	1000 lbs. (454kg)	1300 lbs. (590kg)
<b>Speed at Full Load</b>	1.89 in. (48mm)/sec	0.98 in. (25mm)/sec	0.47 in. (12mm)/sec
<b>Input Voltage</b>	115 vac (60hz) / 230 vac (50hz)		
<b>Static Load Capacity</b>	3050 lbs. (1383kg) for all models		
<b>Stroke Length</b>	4, 6, 8, 12, 18 and 24 inches (100, 150, 200, 300, 457 and 610 mm)		
<b>Clevis Ends</b>	.51 in. (13mm) diameter		
<b>Duty Cycle</b>	25% for all models		
<b>Operation Temperature Range</b>	-15° F to +150° F (-26°C to 65°C) for all models		
<b>Limit Switch</b>	Optional Adjustable (20:1 only) 1300 lbs. (590kg)		
<b>Potentiometer</b>	Optional for all models		
<b>Restraining Torque</b>	100 in. lbs. (11.30Nm)		
<b>Thermal Overload</b>	Overload clutch and motor thermal overload		

# A-Track 5

## Performance Curves



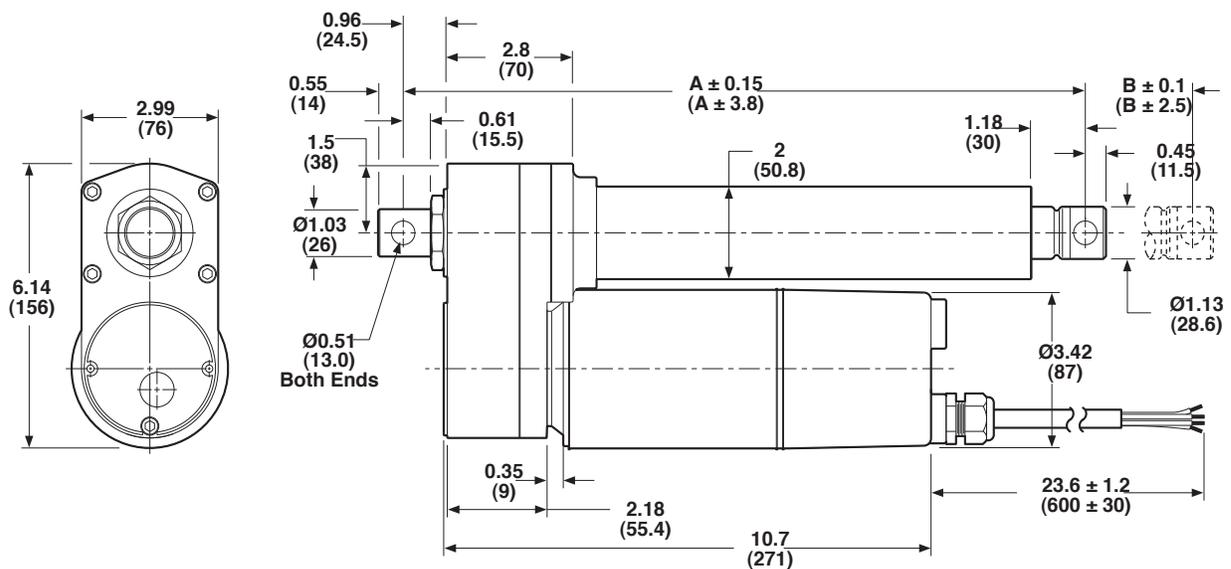
## Dimensions

### With Limit Switches

A-Track 5 Ball Screw	Stroke	in.	mm										
		4	100	6	150	8	200	12	300	18	450	24	600
A		17.95	456	19.92	506	21.89	556	25.91	658	31.89	810	37.87	962
B		4.01	102	6.02	153	7.99	203	12.00	305	17.99	457	24.01	610

