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ALTRA INDUSTRIAL MOTION

Electric Actuators and Actuator Controls

Warner® Linear

An Altra Industrial Motion Company

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Check out the new

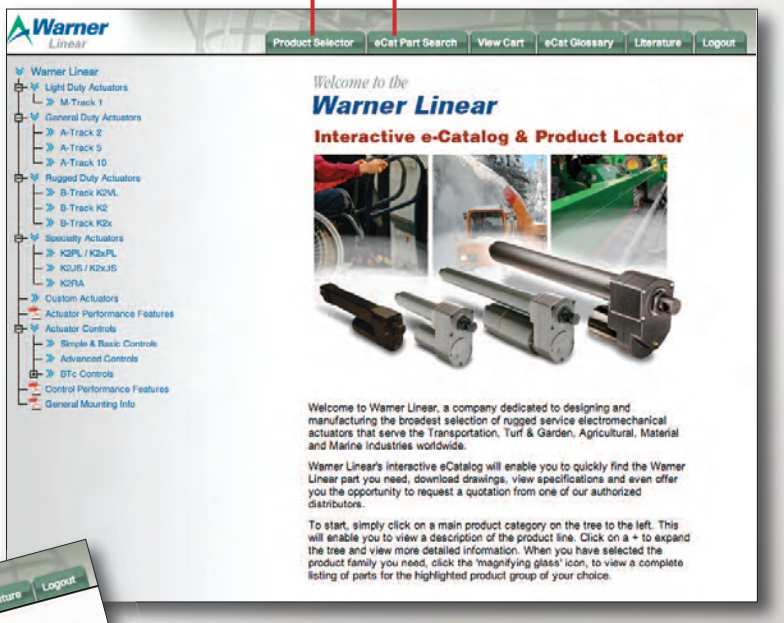
eCatalog at warnerlinear.com

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
- View 3D models (download FREE eDrawings™ viewer)
- Download CAD drawings in various formats
- Request a customized part by entering changes to various standard specification values
- Submit an RFQ to a local distributor from a list provided or search for the local Warner Linear Area Sales Manager
- View your cart to check part selections, edit your profile, change your password, and view saved carts
- Search for a specific part number
- Data provided in both Imperial and Metric
- Easy access literature link

Click on the Product Selector tab to start your search

You can also search by entering a product part number or description



Refine your search criteria with specification filters including:

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

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Warner Linear...
Customer Focused, Quality Driven

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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Contents

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

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

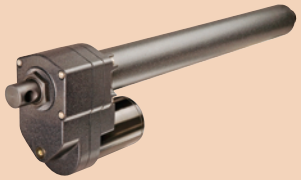
Load Capacity & Speed
lbs. @ in./sec. (kg@mm/sec)
300 @ 2.0 (135 @ 50)
600 @ 1.0 (270 @ 25)
1200 @ 0.5 (540 @ 12)
1500 @ 0.35 (680 @ 9)

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

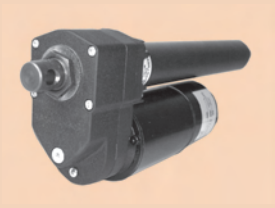
Load Capacity & Speed
lbs. @ in./sec. (kg@mm/sec)
600 @ 2.0 (270 @ 50)
1200 @ 1.0 (540 @ 25)
2200 @ 0.5 (1000 @ 12)
2800 @ 0.25 (1270 @ 6)

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

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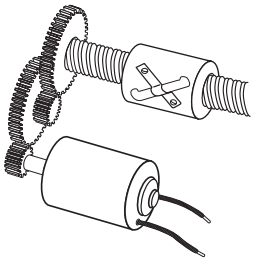
Performance Features

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

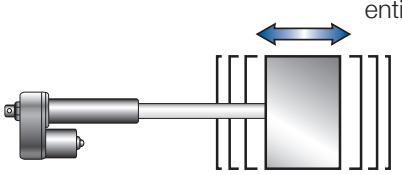
- Golf Cart Height Adjust
- Mower Blade Lift
- Solar Panel Adjust
- 55 Gallon Drum Lift
- Fire Engine Valve Adjust
- Automated Dumpster
- Scissor Lift Table
- Round Baler Cover Lift
- Walk Behind Floor Washer
- Bulldozer Engine Cover
- Air Foil Adjust
- Construction Sign Positioning
- Forage Harvester 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.

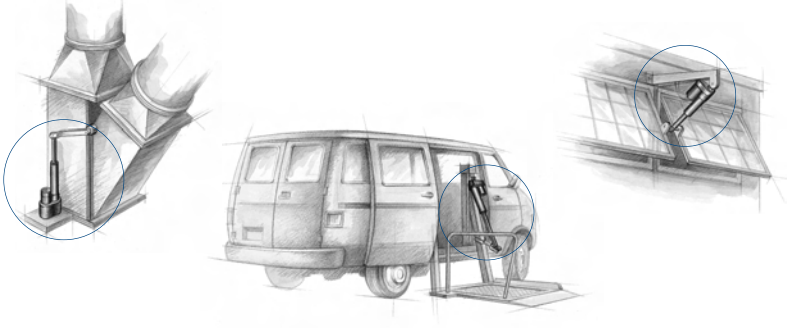


Equal capacity in both directions
Warner Linear actuators can push-and-pull or lift-and-lower loads ranging from one pound to over 2800 pounds (1270 kilograms) up to 24 inches (600 millimeters) with equal capacity in both directions of travel.

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



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Rugged and reliable

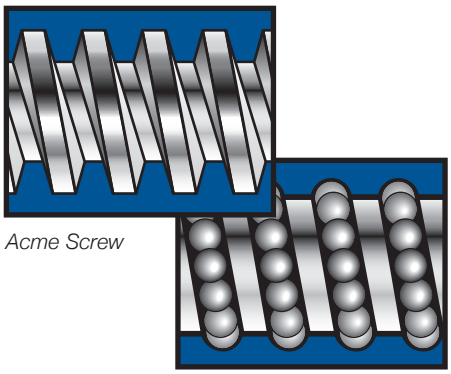
Warner Linear actuators incorporate high strength, high quality components and are designed to assure trouble-free service. Rugged spur gearing, industrial quality synthetic lubricants and high performance motors combine to provide maximum capability and value for the end user. Units are gasketed and 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

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M-Track Features

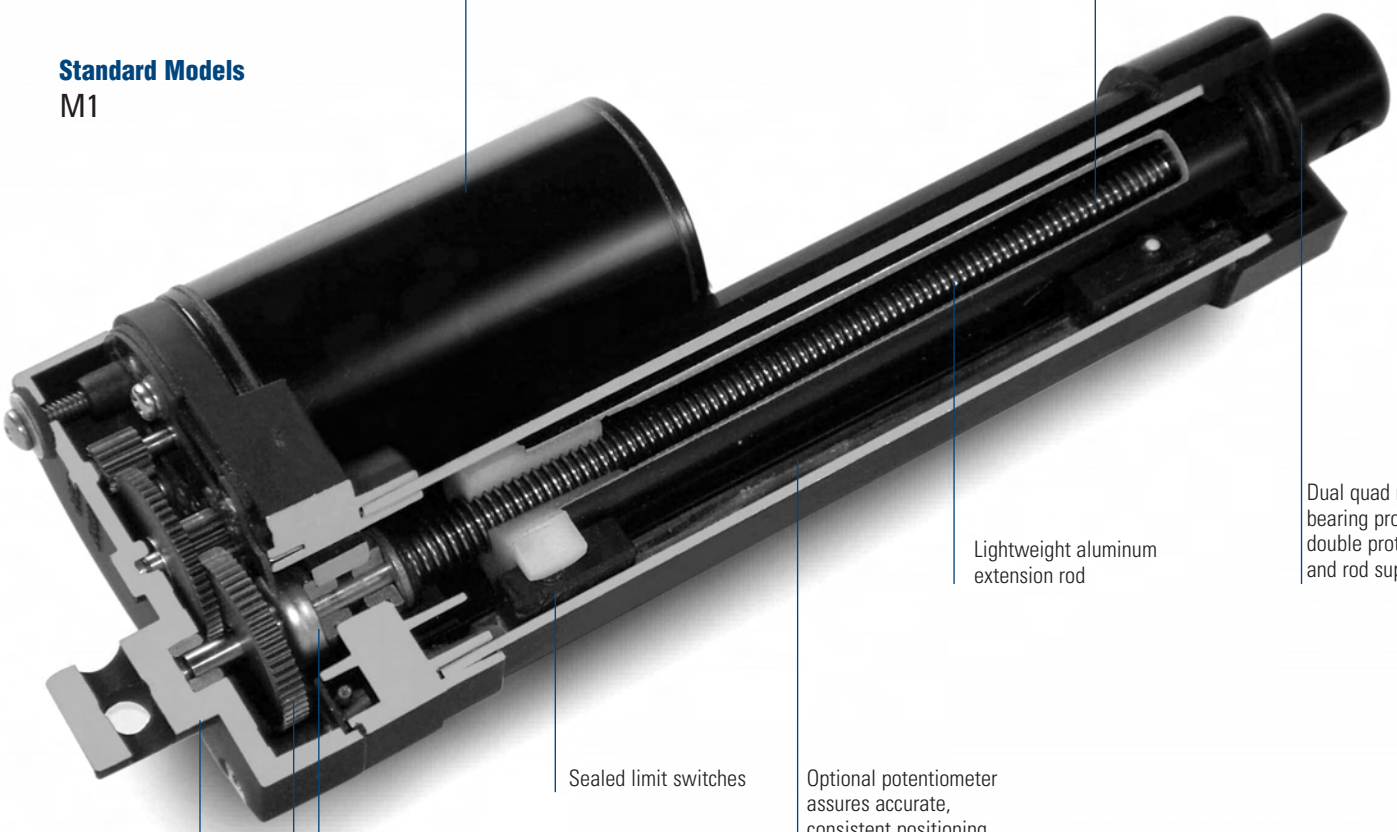
Light Duty Actuators

Key Features

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

Standard Models

M1



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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.

Actuator Model No.
M1 = M-Track 1

Motor Voltage Options
D012 = 12 volt DC
D024 = 24 volt DC

Potentiometer
P = With Potentiometer
N = No Potentiometer

Limit Switch Options
L = Limit switches included

Model No.	Voltage	Load Capacity		Screw Type		Stroke Length		Limit Switch		Potentiometer
M1	–	D012	–	0050	–	A		02	–	L		N

Load Capacity

0050 = 50 lbs. (22kg)	***Note:*** *Not all load ratings are standard for all units. Consult unit page for details.*
0100 = 100 lbs. (44kg)	
0165 = 165 lbs. (75kg)	

Stroke Length (inches)

02 = 2 in. (50mm)	***Note:*** *Not all stroke lengths are standard on all units. Consult unit page for details.*
04 = 4 in. (100mm)	
06 = 6 in. (150mm)	
08 = 8 in. (200mm)	
10 = 10 in.(254mm)	
12 = 12 in.(300mm)	

Screw Type
A = Acme Screw

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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 –15º to +150º F (-26º to + 65ºC)
- 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

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

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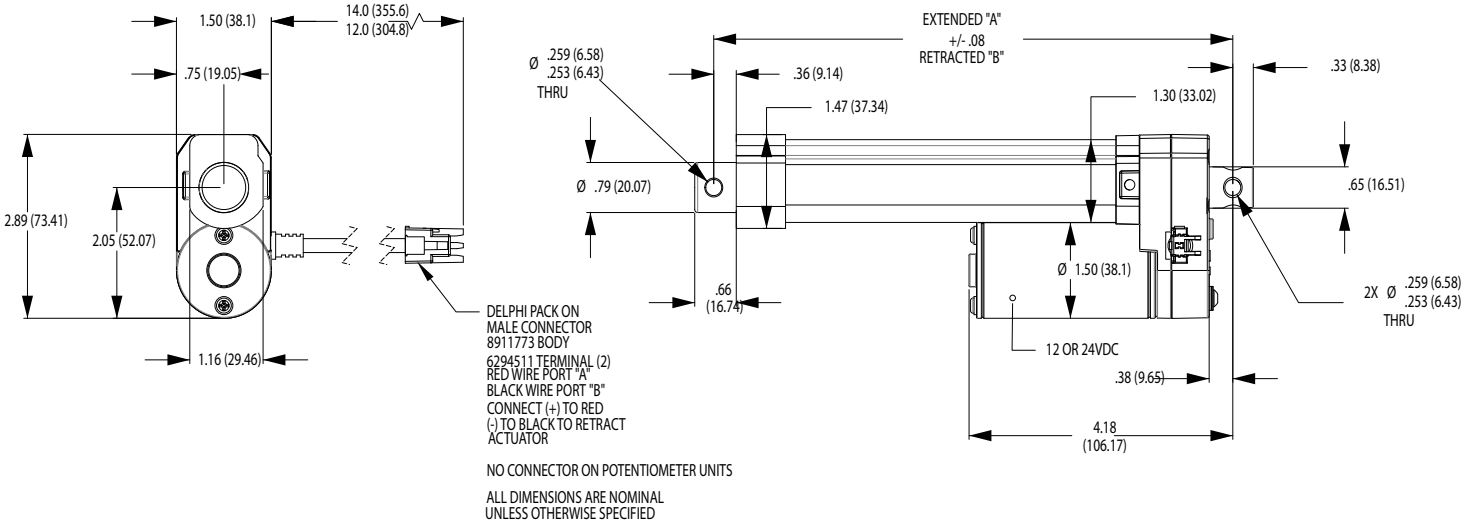
Dimensions

	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
Stroke Length	**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.

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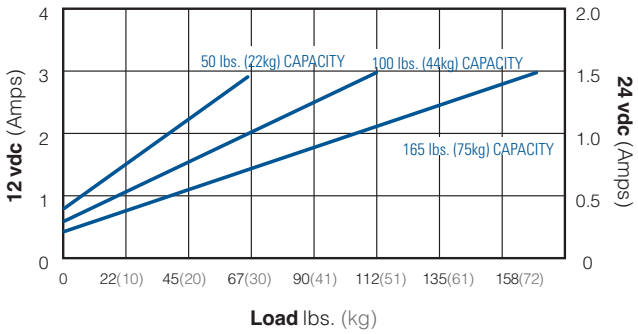
Performance Curves Imperial

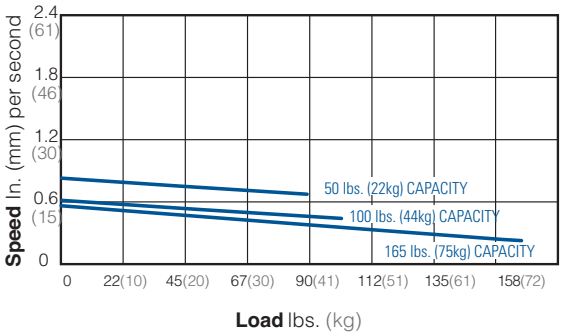
Current vs Load



Current Draw

Speed

Speed vs Load



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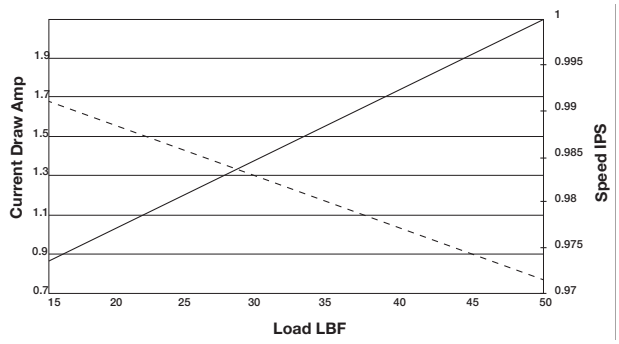
Performance Graphs

M1-D012-0050



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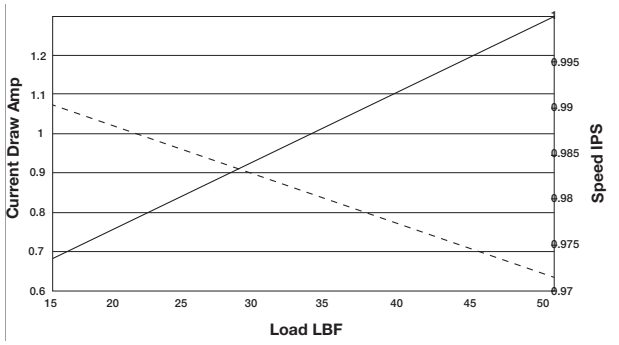

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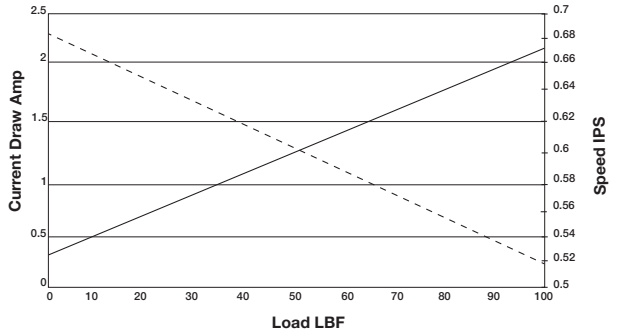

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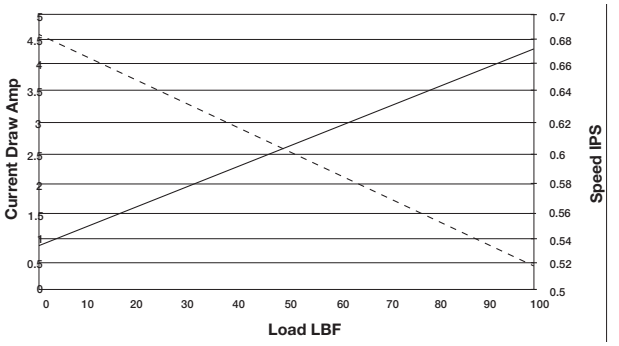

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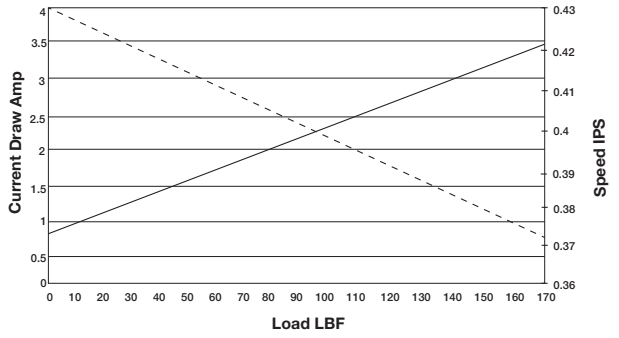

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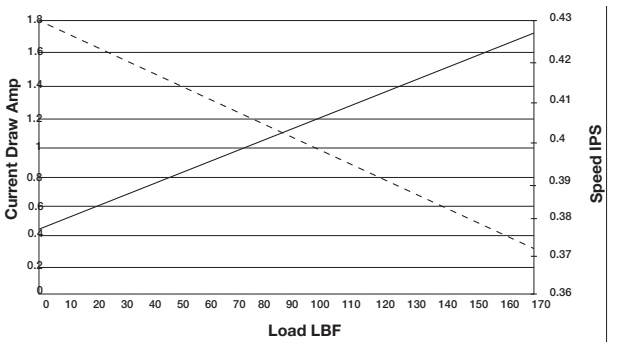

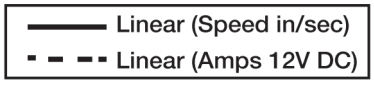

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S-Track

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.

