Electric Cylinders

Roller Screw and Ball Screw Technology
Why Choose Royal

Royal actuators have been used in heavy duty applications in the resource industry since 1960. Our new E-Series actuators incorporate all of our proven features to provide a long life, heavy duty, and dependable solution that will exceed your expectations.

Why Choose an Electric Actuator

Electric actuators offer a number of performance benefits compared to hydraulic & pneumatic actuators:

- Higher positional accuracy
- Direct control of the actuator without external influences – each actuator is independently controlled
- Eliminates fluid leaks – no line losses or environmental damage
- High energy efficiency – energy is only consumed during operation, not when idle
- Very High Stiffness – no bounce or "give" during operation
- Low maintenance requirements
- Less Noise for Quieter Operation

Roller Screw or Ball Screw?

Our Roller Screw and Ball Screw actuators share the same advantages listed above with the only differences being the screw type and the load characteristics of that screw. Depending on your application, Royal will help you to determine which style is right for you.

**Ball Screw:**

+/- 23μm/300mm lead accuracy
23,000 lbs max thrust loads

- Lighter Loads
- Long Life
- Less Precision
- Lower Cost

**Roller Screw:**

+/- 23 μm/300mm lead accuracy
70,000 lbs max thrust loads

- High Loads
- Longer Life
- Higher Speeds
- Repeatable Precision
The *Royal* Advantage

**HEAVY DUTY CONSTRUCTION**

All Steel Construction
- Designed around our proven hydraulic cylinder line

Industrial Mounts
- Trunnion mounts come with wearable pins
- Plate mounts oversized for more support
- Custom mounts available

Solid, One Piece Output Shaft
- One piece design allows for maximum strength and flawless finish
- Strongest shaft on the market

**HIGH QUALITY MATERIALS**

Nitrided Piston Rods
- Higher Corrosion Resistance
- Better Wear ability
- Resists Impacts better than chrome
- Increase life of seals and wipers
**IMPACT PROTECTION**

**Designed for high impact forces**

**Heavy Duty Internal Bumpers**
- Reduce unintended impact on the expensive internal components

**INDUSTRIAL ADVANTAGES**

**Durable Wipers and Scrapers**
- Heavy duty rod wipers or optional solid brass scrapers protect the internals from damage in the toughest of applications

**Dual Gland Wear Strips**
- Wear Strips eliminates gland bushing wear leading to longer life

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**Selection**

We can work with you to custom design a cylinder for your application

- Any Stroke
- Any Mounting Style
## Model Specifications

<table>
<thead>
<tr>
<th>Base Model No.</th>
<th>Housing Bore Size (in)</th>
<th>Screw Dia. (mm)</th>
<th>Screw Lead (mm)</th>
<th>Stroke (in)</th>
<th>Max Linear Screw Speed (in/sec)</th>
<th>Screw Dynamic Load Ratings* (lbf)</th>
<th>Max Screw Static Force (lbf)</th>
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### E32 Estimated Life Time Capacity

![Graph showing E32 Estimated Life Time Capacity](image)

- **E32 5mm**
- **E32 12mm**
- **E32 30mm**

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1.877.637.6925

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# E50 Model

## Model Specifications

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<th>Housing Bore Size (in)</th>
<th>Screw Diameter (mm)</th>
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## E50 Estimated Life Time Capacity

![E50 Estimated Life Time Capacity Graph](image)

- E50 12mm
- E50 30mm

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Applications

Royal Electric E-series cylinder was designed originally to solve the high demands of the veneer and plywood productions industry. With our experience in designing durable cylinders we set out and developed the toughest electric cylinder on the world market today.

Working with Altec Integrated Technology, who designs and builds the machinery and systems controls for the veneer industry, we introduced our cylinders in the toughest application imaginable, a Veneer Charger and Lathe Carriage.

To date in this application:

- Trusted in over 15 different Mills in North America
- 125 Cylinders Engineered and Manufactured
- Successful running hours and increased reliability
Application Specification Worksheet

Fill in below data as best you can.
Not all information is required, contact us for questions

☐ Horizontal

☐ Vertical

☐ Angle

MOUNTING STYLE

☐ Clevis  ☐ Foot  ☐ Rod End Sq. Flange  ☐ Rod End Rect. Flange

☐ Side Tapped  ☐ Trunnion Head  ☐ Mid-Trunnion Xl=_____  ☐ Other: ________

LIFE PROFILE

Number of Cycles: ________________ Use hours per day: ________ Days per week ________

☐ per minute  ☐ per hour

MOVEMENT AND LOADS

EXTEND

Load ________________ ☐ lbs ☐ kg

Travel ________________ ☐ inches ☐ mm

Time ________________ secs

Max Speed ________________ ☐ in/secs ☐ mm/sec

RETRACTED

Load ________________ ☐ lbs ☐ kg

Travel ________________ ☐ inches ☐ mm

Time ________________ secs

Max Speed ________________ ☐ in/secs ☐ mm/sec

Additional Information:

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Motor Mounting Orientation

Parallel

Inline
Mounting Styles

3.25 inch Bore Rod End Sq. Flange

3.25 inch Bore Rod Mid Trunnion
Mounting Styles

3.25 inch Bore Rear Clevis
Mounting Styles

5 inch Bore Rod Rear Clevis

5 inch Bore Rod Head Trunnion
Mounting Styles

5 inch Bore Rod End Sq. Flange

5 inch Bore Mid Trunnion
How to Order

<table>
<thead>
<tr>
<th>Base Unit</th>
<th>Options</th>
<th>Drive Configurations</th>
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<tbody>
<tr>
<td>E</td>
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- **Bore**: 3.25" (32), 5" (50)
- **Mounting Style**: Blind End Clevis (C), Foot Mount (F), Rod End Rect Flange (R), Rod End Sq. Flange (RS), Side Tapped Heads (S), Mid Trunnion (T)
- **Stroke**: 6 inch (6), 12 inch (12), 18 inch (18), 24 inch (24), 36 inch (36), Custom (BLANK)
- **Rod Material**: Nitro Steel (A), Induction Hardened (C)
- **Rod Thread Options**: Standard Male (A), Oversized Male (B), Female Thread (D), Male Metric (M), Female Metric (F), Custom (X)
- **Screw Type**: Options (BLANK)
- **Screw Lead**: 05 (5 mm), 10 (10 mm), 12 (12 mm), 20 (20 mm), 30 (30 mm), 36 (36 mm), 40 (40 mm)
- **Motor Conf.**: 00 (n/a), 10 (1:1), 15 (1.5:1), 20 (2:1)
- **Gear Reduction**: Inline direct Drive (I), Parallel Drive (U)

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Email: Sales@royalcylinders.com