### Without Limit Switches

A-Track 5 Ball Screw	Stroke	in.	mm										
		4	100	6	150	8	200	12	300	18	450	24	600
A		14.96	380	16.97	431	18.94	481	22.95	583	28.94	735	34.92	887
B		4.01	102	6.02	153	7.99	203	12.00	305	17.99	457	24.01	610

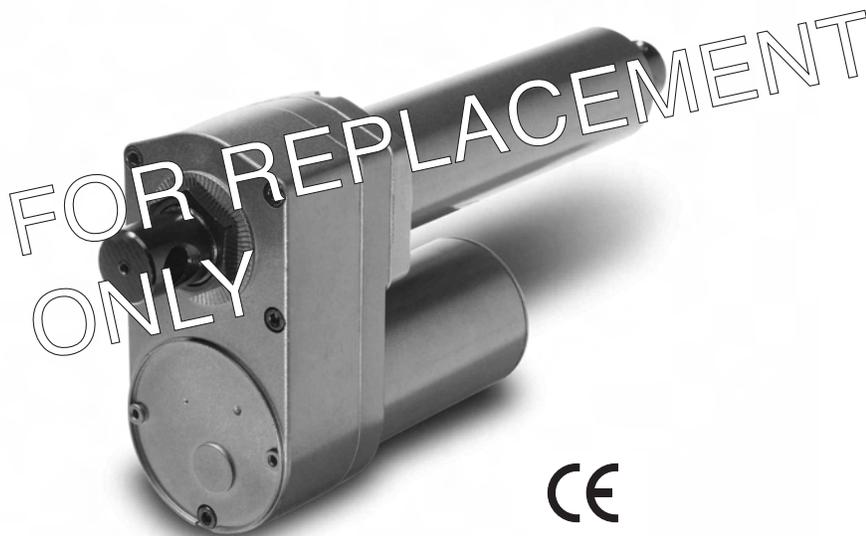


# A-Track 10

## DC Motor Ball Screw

Up to 1000 lbs. (454kg) Rated Load

Up to 1.35 in.(34.29mm)/sec. Travel Speed



### Features

- Efficient ball screw drive system
- Load holding brake standard
- Overload clutch standard
- 4 to 24 inches (100 to 610 millimeters) stroke lengths
- Thermal overload incorporated into the motor

### Typical Applications

- Heavy duty platform lifts
- Deck and implement lifts for tractors and mobile applications
- Wheelchair and scooter lifts
- Bin and tank cover lifts

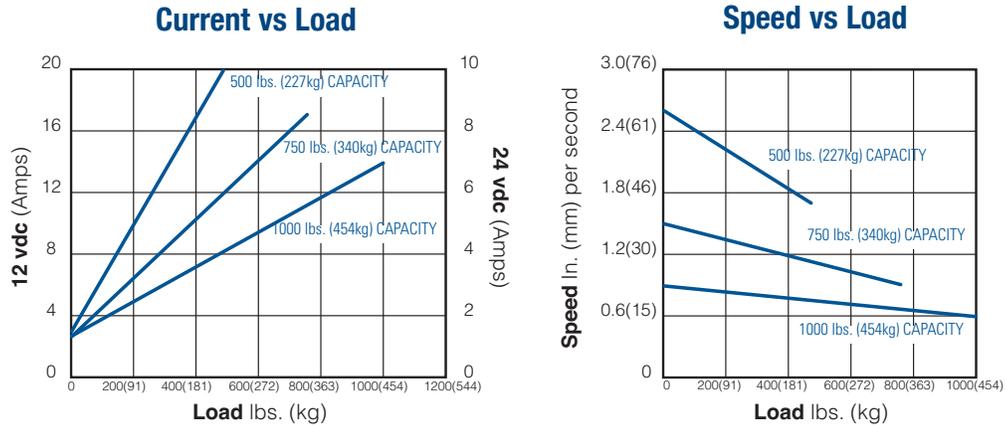
The A-Track 10 actuator is a DC motor driven, ball screw design suitable for applications requiring high load capacity. The A-Track 10 incorporates seals and O-rings to provide protection when used in outdoor, mobile or ambient contamination environments. This unit includes an integral load holding brake to provide stationary load holding while still providing the efficiency of a ball screw design actuator. The Model 10 provides load capacities up to 1000 pounds (454 kilograms) with stroke lengths to 24 inches (610 millimeters).