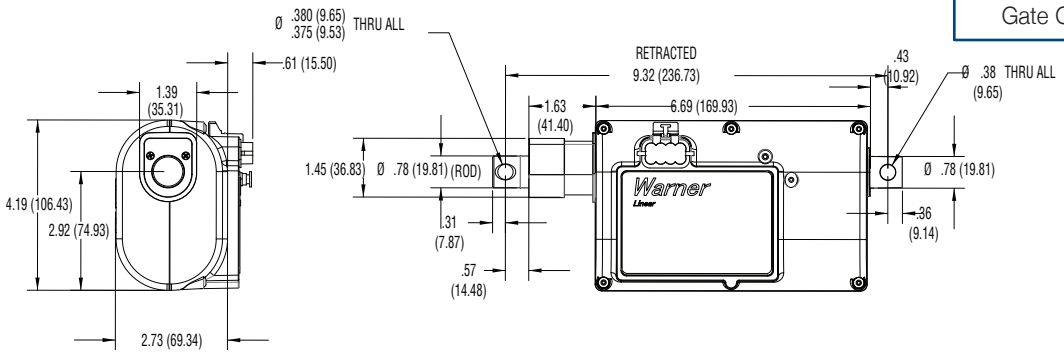
Features

- 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

Dimensions



Specifications

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

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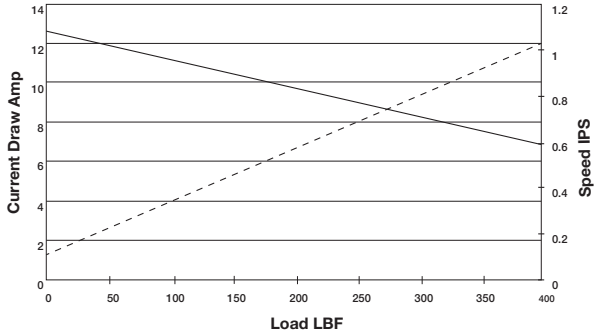
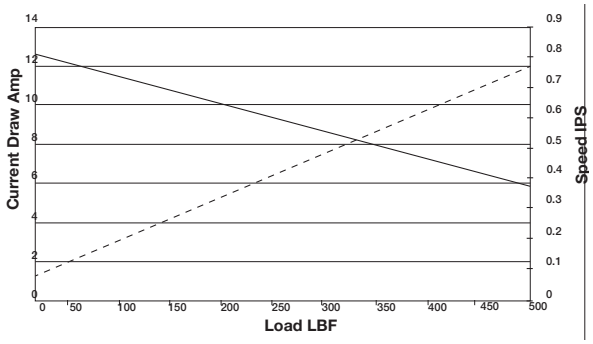
Performance Graphs

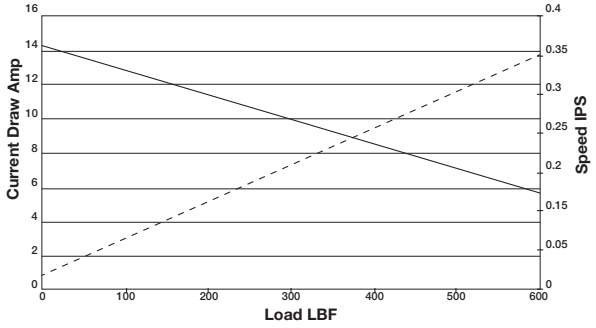
G07 12V DC



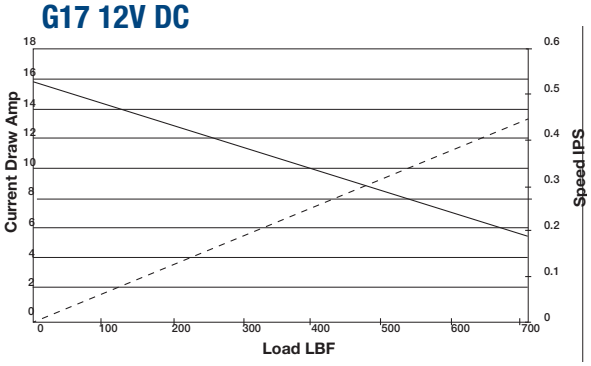
G011 12V DC



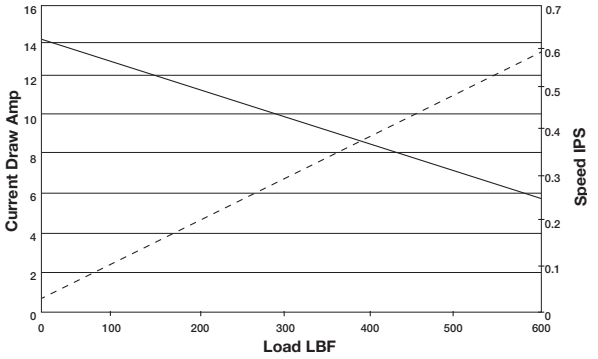
G14 12V DC

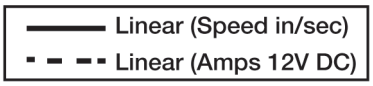


G17 12V DC



G35 12V DC





Dimensions

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

Model Configurator

Model No.	Output Limit Switch	Gear Ratio	Voltage		Stroke Length	End Fitting	IP Rating
S1	P1	G11	-12V	- DN -	08	-	1

Actuator Model No.
S1 = Alumimum Housing
S2 = Plastic Housing

Output/Limit Switch
P1 = S-Track Basic Control, POT output and Limit Switches

Gear Ratio

G07	44	.375 - 8 screw
G11	44	.375 - 12 screw
G14	44	.375 - 16 screw
G17	18	.375 - 8 screw
G26	18	.375 - 12 screw
G35	18	.375 - 16 screw

Voltage
12V DC
24V DC

Stroke
04 in. (100mm)
06 in. (150mm)
08 in. (200mm)
10 in. (250mm
12 in. (300mm)

IP Rating
Blank = IP50
1 = IP65

End Fitting
Blank = STD
R90 = 90

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B-Track Features

Rugged Duty Actuators

Key Features

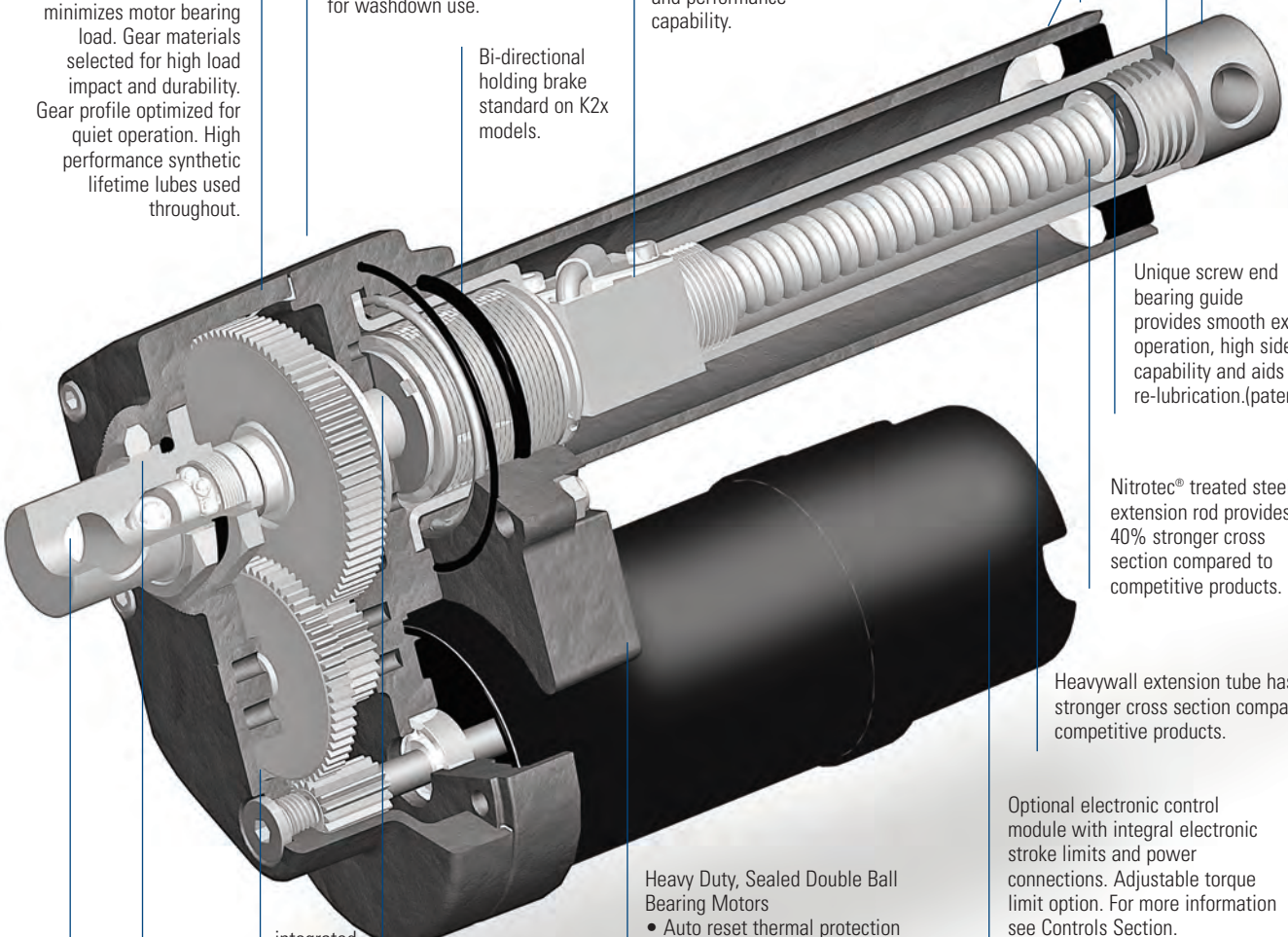
- Weather-tight sealed
- Patented in-line load transfer
- Heavy wall rod and cover tube
- High performance motors
- Up to 2,800 lb. (1270kg) capacity

Standard Models

K2VL, K2, K2X, K2AC, K2XAC

Option Models

K2PL/K2XPL
K2JS/K2XJS
K2RA



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.

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.

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.

Bi-directional holding brake standard on K2x models.

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.

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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)

Actuator Model
- K2x
- K2
- K2VL
- K2AC
- K2XAC

Gear Ratio
- G30 = 30:1
- G20 = 20:1
- G10 = 10:1
- G05 = 5:1

Stroke Length
- 04 = 4.00 (100mm)
- 06 = 6.00 (150mm)
- 08 = 8.00 (200mm)
- 12 = 12.00 (300mm)
- 18 = 18.00 (450mm)
- 24 = 24.00 (600mm)

Base Fitting Alignment
- R30 = 30˚ Fitting
- R60 = 60˚ Fitting
- R90 = 90˚ Fitting
- R120 = 120˚ Fitting
- R150 = 150˚ Fitting
- Blank = Standard

Model No.	Control Model	Gear Ratio		Motor Voltage	Motor Type		Nut Type		Stroke Length		Base Fitting Alignment
K2x	Px.x	G20	–	12V	M	–	BR	–	04	–	R120

Control Model
- P1.x Fixed Limit Switch
- P2.x
- EP1.x Adjustable Limit Switches
- (K2VL Not Available)

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

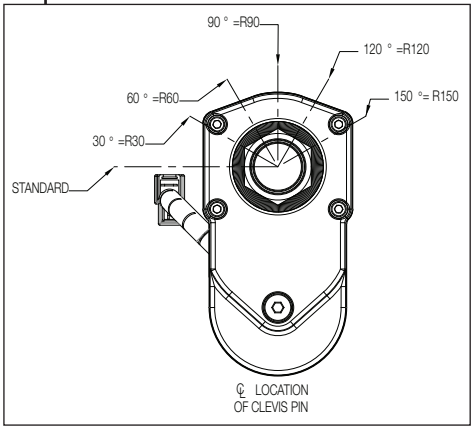
Motor Voltage
- 12V = 12 volts
- 24V = 24 volts
- 36V = 36 volts
- 48V = 48 volts
- 90V = 90 volts
- 115V = 115 volts AC
- 230V = 230 volts AC

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

Nut Type*
- BR = Bronze Nut
- BRL = Bronze Nut - Long
- DN = Delrin® Nut
- *Leave blank for K2x

* BRL matches K2x pin to pin

Motor Type
- M = Ignition Protected Motor
- For standard motor, leave blank.



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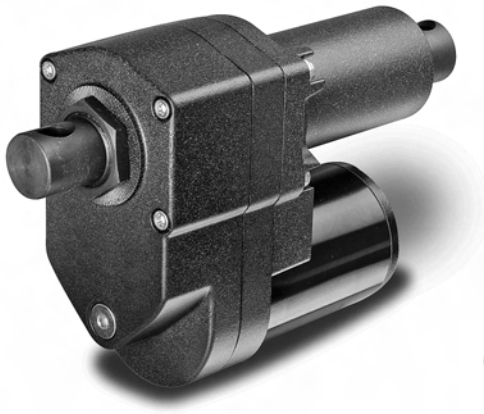
B-Track K2VL

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)

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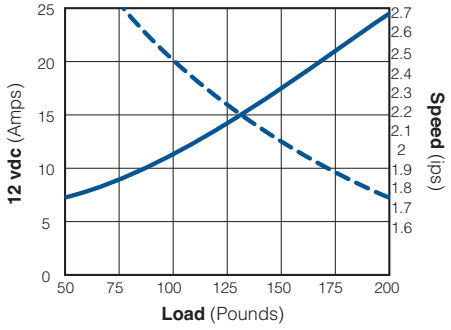
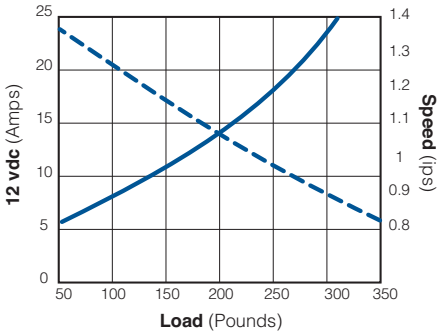
Performance Curves Imperial

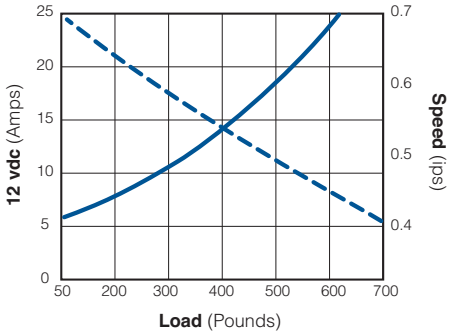
K2VLG05



K2VLG10



K2VLG20

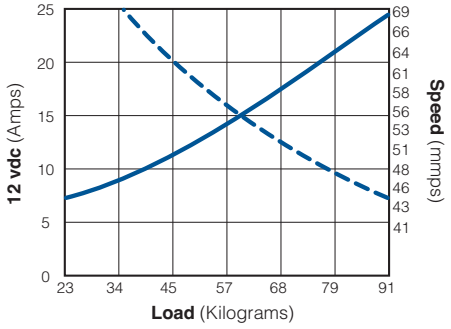


Current Draw

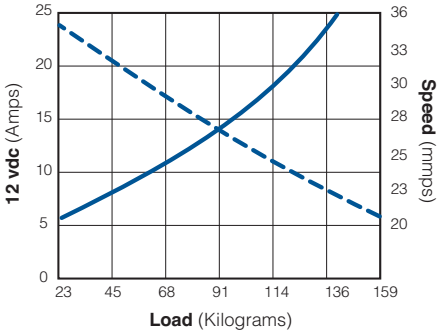
Speed

Performance Curves Metric

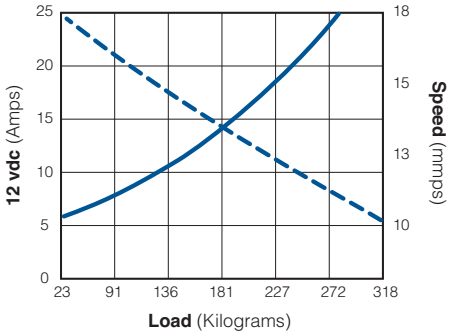
K2VLG05



K2VLG10



K2VLG20



Current Draw

Speed

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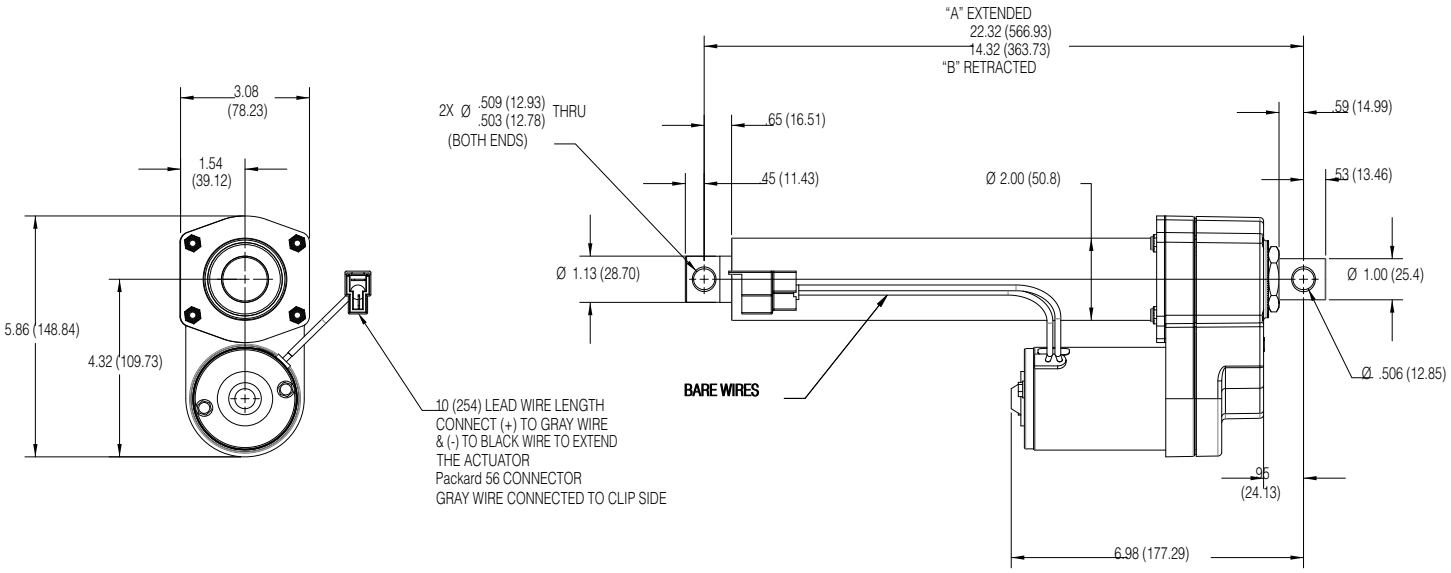
Dimensions