### Specifications

<b>Load Capacity</b>	500 lbs. (227kg)	750 lbs. (340kg)	1000 lbs. (454kg)
<b>Speed at Full Load</b>	1.35 in. (34mm)/sec	0.85 in. (22mm)/sec	0.51 in. (13mm)/sec
<b>Input Voltage</b>	12 or 24 volt DC for all models		
<b>Static Load Capacity</b>	3000 lbs. (1361kg) for all models		
<b>Stroke Length</b>	4, 6, 8, 12, 18 and 24 inches (100, 150, 200, 300, 457 and 610mm) for all models		
<b>Clevis Ends</b>	.51 in. (13mm) diameter		
<b>Duty Cycle</b>	25%		
<b>Operation Temperature Range</b>	-15° F to +150° F (-26°C to 65°C) for all models		
<b>Limit Switch</b>	Optional Adjustable (20:1 only) 1000 lbs. (454kg)		
<b>Potentiometer</b>	Optional for all models		
<b>Restraining Torque</b>	100 in. lbs. (11.30Nm)		
<b>Thermal Overload</b>	Overload clutch and motor thermal overload for all models		

# A-Track 10

## Performance Curves



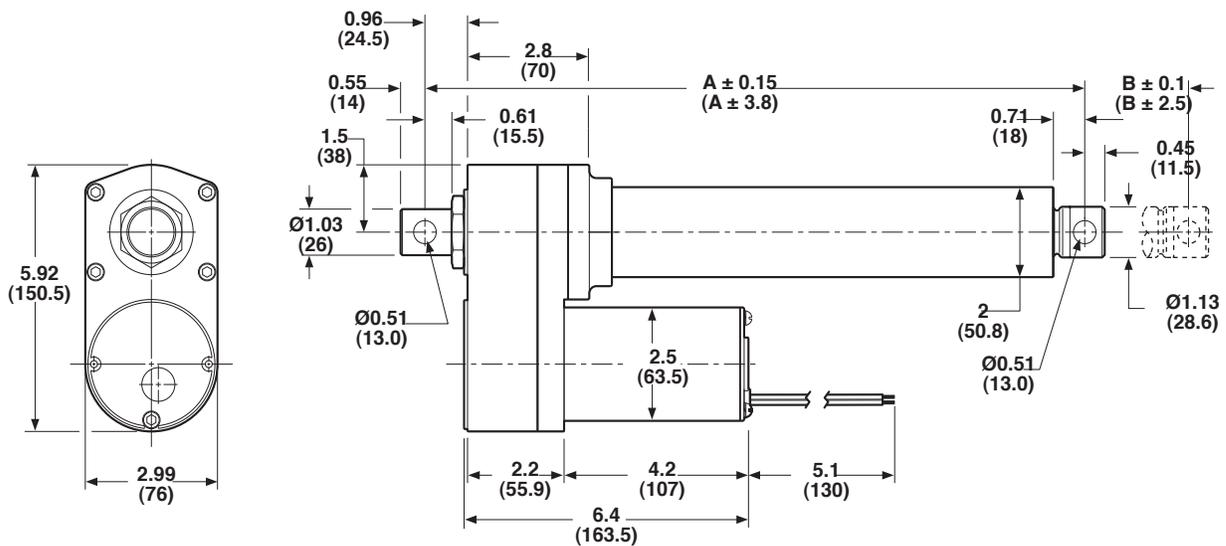
## Dimensions

### With Limit Switches

A-Track 10	Stroke	in.	mm										
		4	100	6	150	8	200	12	300	18	450	24	600
A		14.88	378	16.89	429	18.86	479	22.83	580	31.89	810	37.87	962
B		3.86	98	5.90	150	7.91	201	11.89	302	17.99	457	24.01	610