B-Track K2VL		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
	Stroke	**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



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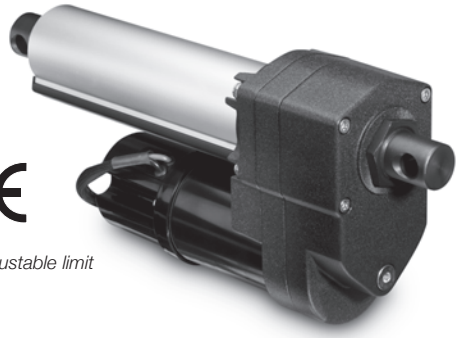
Rugged Duty Actuator
DC Motor Acme Screw

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® 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 & #12010973)

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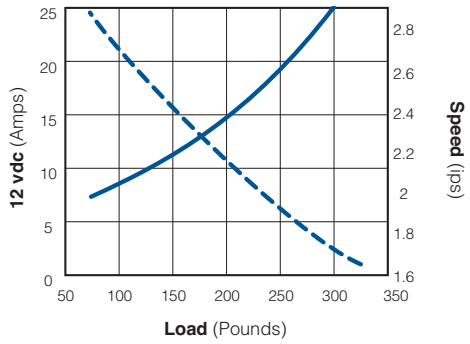
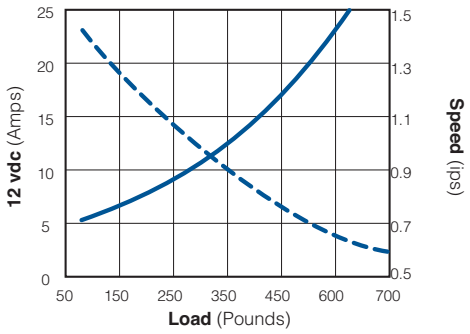
B-Track K2

Performance Curves Imperial

K2G05



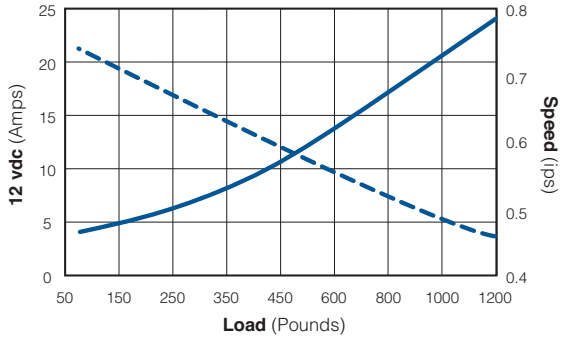
K2G10



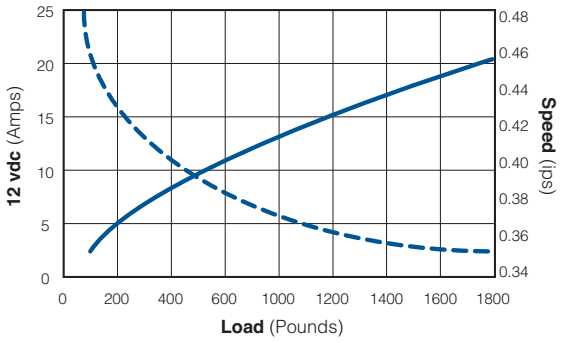
Current Draw

Speed

K2G20

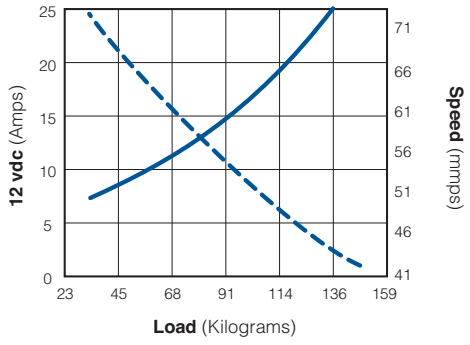


K2G30

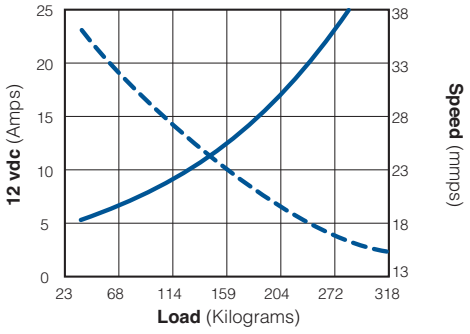


Performance Curves Metric

K2G05



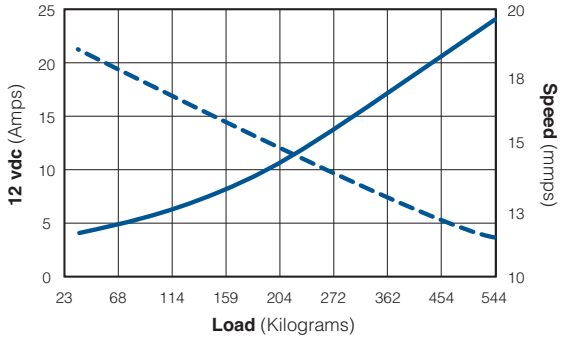
K2G10



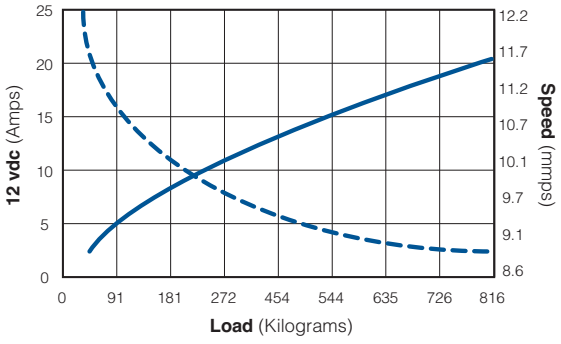
Current Draw

Speed

K2G20



K2G30



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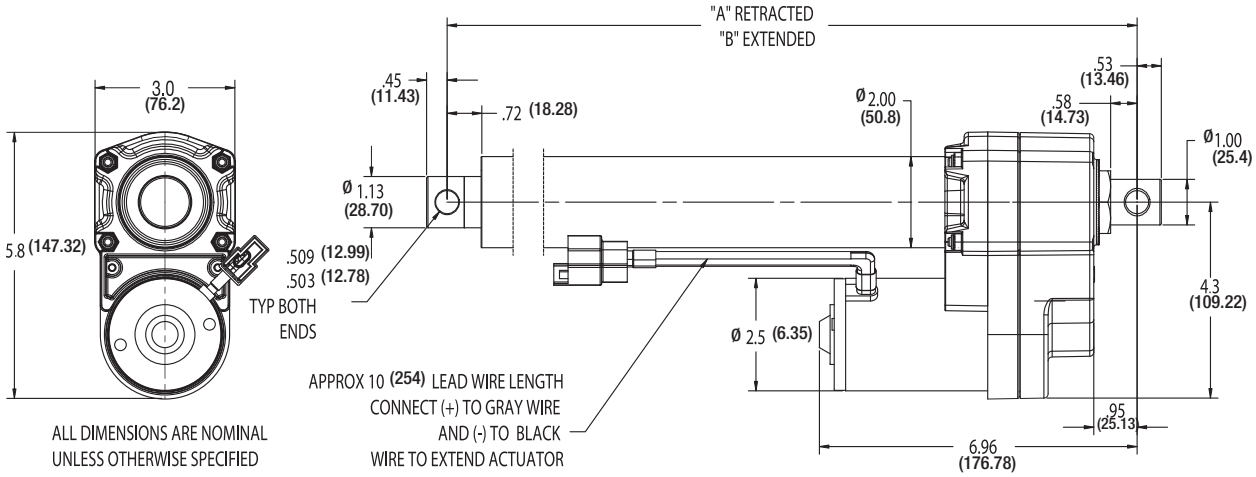
Dimensions

B-Track K2		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
	Stroke	**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		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
	Stroke	**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



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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® 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

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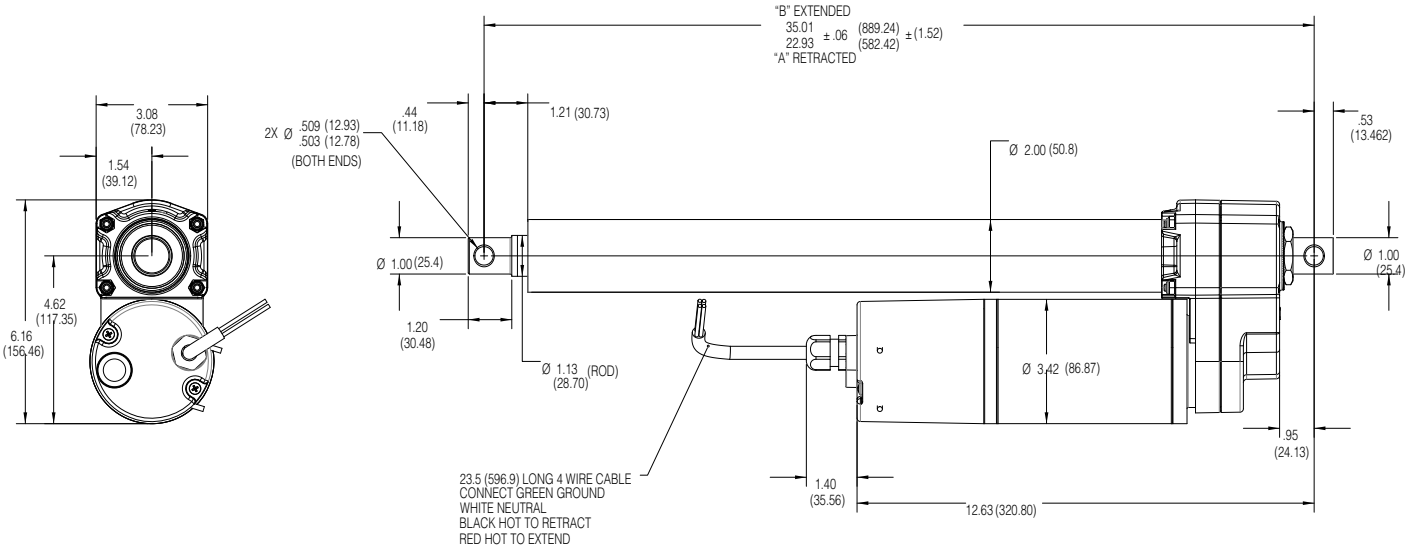
Dimensions

B-Track K2	Stroke	in.	mm	in.	mm	in.	mm	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	18.97	482	22.99	584	26.93	684	34.95	888	46.93	1192	58.93	1497

Note: Special lengths available



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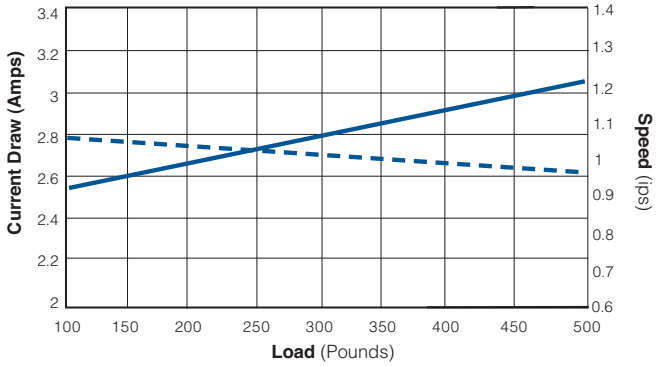
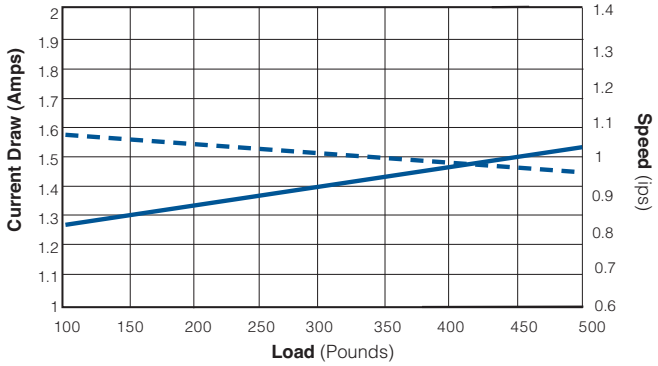
Performance Curves Imperial

Current Draw
Speed

K2G10-115VAC



K2G10-230VAC



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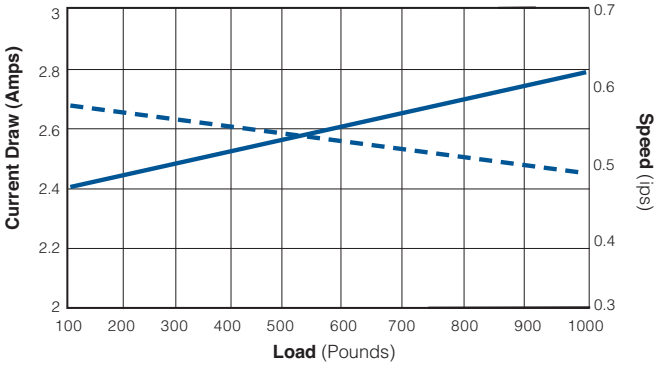

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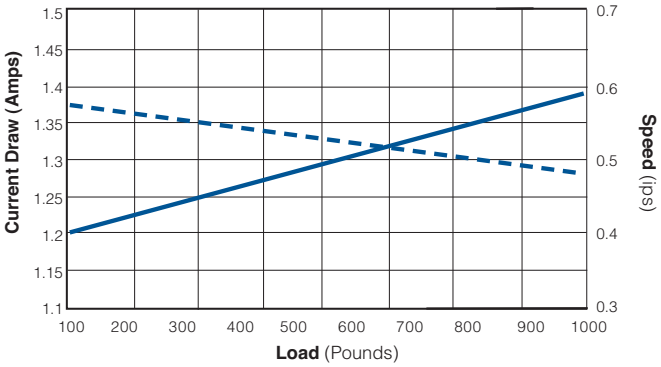

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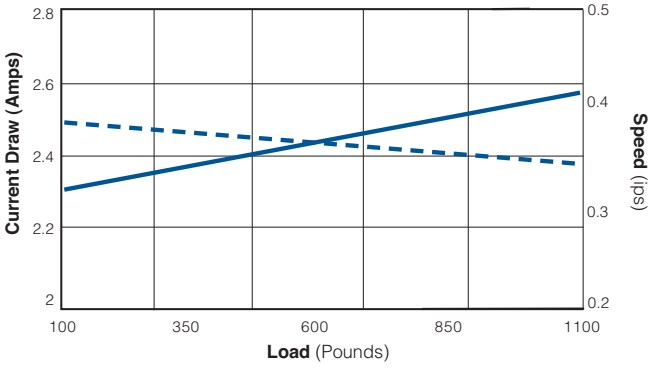

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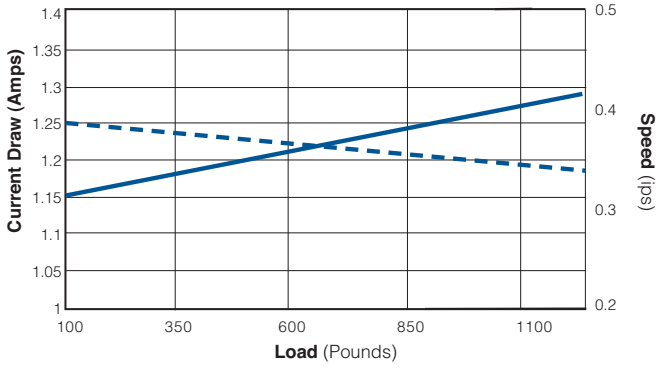

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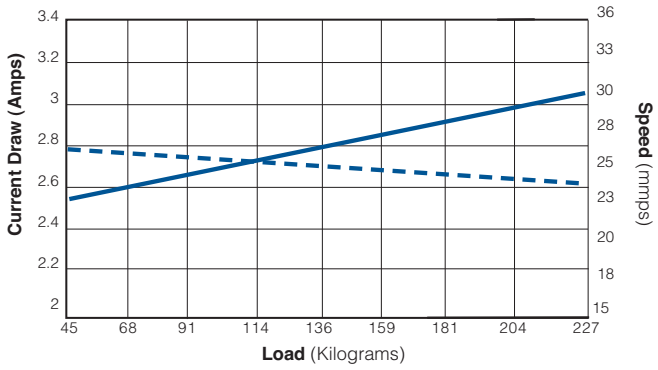
Performance Curves Metric

Current Draw
Speed

K2G10-115VAC



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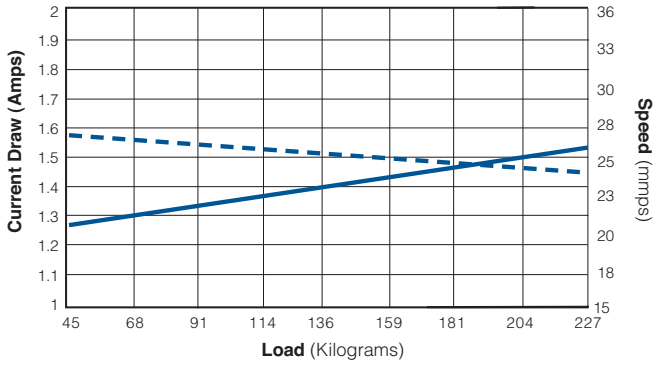

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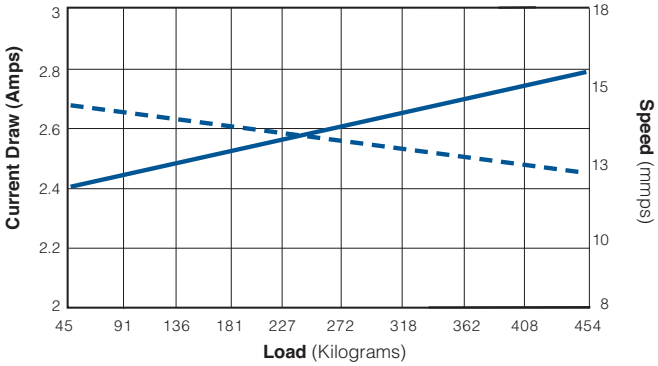

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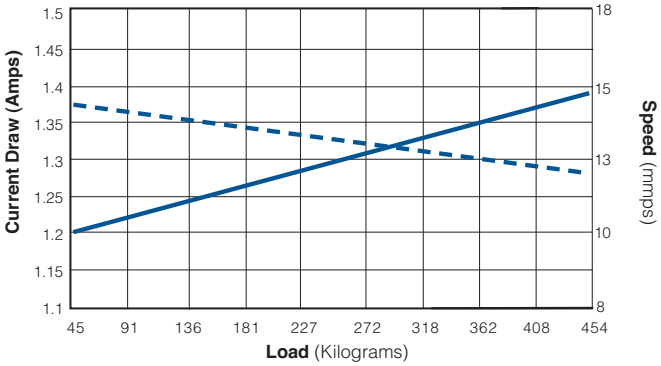

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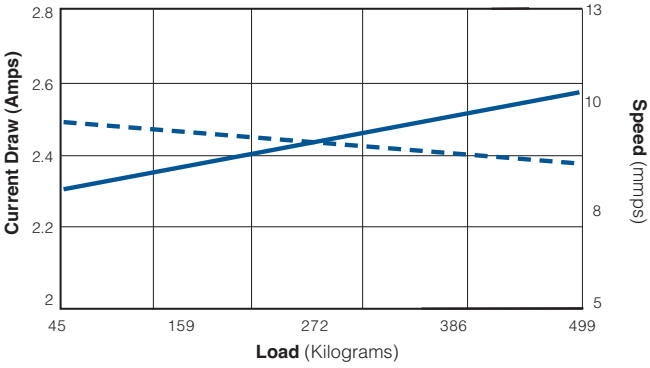
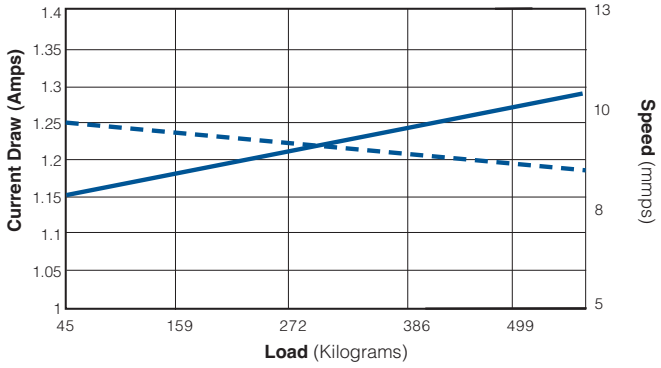


K2G30-230VAC



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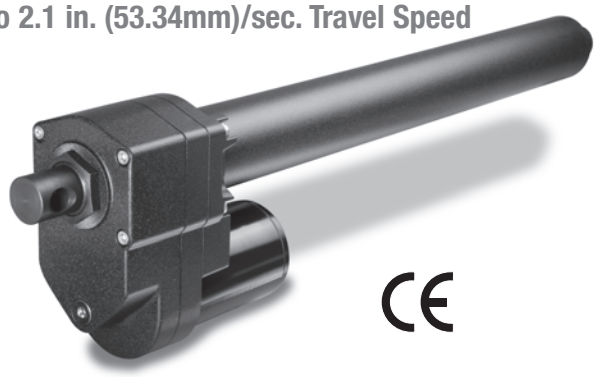
B-Track K2x

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 (-34ºC to 60ºC)
- 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)

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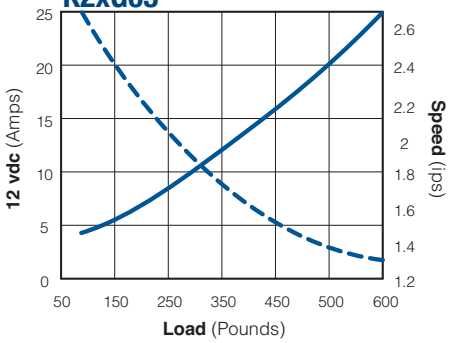
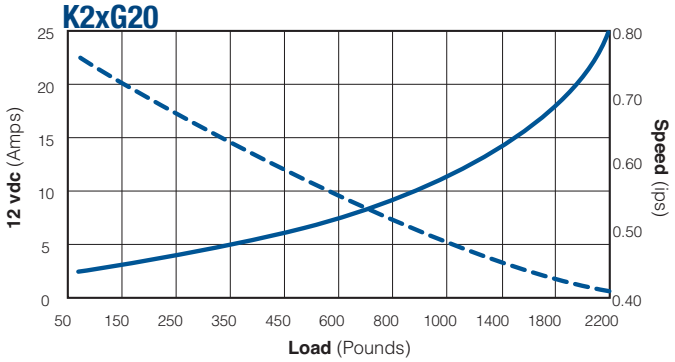
Performance Curves Imperial

Current Draw ——— Speed - - - -

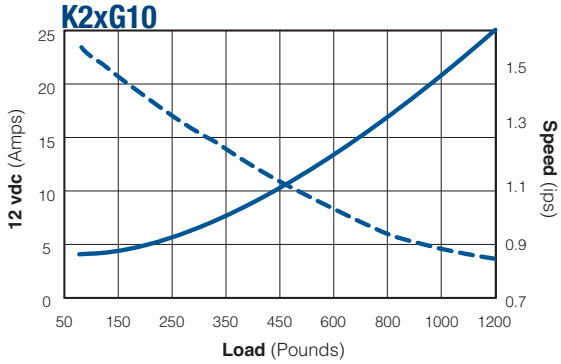
K2xG05



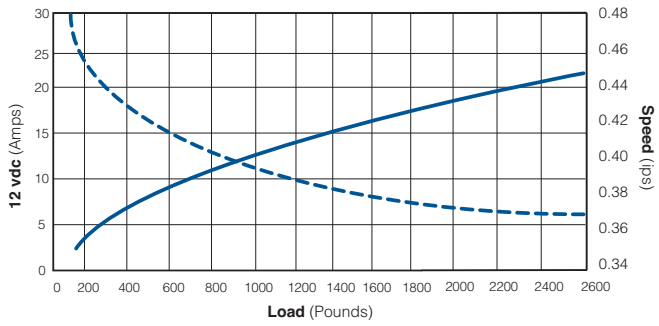
K2xG20



K2xG10



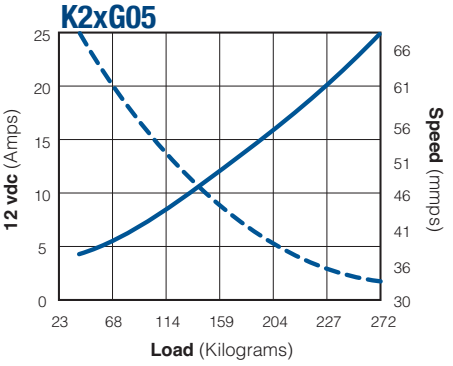
K2xG30



Performance Curves Metric

Current Draw ——— Speed - - - -

K2xG05



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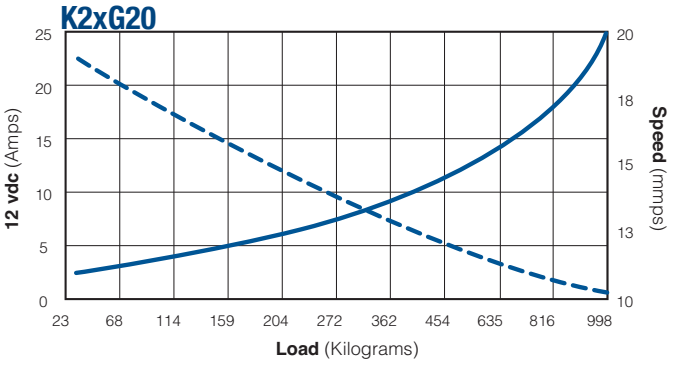

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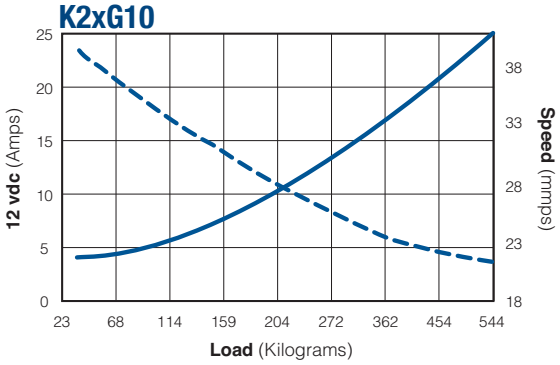

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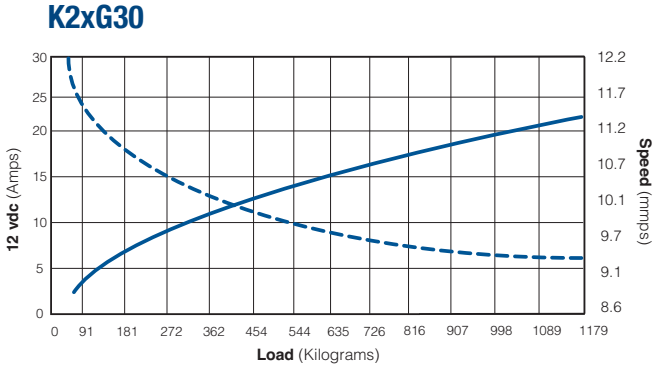

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B-Track K2x

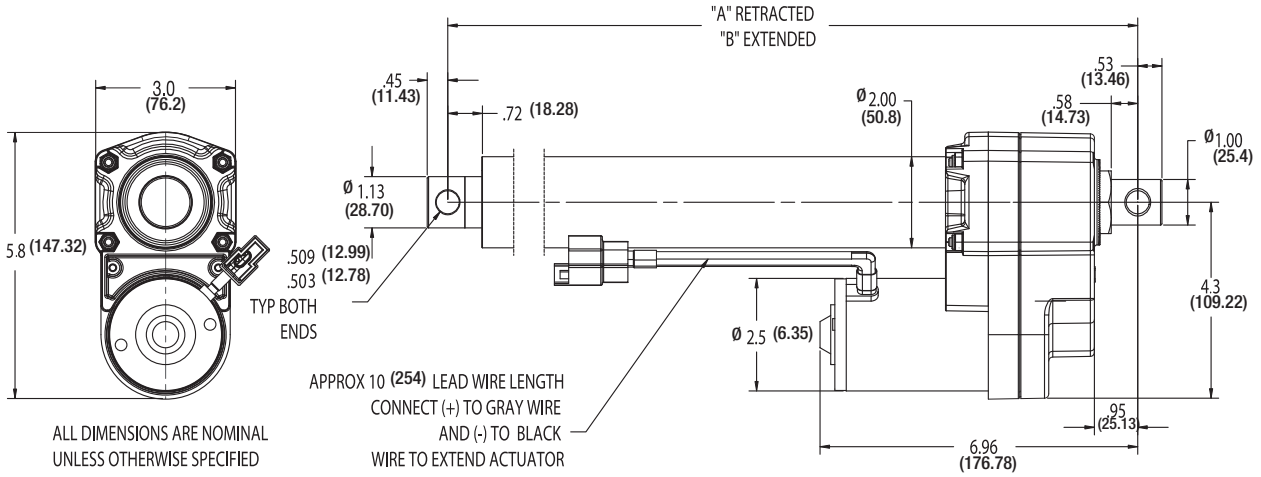
Dimensions

B-Track K2x	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		2	**50**	**4**	**100**	**6**	**150**	**8**	**200**	**10**	**254**	**12**	**300**
	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	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		14	**355**	**16**	**405**	**18**	**450**	**20**	**508**	**22**	**558**	**24**	**600**
	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



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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

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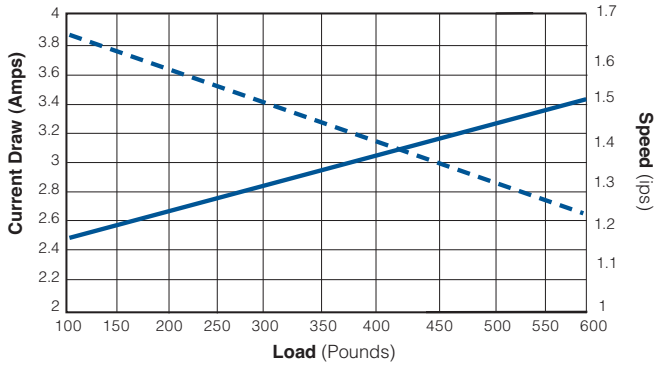
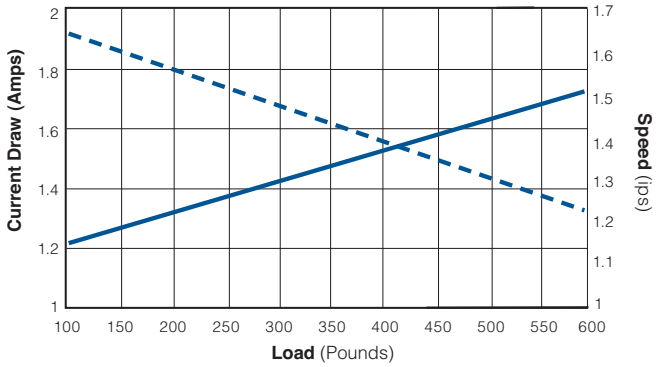
Performance Curves Imperial

Current Draw
Speed

K2xACG05-115VAC



K2xACG05-230VAC



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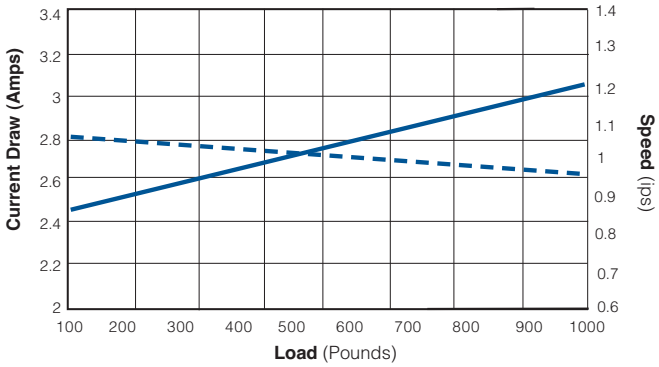

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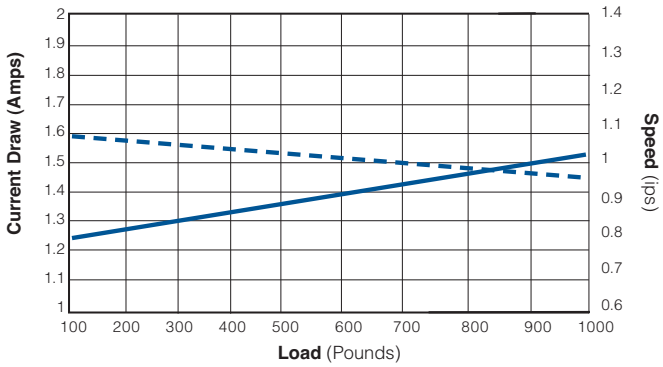
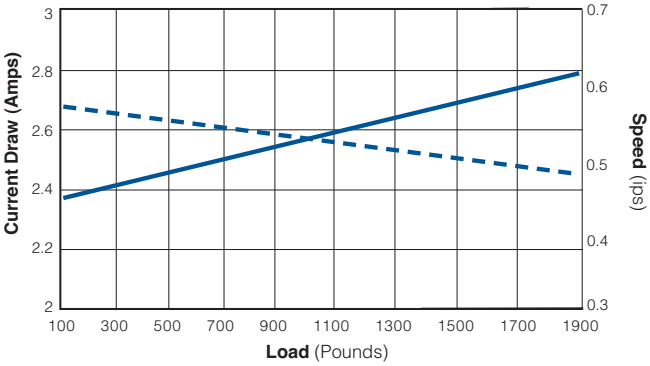


K2xACG20-115VAC



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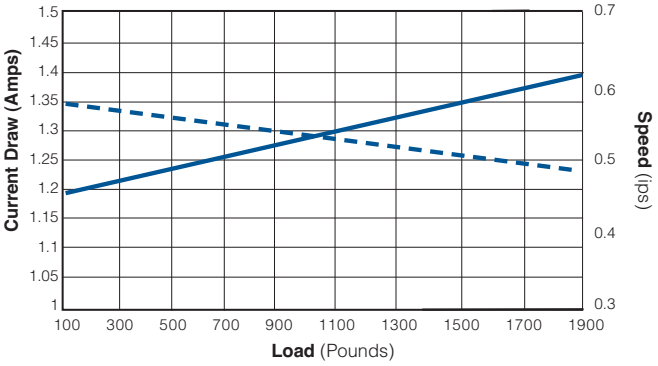

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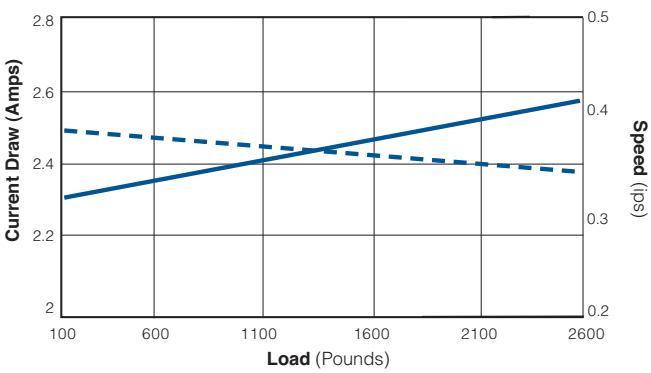

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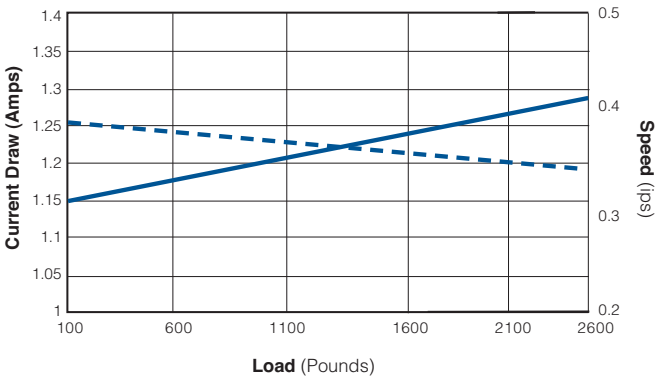

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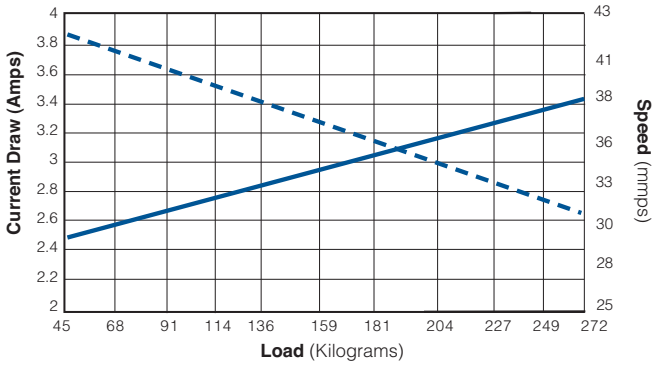
Performance Curves Metric

Current Draw
Speed

K2xACG05-115VAC



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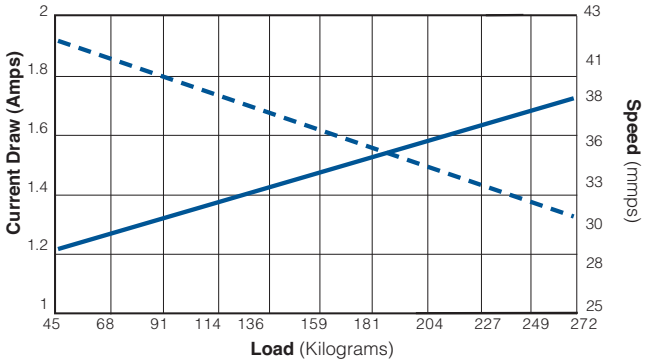