### Without Limit Switches

A-Track 10	Stroke	in.	mm										
		4	100	6	150	8	200	12	300	18	450	24	600
A		11.89	302	13.90	353	15.90	404	19.88	505	28.94	735	34.92	887
B		3.86	98	5.90	150	7.91	201	11.89	302	17.99	457	24.01	610







# General Project Specifications

**Mail or Fax to:**

 Warner Linear  
 Application Engineering  
 6593 Reylon Dr. Plant #1,  
 Belvidere, IL 61008

**FAX: 815-389-6678**  
 Phone: 800-825-9050

 Date \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Name \_\_\_\_\_  
 Title \_\_\_\_\_ Phone (\_\_\_\_) \_\_\_\_\_

**Project Specifications**

Dynamic Load _____ kg _____ 0.00 lbs.	Environment _____	Operating Temperature: _____C Min _____ 32.0 F (0°C)
Side Load _____ kg _____ 0.00 lbs.	Conditions: Corrosives/Salt _____	_____C Max _____ 32.0 F (0°C)
Full Load Speed (min): _____ mm/s _____ 0.00 inches/s	Oil Splash _____	Duty Cycle (for one full extend + retract) _____ Time On (Time on +Time off)
Full Load Speed (max): _____ mm/s _____ 0.00 inches/s	Moisture _____	_____ Cycles per day
Stroke: _____ mm _____ 0 inches	Mounting Position _____	
Life: _____ mm _____ 0 inches		

**NOTE: "Life" is total distance traveled in lifetime of product**

Maximum Noise Level \_\_\_\_\_ dB

 Load Movement \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**in dumping applications, when load first acts to compress screw and then to retract screw (or vice versa)**

Extension Rod Mount \_\_\_\_\_

Input Voltage Type \_\_\_\_\_

 Gearbox Mount \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Input Voltage \_\_\_\_\_

Connector Type \_\_\_\_\_

Control Needed \_\_\_\_\_

Mating Connector Required \_\_\_\_\_

If yes, which control \_\_\_\_\_

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Our comprehensive product offering is comprised of nine major categories including electromagnetic clutches and brakes, heavy duty clutches and brakes, overrunning clutches, gearing, engineered couplings, engineered bearing assemblies, linear products and belted drives. With thousands of product solutions available, Altra provides true single source convenience while meeting specific customer requirements. Many major OEM's and end users prefer Altra products as their No.1 choice for performance and reliability.

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### **Electromagnetic Clutches and Brakes**

Warner Electric  
Inertia Dynamics  
Matrix International



### **Heavy Duty Clutches and Brakes**

Wichita Clutch  
Twiflex Limited  
Industrial Clutch



### **Overrunning Clutches**

Formsprag Clutch  
Marland Clutch  
Stieber Clutch



### **Engineered Couplings and Universal Joints**

TB Wood's  
Ameridrives Couplings  
Ameridrives Power Transmission  
Bibby Transmissions