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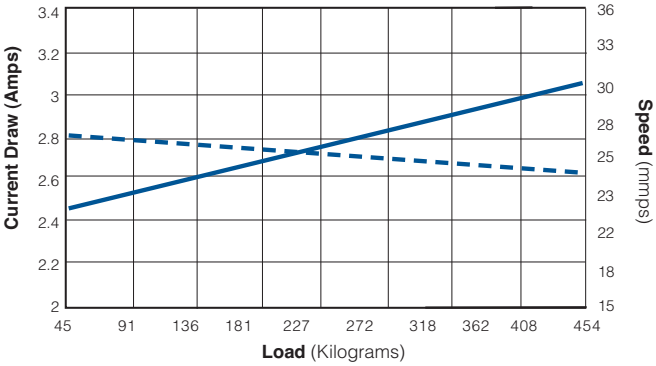

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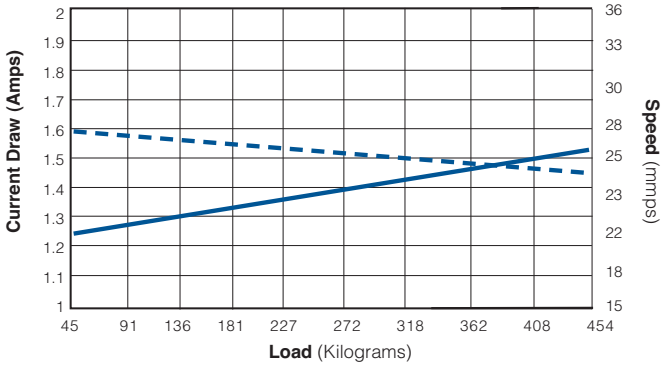

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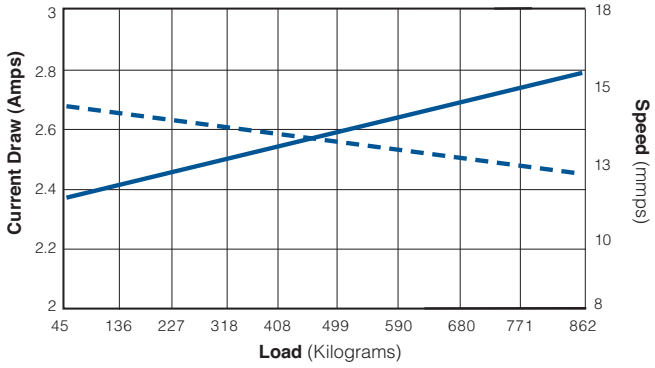

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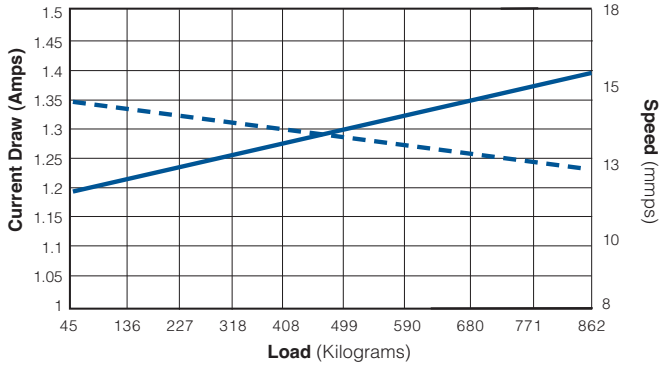
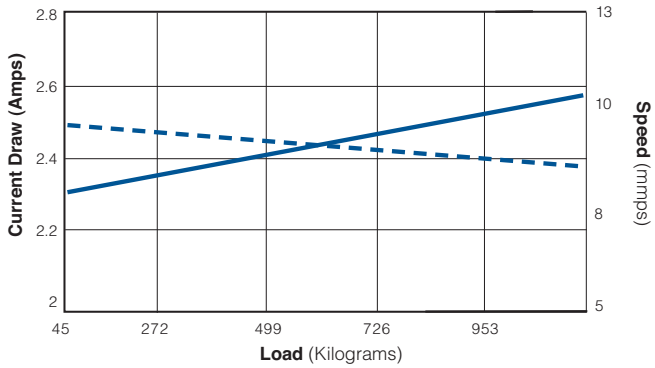


K2xACG30-115VAC



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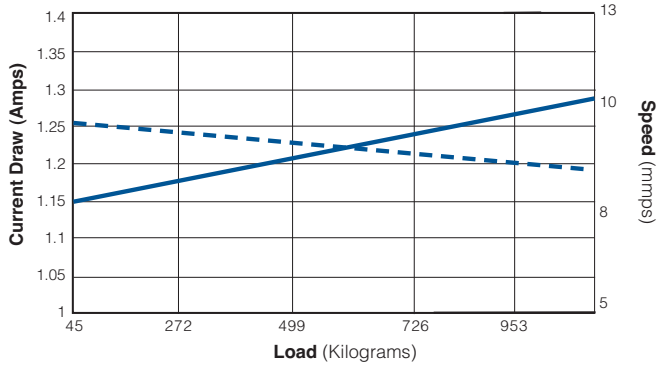

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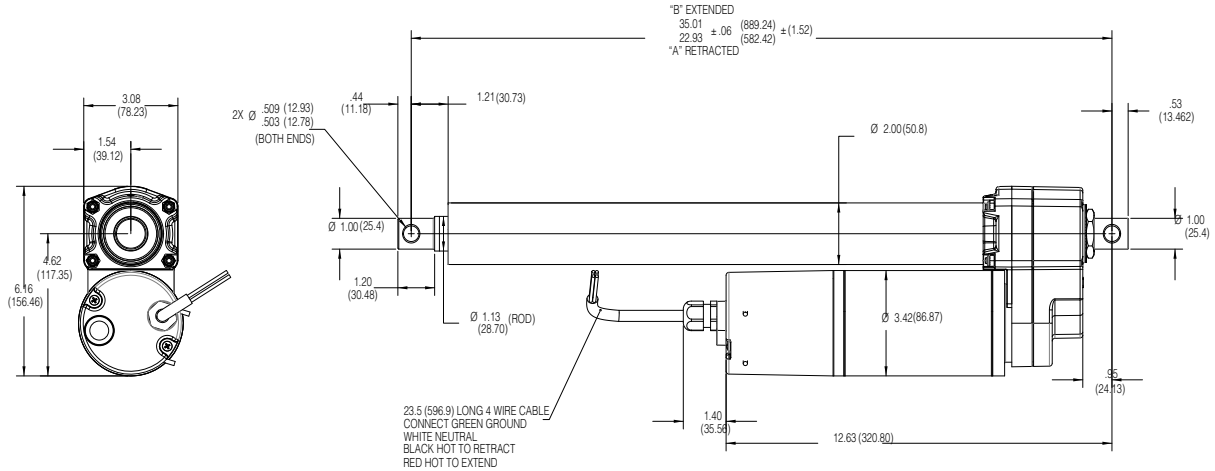
B-Track K2xAC

Dimensions

B-Track K2x		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
	Stroke	**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



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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.

Standard

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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.

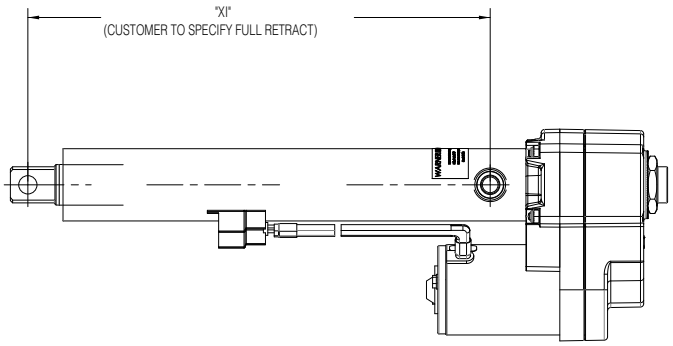
- A teaming of creative resources
- Joint understanding of our actuator capabilities and how they can be tailored to your application
- An understanding of the lowest cost solution to meet your actuator requirements
- Providing a complete solution that includes controls as required

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

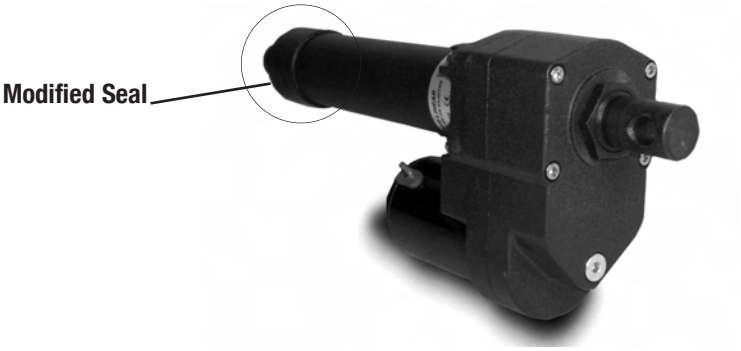
Some common versions of these are shown as our K2PL/K2XPL and K2JS/K2XJS families.

Additional common modifications are:

Tube/Trunion Mount



Modified Seal design for expanded contamination protection



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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.

CE

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)

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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

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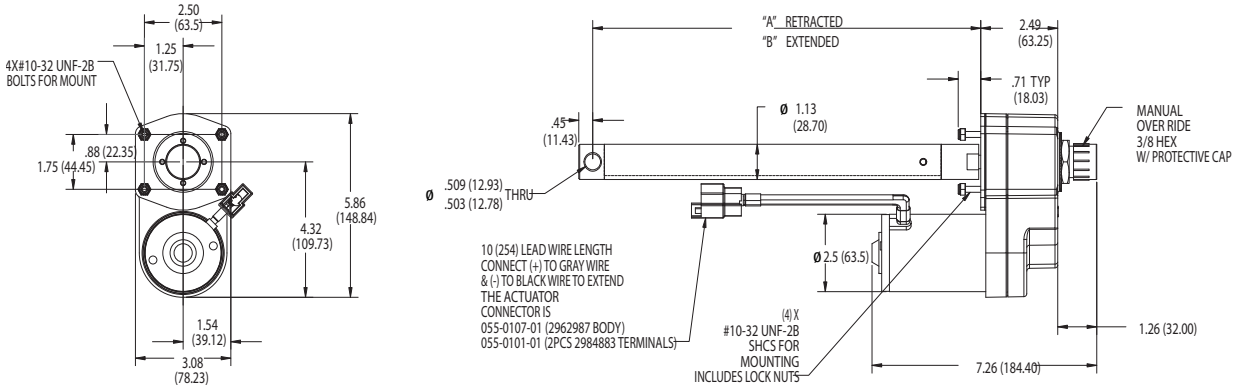
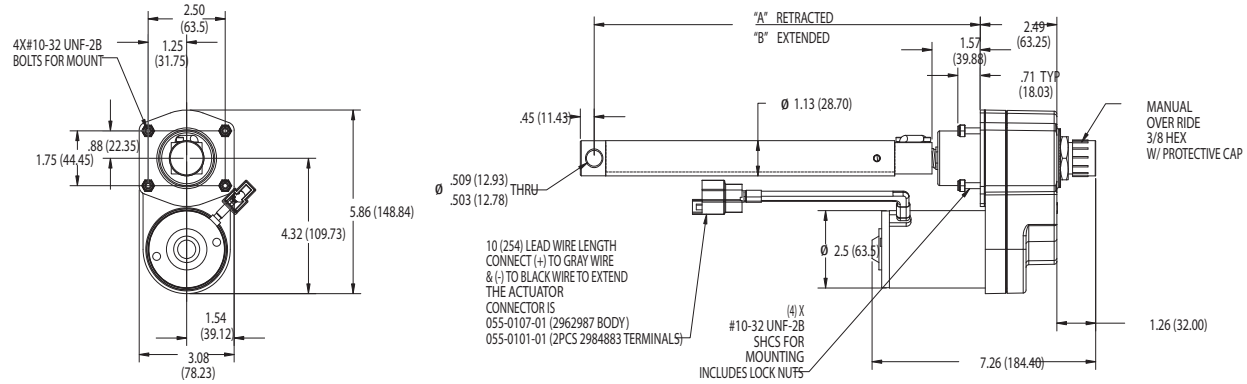
B-Track K2PL



B-Track K2XPL



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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.

CE

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)

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Performance Curves

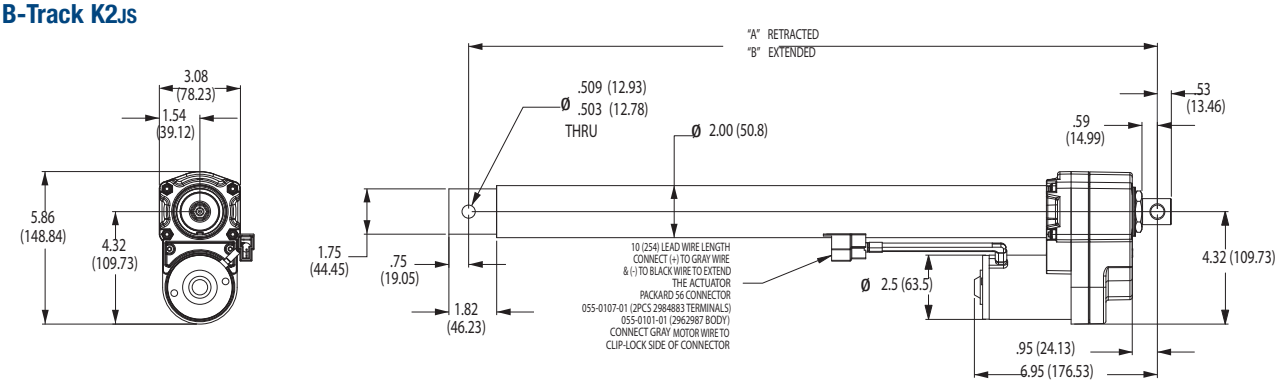
See page 20 for K2JS performance curves.
See page 27 for K2XJS performance curves.

Dimensions

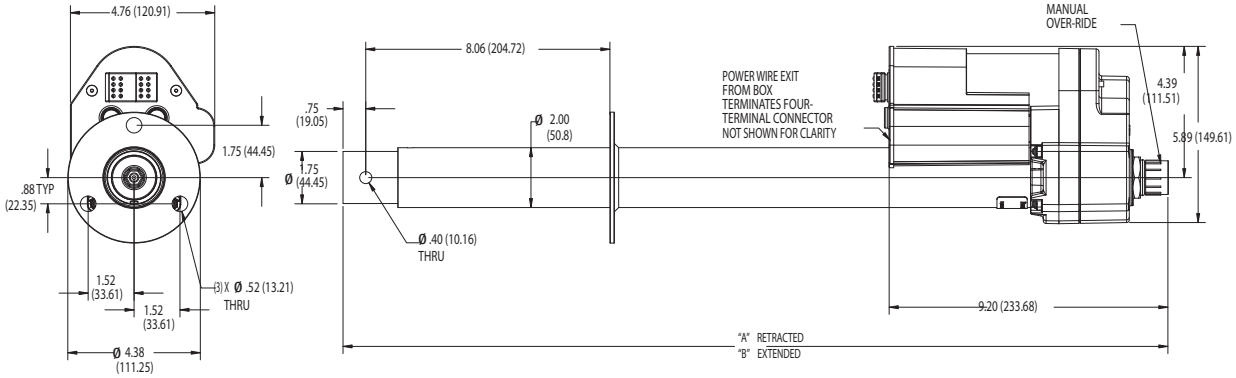
B-Track K2JS/K2XJS	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		8	**200**	**10**	**254**	**12**	**300**	**14**	**355**	**16**	**405**
	A	20.98	533	22.98	584	24.98	634	26.98	685	28.98	736
	B	28.98	736	32.98	838	36.98	939	40.98	1041	44.98	1142

Note: Special lengths available

B-Track K2JS



B-Track K2XJS



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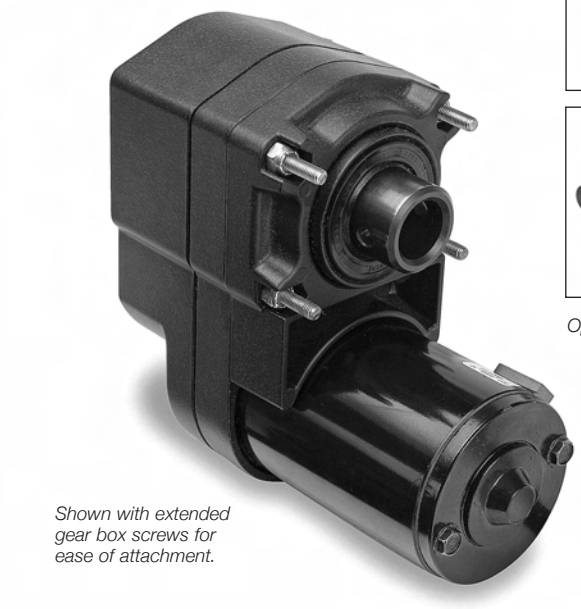
B-Track K2RA

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

CE

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 (-34ºC to 60ºC)
- 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 (125ºC)
- 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)

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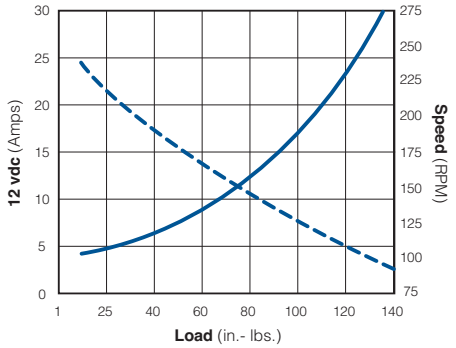
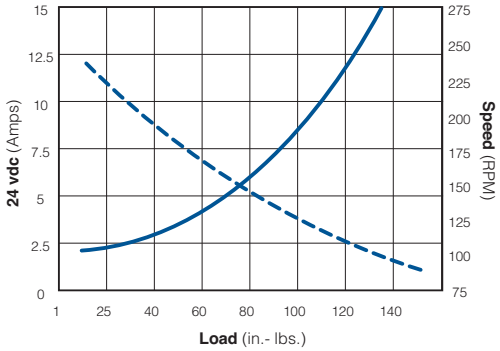
Performance Curves Imperial