### **Belted Drives and Sheaves**

TB Wood's



### **Gearing**

Boston Gear  
Nuttall Gear  
Delroyd Worm Gear  
Bauer Gear Motor



### **Linear Products**

Warner Linear



### **Engineered Bearing Assemblies**

Kilian Manufacturing



### **Precision Couplings and Air Motors**

Huco Dynatork



# Altra Industrial Motion

All Customer Service phone numbers shown in bold

## Electromagnetic Clutches and Brakes

### Warner Electric

*Electromagnetic Clutches and Brakes*

New Hartford, CT - USA  
**1-800-825-6544**

*For application assistance:*  
1-800-825-9050

St Barthelemy d'Anjou, France  
**+33 (0) 2 41 21 24 24**

*Precision Electric Coils and Electromagnetic Clutches and Brakes*

Columbia City, IN - USA  
**1-260-244-6183**

### Matrix International

*Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes*

Brechin, Scotland  
**+44 (0) 1356 602000**

New Hartford, CT - USA  
**1-800-825-6544**

### Inertia Dynamics

*Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes*

New Hartford, CT - USA  
**1-800-800-6445**

## Linear Products

### Warner Linear

*Linear Actuators*

Belvidere, IL - USA  
**1-800-825-6544**

*For application assistance:*  
1-800-825-9050

St Barthelemy d'Anjou, France  
**+33 (0) 2 41 21 24 24**

## Couplings

### Ameridrives Couplings

*Mill Spindles, Ameriflex, Ameridisc*

Erie, PA - USA  
**1-814-480-5000**

*Gear Couplings*

San Marcos, TX - USA  
**1-800-458-0887**

### Bibby Transmissions

*Disc, Gear, Grid Couplings, Overload Clutches*

Dewsbury, England  
**+44 (0) 1924 460801**

Boksburg, South Africa  
**+27 11 918 4270**

### TB Wood's

*Elastomeric Couplings*

Chambersburg, PA - USA  
**1-888-829-6637** – Press #5

*For application assistance:*  
1-888-829-6637 – Press #7

*General Purpose Disc Couplings*

San Marcos, TX - USA  
**1-888-449-9439**

### Ameridrives Power Transmission

*Universal Joints, Drive Shafts, Mill Gear Couplings*

Green Bay, WI - USA  
**1-920-593-2444**

### Huco Dynatork

*Precision Couplings and Air Motors*

Hertford, England  
**+44 (0) 1992 501900**

Charlotte, NC - USA  
**1-800-825-6544**

## Heavy Duty Clutches and Brakes

### Wichita Clutch

*Pneumatic Clutches and Brakes*

Wichita Falls, TX - USA  
**1-800-964-3262**

Bedford, England  
**+44 (0) 1234 350311**

### Twiflex Limited

*Caliper Brakes and Thrusters*

Twickenham, England  
**+44 (0) 20 8894 1161**

### Industrial Clutch

*Pneumatic and Oil Immersed Clutches and Brakes*

Waukesha, WI - USA  
**1-262-547-3357**

## Gearing

### Boston Gear

*Enclosed and Open Gearing, Electrical and Mechanical P.T. Components*

Charlotte, NC - USA  
**1-800-825-6544**

*For application assistance:*  
1-800-816-5608

### Bauer Gear Motor

*Geared Motors*

Esslingen, Germany  
**+49 (711) 3518-0**

### Nuttall Gear and Delroyd Worm Gear

*Worm Gear and Helical Speed Reducers*

Niagara Falls, NY - USA  
**1-716-298-4100**

## Overrunning Clutches

### Formsprag Clutch

*Overrunning Clutches and Holdbacks*

Warren, MI - USA  
**1-800-348-0881** – Press #1

*For application assistance:*  
1-800-348-0881 – Press #2

### Marland Clutch

*Roller Ramp and Sprag Type Overrunning Clutches and Backstops*

South Beloit, IL - USA  
**1-800-216-3515**

### Stieber Clutch

*Overrunning Clutches and Holdbacks*

Heidelberg, Germany  
**+49 (0) 6221 30 47 0**

## Belted Drives and Sheaves

### TB Wood's

*Belted Drives*

Chambersburg, PA - USA  
**1-888-829-6637** – Press #5

*For application assistance:*  
1-888-829-6637 – Press #7

## Engineered Bearing Assemblies

### Kilian Manufacturing

*Engineered Bearing Assemblies*

Syracuse, NY - USA  
**1-315-432-0700**

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www.altramotion.com.cn*



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