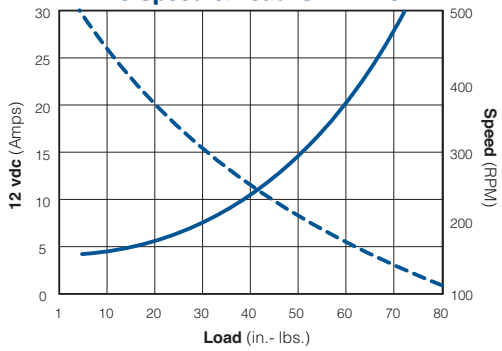
K2RA20 Speed & Load @ 12 VDC



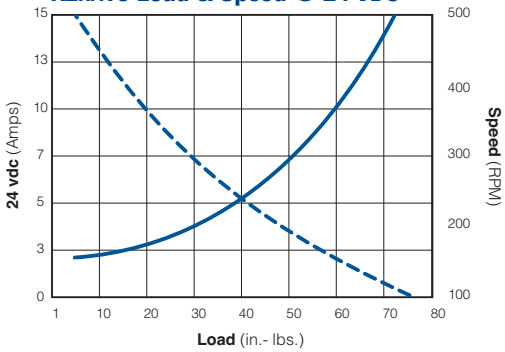
K2RA20 Load & Speed @ 24 VDC



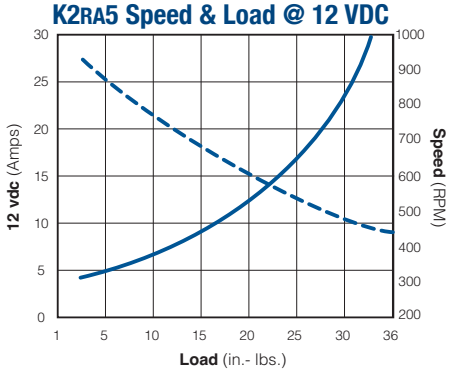
K2RA10 Speed & Load @ 12 VDC



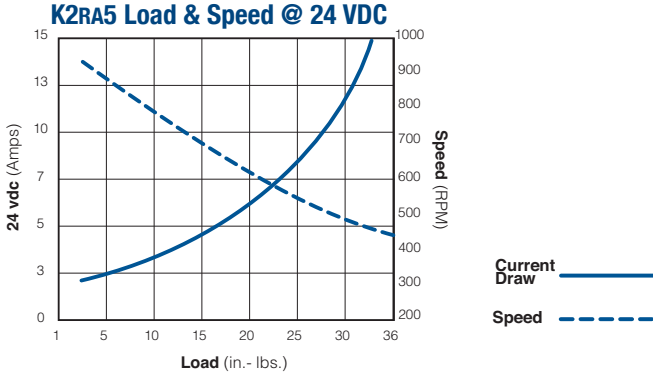
K2RA10 Load & Speed @ 24 VDC



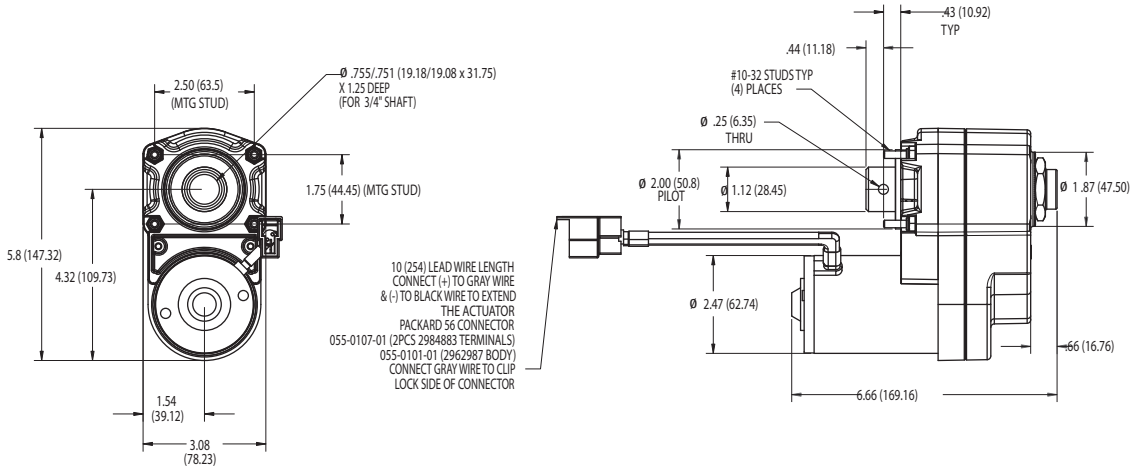
K2RA5 Speed & Load @ 12 VDC



K2RA5 Load & Speed @ 24 VDC



Dimensions



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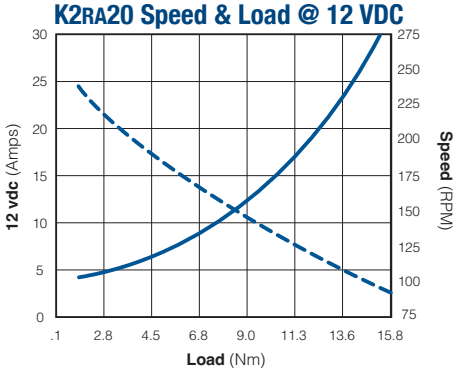
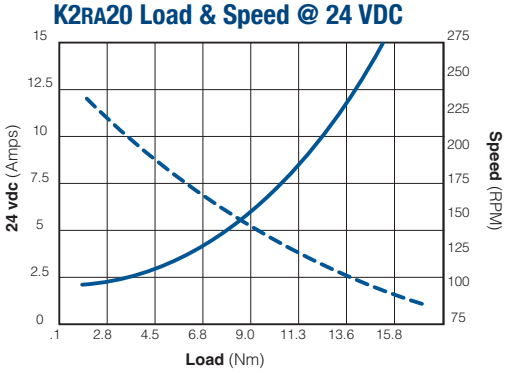
B-Track K2RA

Performance Curves Metric

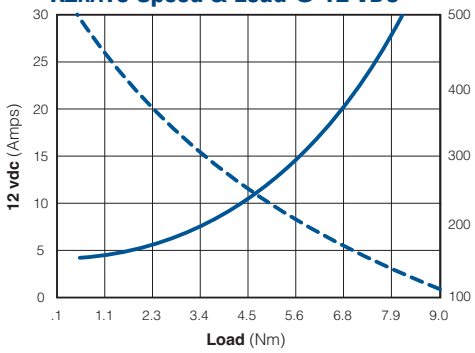
K2RA20 Speed & Load @ 12 VDC



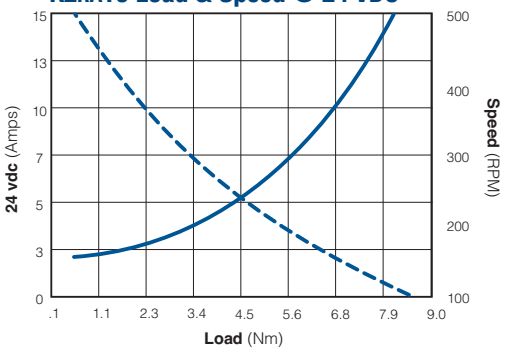
K2RA20 Load & Speed @ 24 VDC



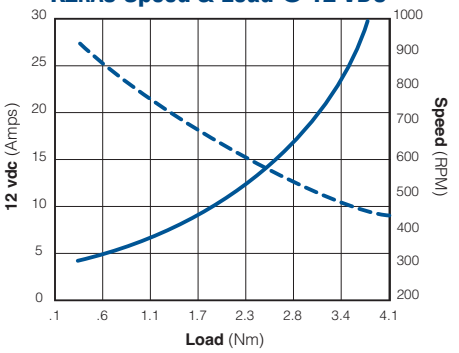
K2RA10 Speed & Load @ 12 VDC



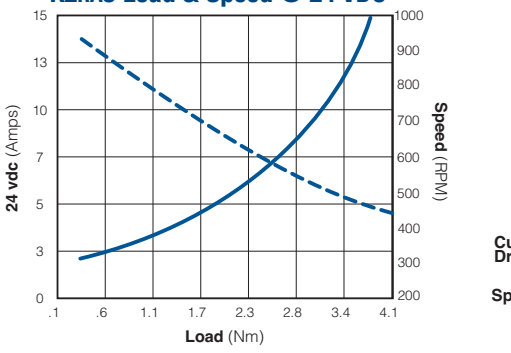
K2RA10 Load & Speed @ 24 VDC



K2RA5 Speed & Load @ 12 VDC



K2RA5 Load & Speed @ 24 VDC



Current Draw

Speed

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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

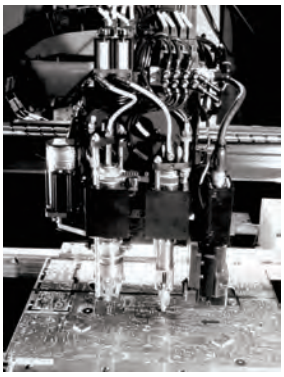
Fixed, manual and electronic adjustable end stops

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.

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Power Supply/Control/Accessory Selection Guide

Customer Provides Power

Power Supply Required

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

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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
SBC	DC	3	—	10

Connector Syle: (One End Female Weatherpack) Other End is Male Version of:
1=Mini Packard 56 (M-Track)
2=Packard 56
3=Weatherpack
4=Deutsch (DT06-2S)

Length of Mating Cable in Feet
(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
SBC	AC	—	A

Input Wire Style
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.

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M-Track Power Supply

Extension Cable Part Number

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

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 Syle: 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	input Power	Output Power	Connector Style	Input Wire Syle	Switch	Readout
SBC	AC2	12V	1	A	S	R

Input Power

AC=115 VAC input
AC2=230 VAC input

Output Power

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

Connector Syle: (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

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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

AC Power Supply	input Power	Output Power	Connector Style	input Wire Syle	Switch	Potentiometer
SBC	AC2	90V	4	A	S	P

Input Power
AC=115 VAC input
AC2=230VAC input

Output Power
90V=90VDC

Connector Syle: (Female Gender)
4=Deutsch DT06-3S

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 unit)

Switch
S=Rocker Switch
Blank=No Switch

Potentiometer
Potentiometer (used for speed control)
Blank = No Pot

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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

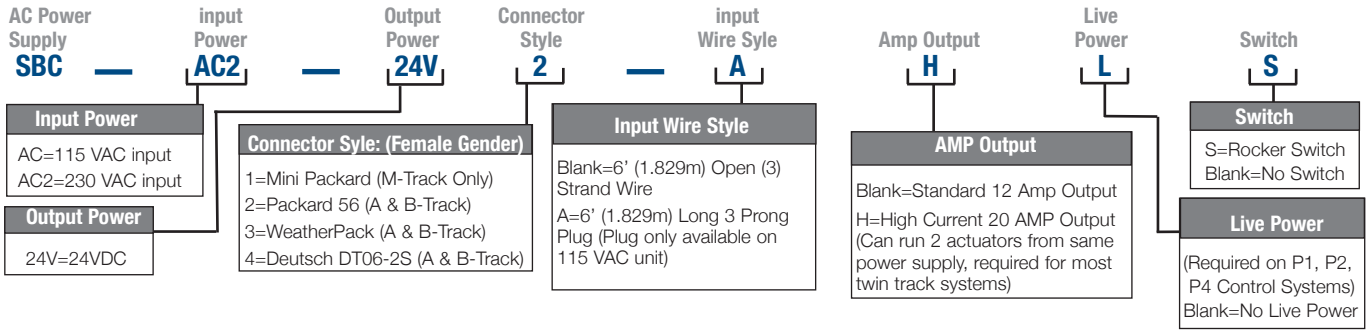
Enclosure: 6.69"L x 6.69"W x 3.54"H (169.93mm L x 169.93mm W x 89.916mm H) polycarbonate housing NEMA 4, 4x, 12, 13

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



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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".

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

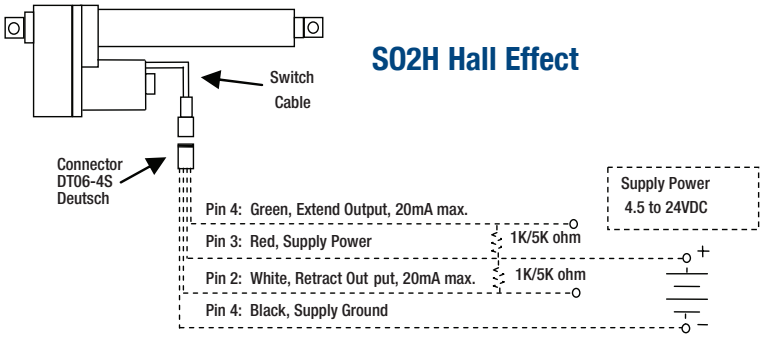
Supply Voltage: Up to 200 VDC max. O switch
Up to 175 VDC max. C switch
Switching Current: 1.2 Amps max. O switch
1.5 Amps max. C switch
Contact Rating: 10 Watts max. O switch
5 Watts max. C switch
Lead Wires: 24 AWG
Operating Temperature: -40 to 105 deg C
Housing: Hermetically sealed

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).

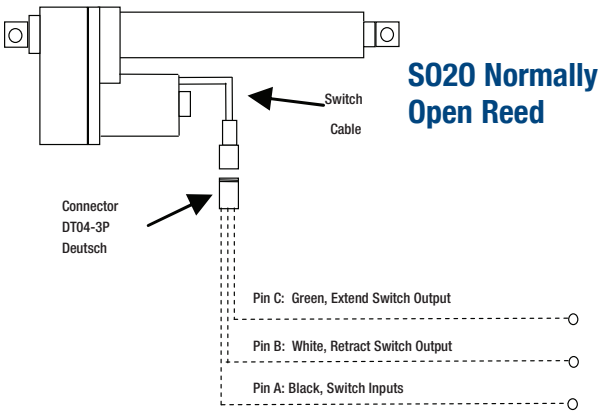
Reed Switch Part Numbers Available, with K2XE actuator product only:
SO2O – 2 Normally Open, adjustable reed switches
SO2C – 2 Normally Closed, adjustable reed switches
SO3O – 3 Normally Open, adjustable reed switches
SO3C – 3 Normally Closed, adjustable reed switches
SO4O – 4 Normally Open, adjustable 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".



SO2H Hall Effect

***All dotted lines are customer connections**



SO2O Normally Open Reed

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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: -30º to +140º F (-34ºC to 60ºC)

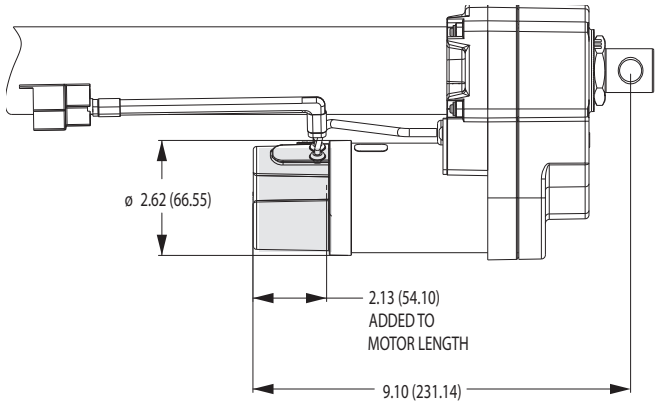
Options

P1.0 Standard Stoke 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.



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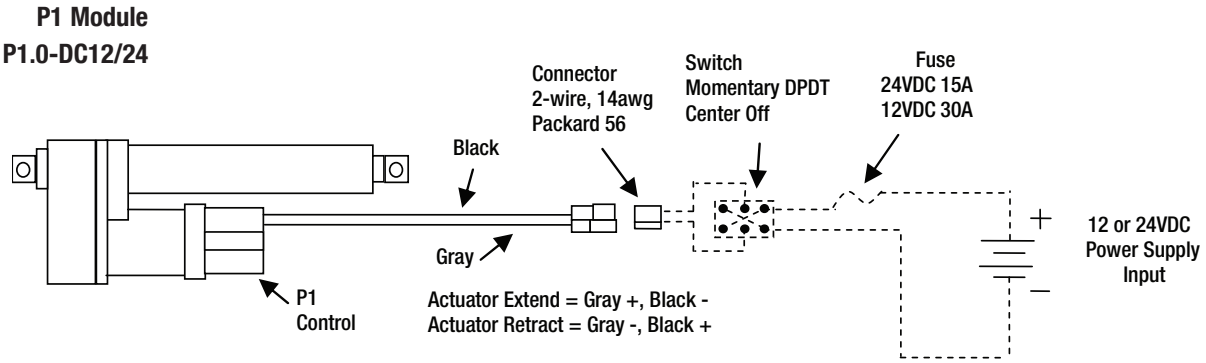
P1 Electronic Stroke Limit Control

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.

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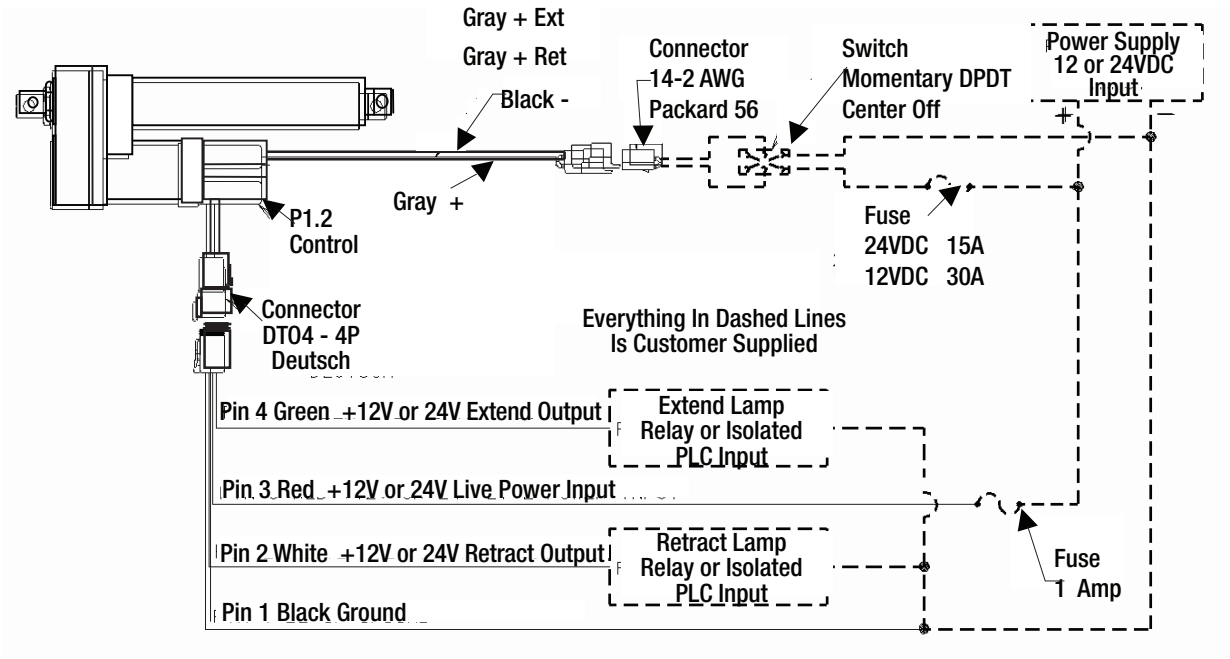
P1 Electronic Stroke Limit Control



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.

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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: -30º to +140º F (-34ºC to 60ºC)

Options

EP1.0 Standard Stoke Limit Control

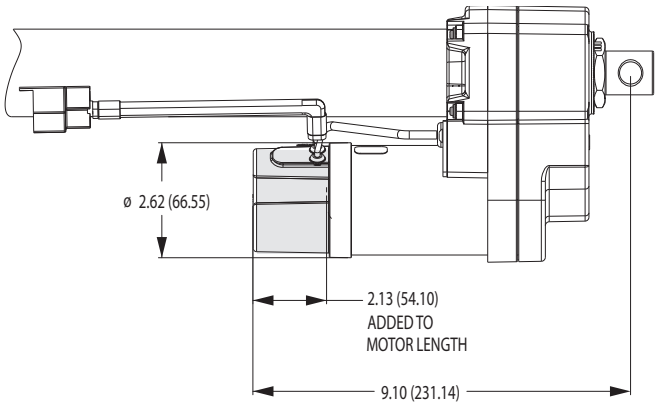
EP1.1 Same as P1.0 with two LEDs on the outside of the control module. LEDs indicate when end of travel has been reached.

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.



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Controls PQS

PQS Quick Stop Control

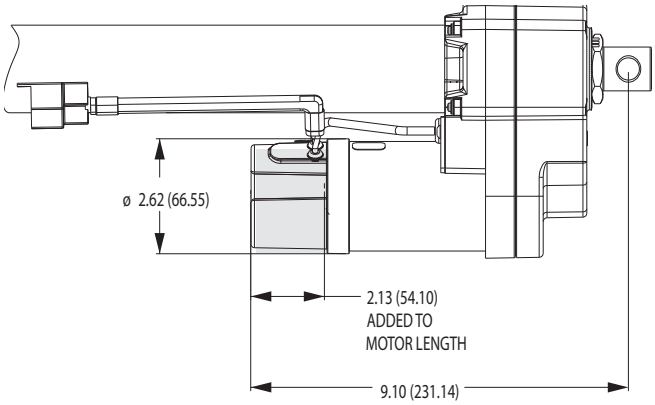
The PQS Quick Stop Control is an adjustable bi-directional current control that monitors motor current draw during actuator movement. If current draw exceeds set point due to obstruction or overload, the control removes power from the motor stopping the actuator. The PQS control does not currently have 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

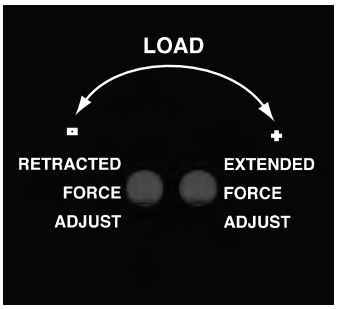
Supply Power: 25 Amps @ 12 volts dc
12.5 Amps @ 24 volts dc

Operating Temperature: -30˚ to 140˚ F (-34ºC to 60ºC)



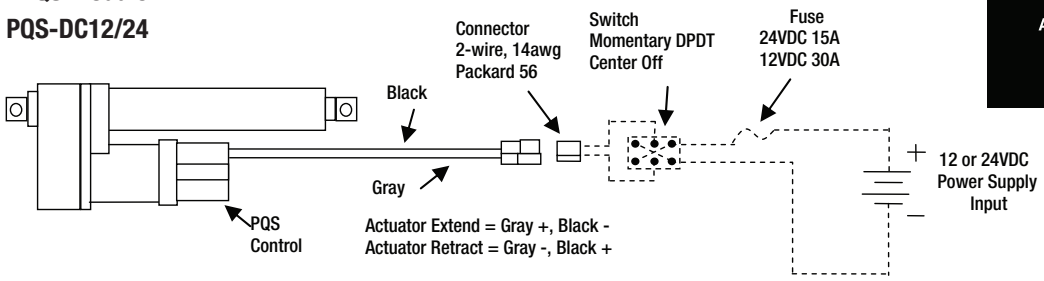
Changing extend or retract load limits:

- 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

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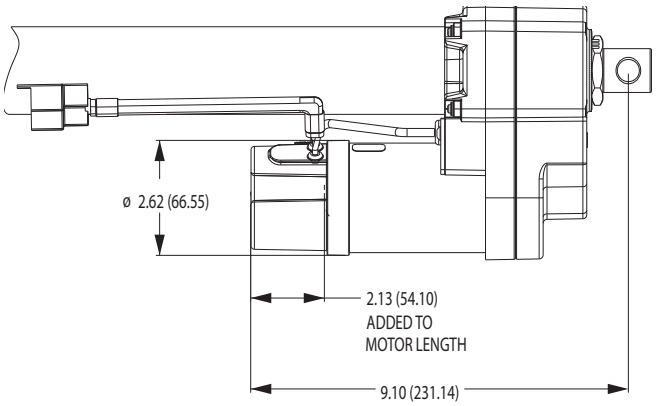
P2-DC Position Feedback Control

Specifications

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

Operating Temperature: -30˚ to 140˚ F (-34ºC to 60ºC)

Protection: Zenerdiode 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.

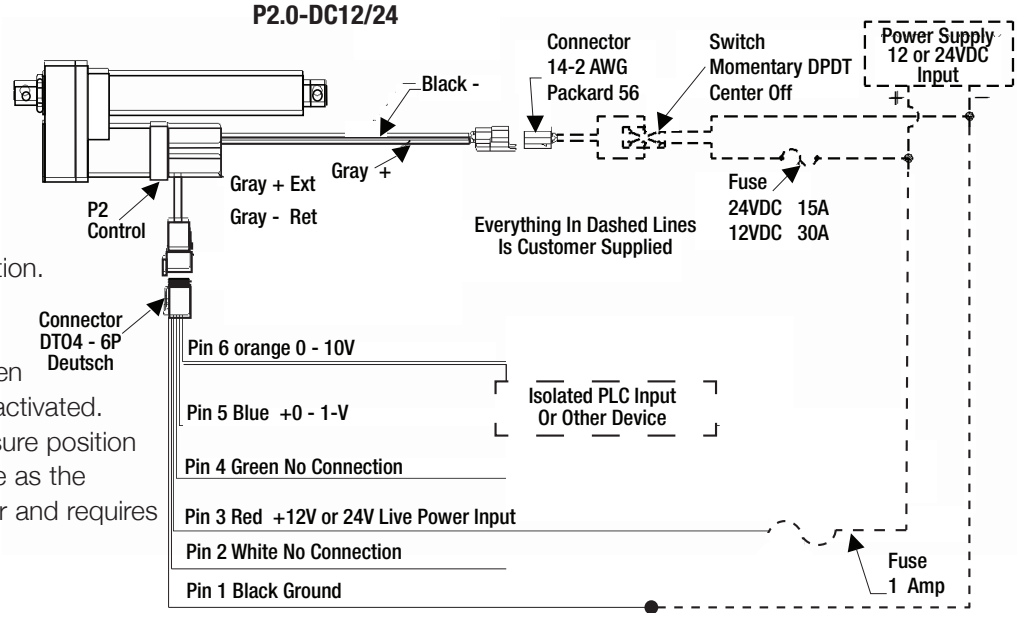
Hall Effect limit switches (those used in the P1.0 control) are used to provide end of travel positioning and will shut off actuator at both full extend and retract settings. All sensors are non-contact and sealed for life. They are integrated within the actuator and control to protect them from contamination.

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

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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

Power: 12/24 VDC

Maximum Current: 20 Amps single, 10 Amps dual

Operating Temperature: -20º to +140º F (-28ºC to 60ºC)

Operating Frequency: 915 MHz

Enclosure: IP67

Replaceable Remote Battery: CR2032, life expectancy dependent on use, but should last approx. 2 years

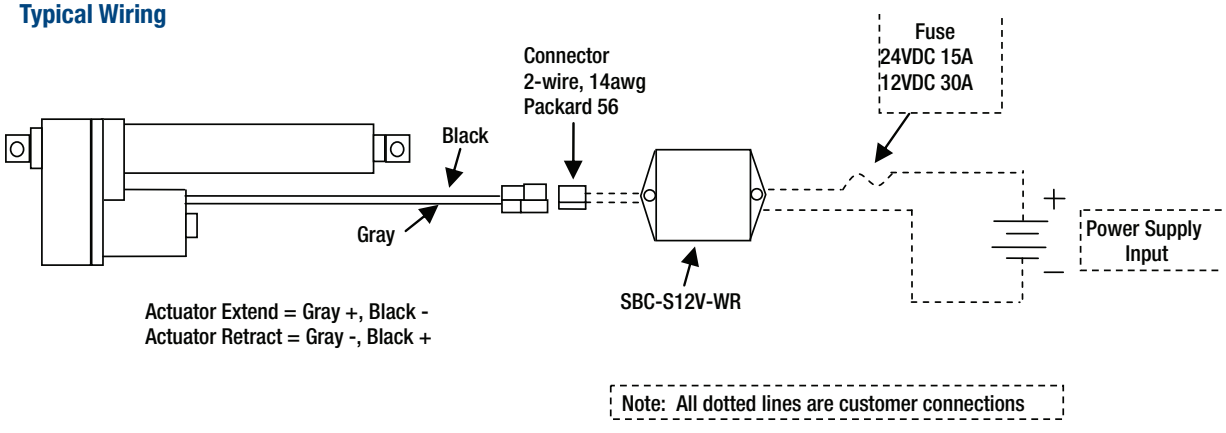
Models Available

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



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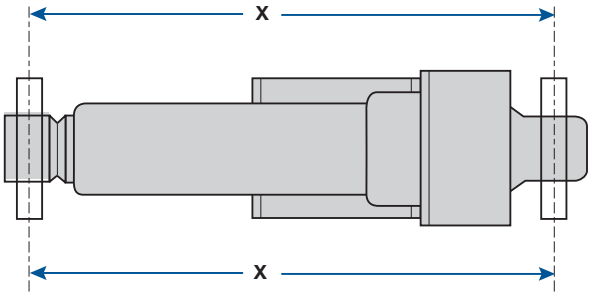
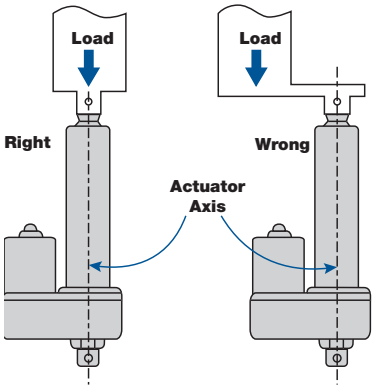
General Mounting Information

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.

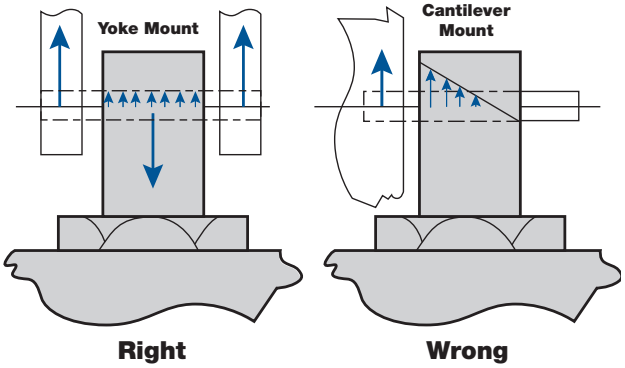
Use of solid pins provide maximum holding capability with a retaining ring or cotter pin on each end to prevent the solid pin from falling out of the mounting bracket (it is best to avoid roll pins and spring pins).



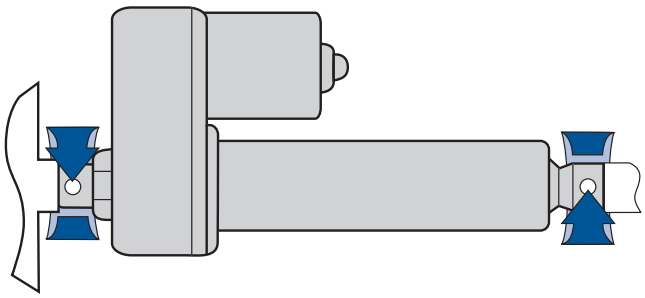
Mounting pins must be parallel to each other as shown above. Pins which are not parallel can cause excess vibration or actuator binding.



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)

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Glossary

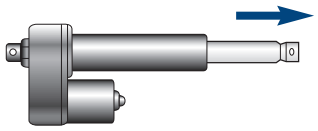

Figure 1 Axial load

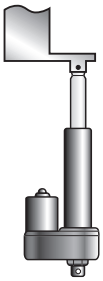

Figure 2 Cantilevered mount

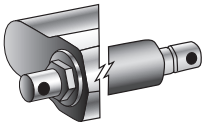

Figure 3 Clevis mount

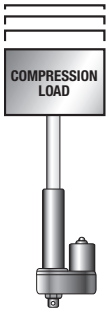

Figure 4 Compression load

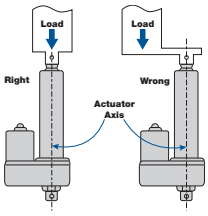

Figure 5 Eccentric load

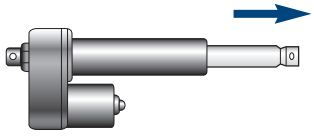

Figure 6 Extended length

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

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.

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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).

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).

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).

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 ± 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.

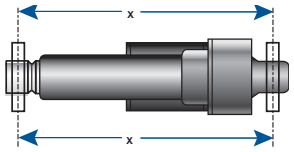

Figure 7 Pin mount

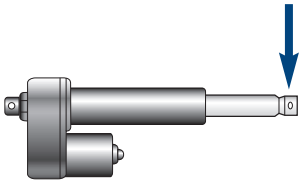

Figure 8 Radial load also side loading

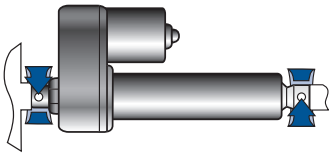

Figure 9 Restraining torque

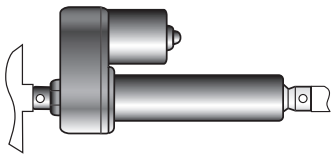

Figure 10 Retracted length

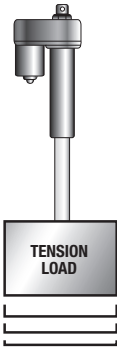

Figure 11 Tension load

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Notes

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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

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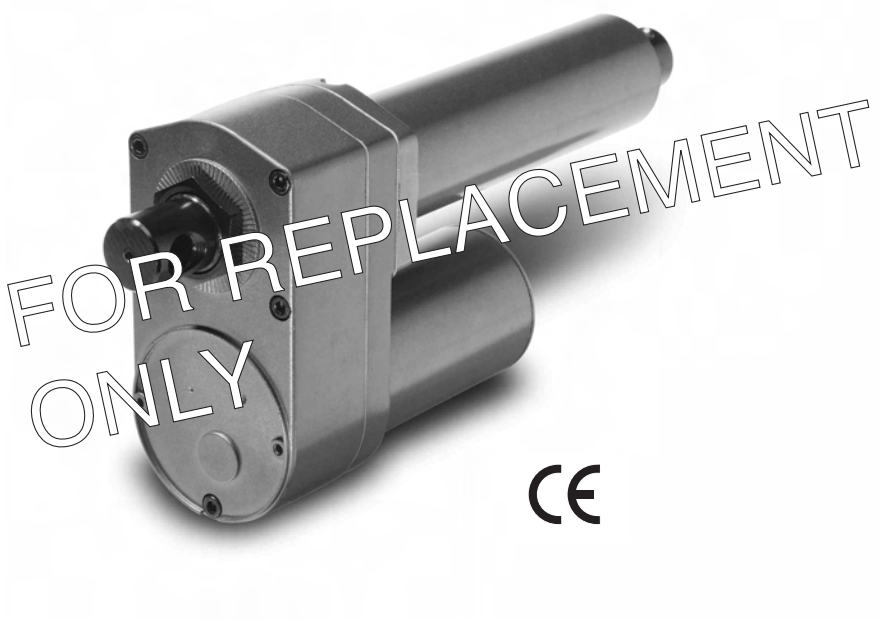
A-Track 2

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

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

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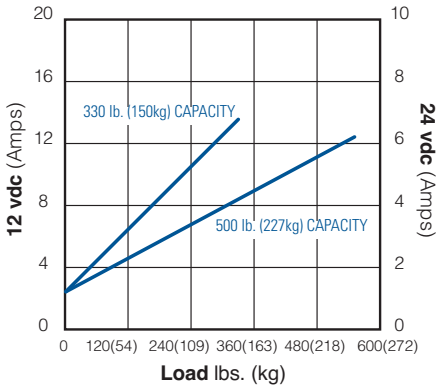
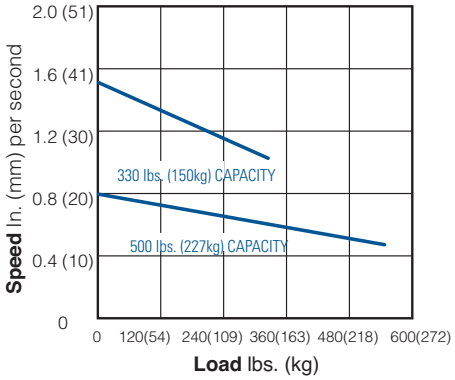
Performance Curves

Current vs Load



Speed vs Load



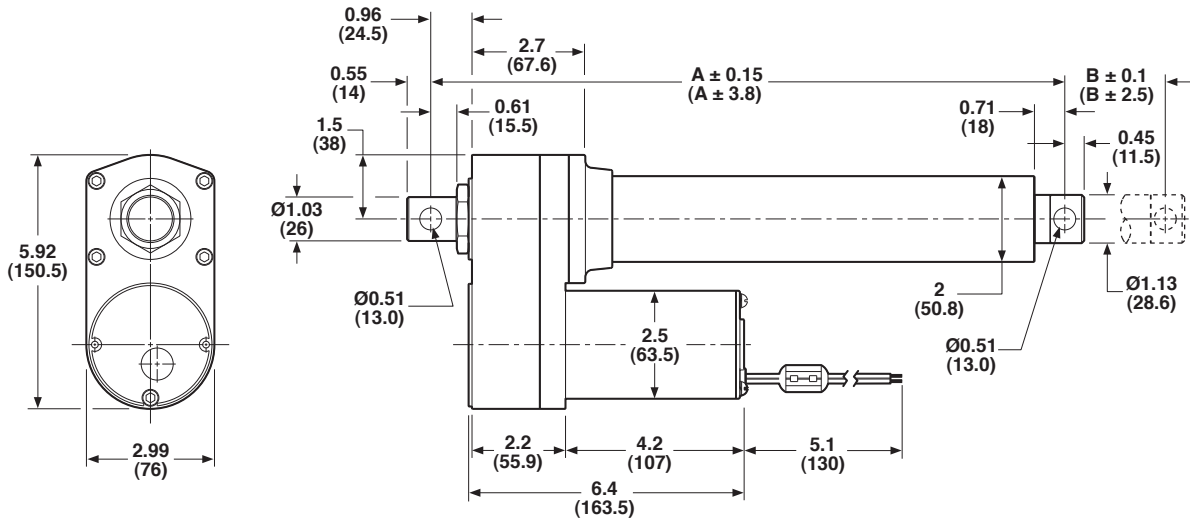
Dimensions

With Limit Switches

A-Track 2	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		4	**100**	**6**	**150**	**8**	**200**	**12**	**300**	**18**	**450**	**24**	**600**
	A	13.31	338	15.31	389	17.13	435	21.26	540	30.39	772	36.38	924
	B	4.01	102	6.02	153	7.99	203	12.0	305	17.99	457	24.01	610

Without Limit Switches

A-Track 2	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		4	**100**	**6**	**150**	**8**	**200**	**12**	**300**	**18**	**450**	**24**	**600**
	A	10.3	262	12.32	313	14.33	364	18.31	465	27.40	696	33.39	848
	B	4.01	102	6.02	153	7.99	203	12.00	305	17.99	457	24.01	610



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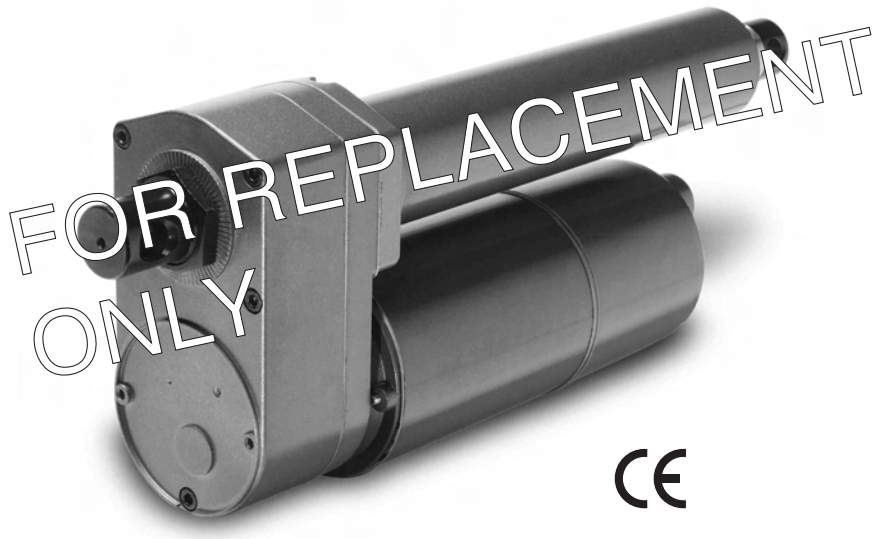
A-Track 5

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

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

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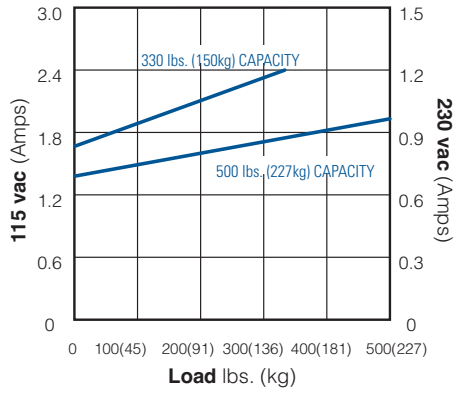
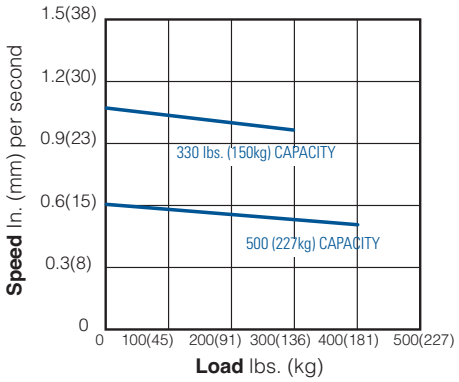
Performance Curves

Current vs Load



Speed vs Load



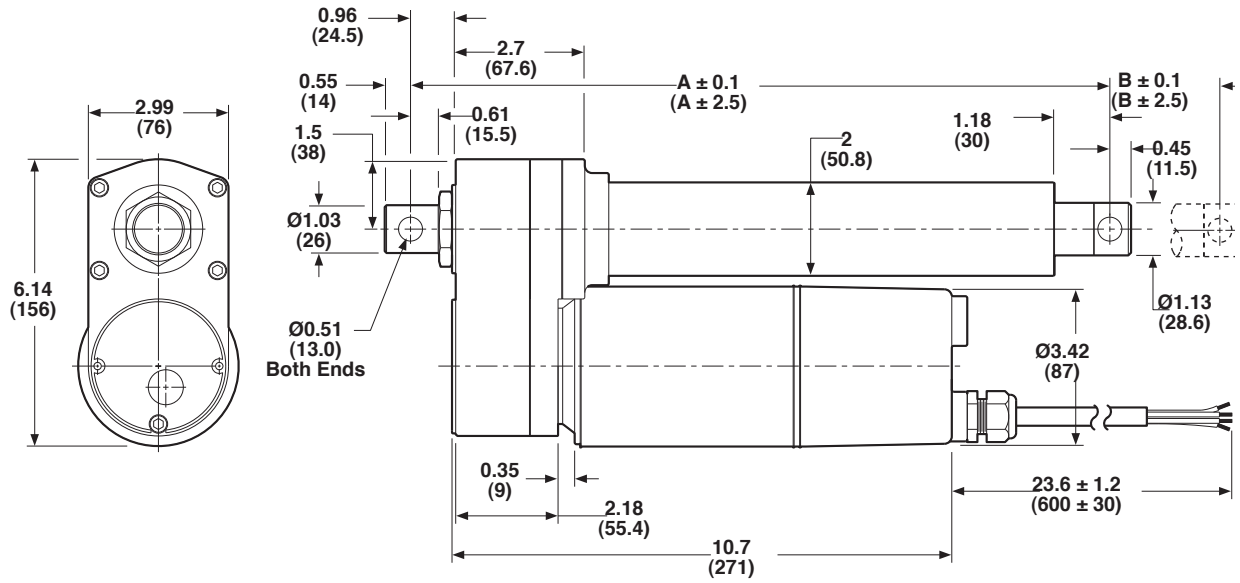
Dimensions

With Limit Switches

A-Track 5 Acme	Stroke	in. 4	mm 100	in. 6	mm 150	in. 8	mm 200	in. 12	mm 300	in. 18	mm 450	in. 24	mm 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. 4	mm 100	in. 6	mm 150	in. 8	mm 200	in. 12	mm 300	in. 18	mm 450	in. 24	mm 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



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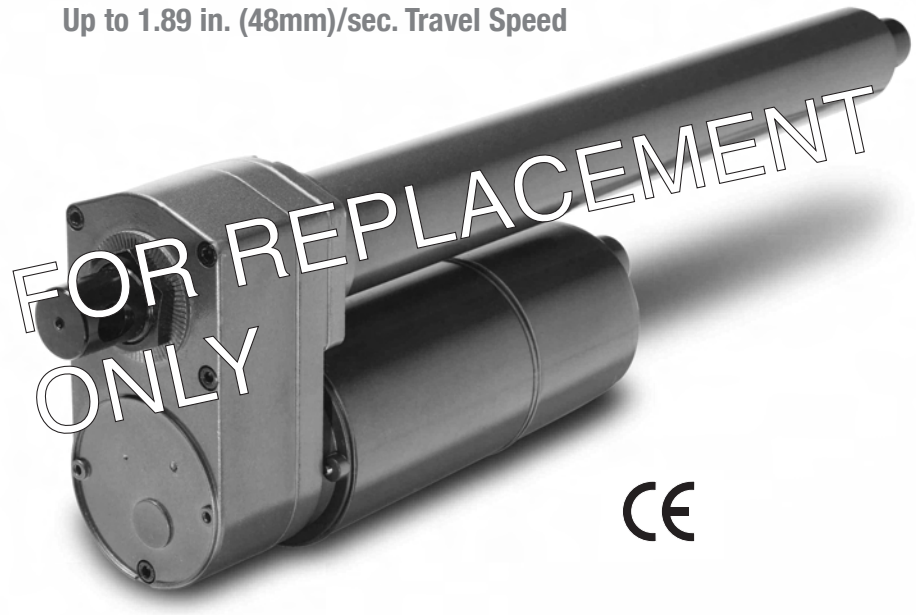
QRO (442) 1 95 72 60 ventas@industrialmagza.com

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 kilometers) 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

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

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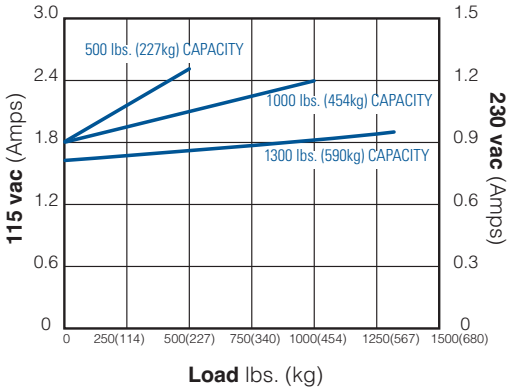
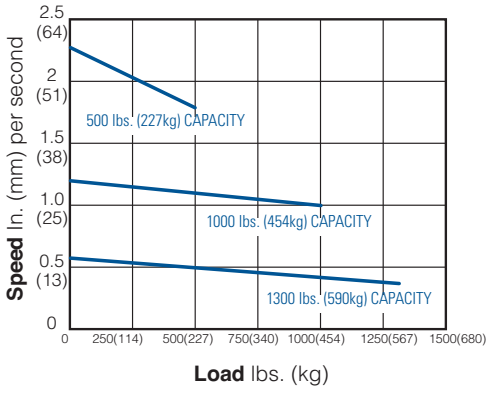
Performance Curves

Current vs Load



Speed vs Load



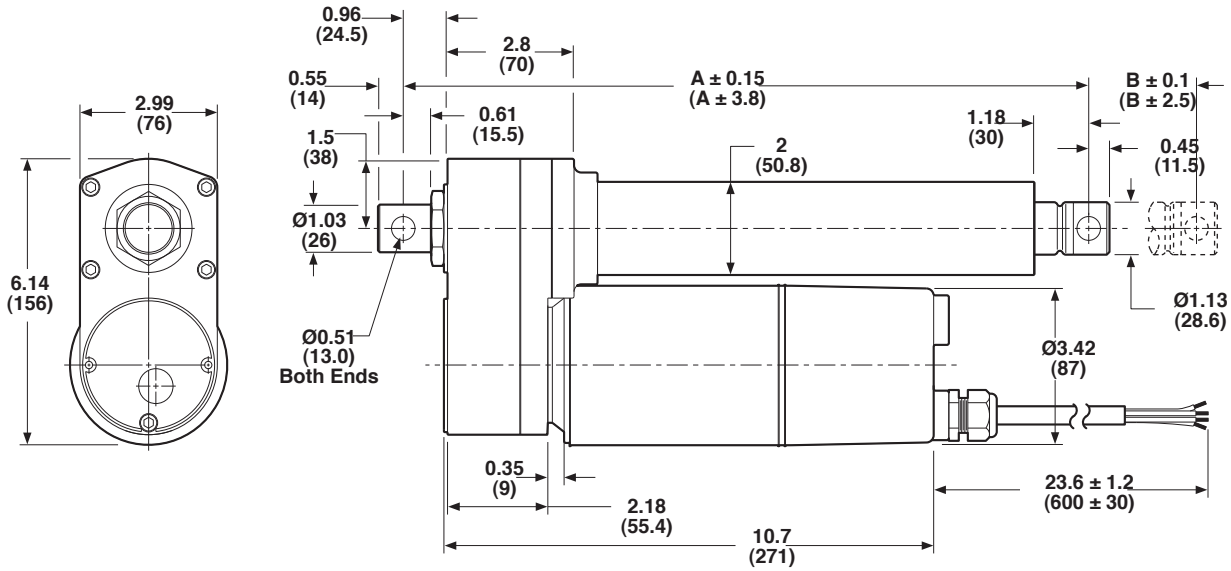
Dimensions

With Limit Switches

	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		4	**100**	**6**	**150**	**8**	**200**	**12**	**300**	**18**	**450**	**24**	**600**
A-Track 5 Ball Screw	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

	Stroke	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		4	**100**	**6**	**150**	**8**	**200**	**12**	**300**	**18**	**450**	**24**	**600**
A-Track 5 Ball Screw	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



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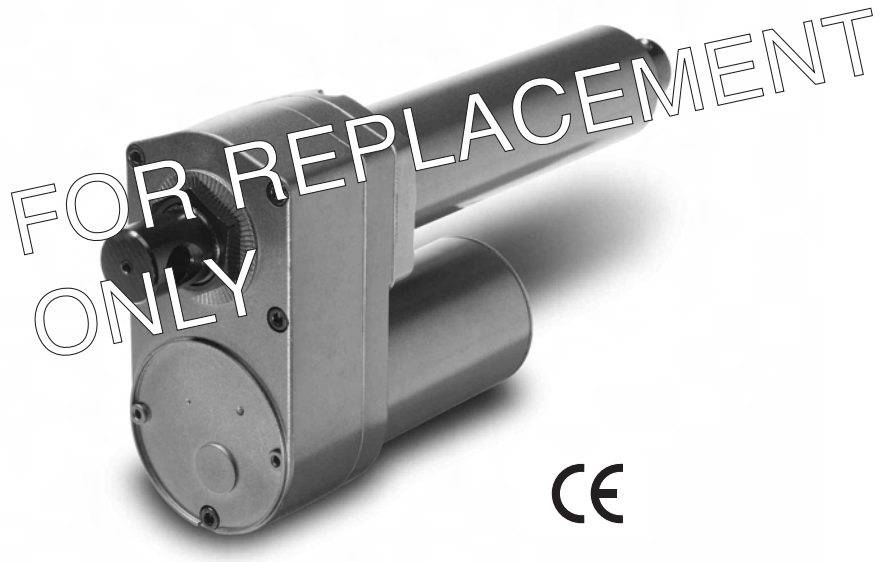
A-Track 10

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

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

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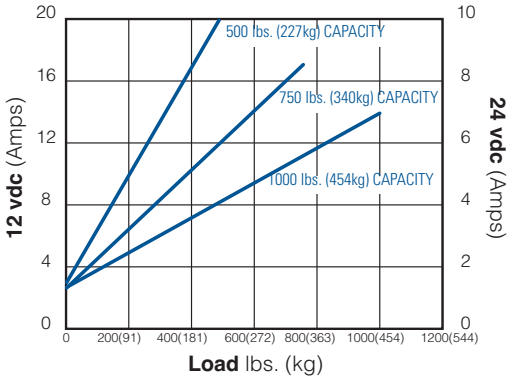
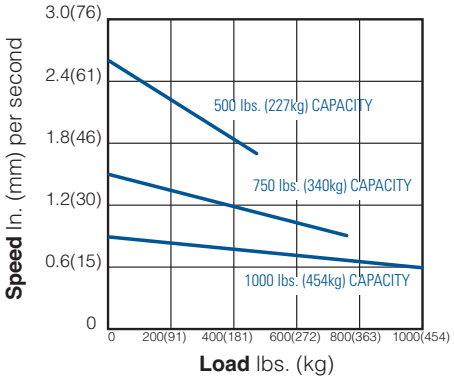
Performance Curves

Current vs Load



Speed vs Load



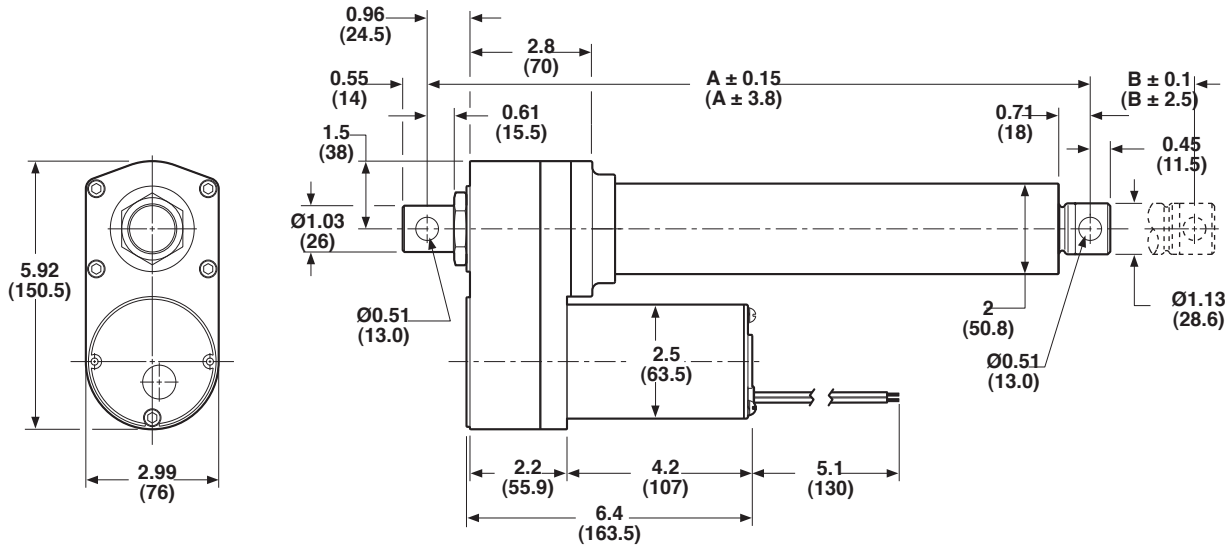
Dimensions

With Limit Switches

A-Track 10		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
	Stroke	**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		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
	Stroke	**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



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Notes

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Notes

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General Project Specifications

Mail or Fax to:

Warner Linear
Application Engineering
6593 Revlon 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.

Side Load _____ kg _____ 0.00 lbs.

Full Load Speed (min): _____ mm/s _____ 0.00 inches/s

Full Load Speed (max): _____ mm/s _____ 0.00 inches/s

Stroke: _____ mm _____ 0 inches

Life: _____ mm _____ 0 inches

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

Environment _____

Conditions:

Corrosives/Salt _____

Oil Splash _____

Moisture _____

Operating Temperature:

_____C Min _____32.0 F (0ºC)

_____C Max_____32.0 F (0ºC)

Duty Cycle (for one full extend + retract)

_____ Time On (Time on +Time off)

_____Cycles per day

Mounting Position _____

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 _____

Gearbox Mount _____

_____

_____

Connector Type _____

Mating Connector Required _____

Input Voltage Type _____

Input Voltage _____

Control Needed _____

If yes, which control _____

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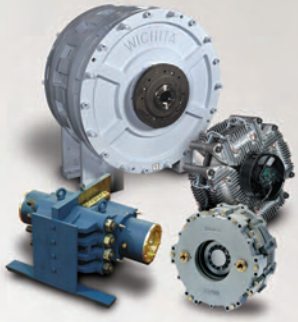
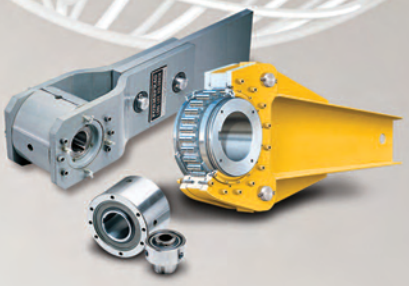
Electromagnetic Clutches and Brakes

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

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Nuttall Gear
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Bauer Gear Motor

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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

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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
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Universal Joints, Drive Shafts, Mill Gear Couplings
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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
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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
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1-262-547-3357

Gearing

Boston Gear
Enclosed and Open Gearing, Electrical and Mechanical P.T. Components
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Geared Motors
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Nuttall Gear and Delroyd Worm Gear
Worm Gear and Helical Speed Reducers
Niagara Falls, NY - USA
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Formsprag Clutch
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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
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TB Wood's
Belted Drives
Chambersburg, PA - USA
1-888-829-6637 – Press #5
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Engineered Bearing Assemblies
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+33 (0) 2 41 21 24 24
Fax: +33 (0) 2 41 21 24 70

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