Helac product lines meet your individual needs

1. L-Series LoadBear
   Offers integral bearings to carry heavy axial and side loads. Available with large diameter shaft flange with drilled and tapped bolt circle.

2. T-Series TongBear
   Offers a thru-shaft configuration for larger applications, available with split output shafts.

3. Custom designs
   Over 50 percent of Helac’s rotary actuators for OEMs are customized to meet our customers’ application requirements.

4. Construction equipment attachments
   Helac PowerTilt® and PowerGrip® products increase the utilization of backhoes and excavators.

Helac’s Quick Reference Guide

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<tr>
<th>Design Features</th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>L10 Series</td>
<td>L20 Series</td>
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<tr>
<td>Standard Setup</td>
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<tr>
<td>Machine Size</td>
<td>From 2t to 25t</td>
<td>From 3t to 25t</td>
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<tr>
<td>Torque Range</td>
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<td>170,000-220,000</td>
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<tr>
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<td>Bearing Capacity</td>
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<td>Standard Rotation</td>
<td>180</td>
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<tr>
<td>Shock Resistance</td>
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</tr>
</tbody>
</table>

To learn more about Helac Corporation:

In the U.S. & Canada:
- Helac PowerTilt® and PowerGrip® products increase the utilization of backhoes and excavators.

Our helical rotary actuator in motion

Operating Technology

Helac actuators are designed to replace multiple components and function as a rotating drive, mounting bracket and bearing, all-in-one.

Helac’s innovative, sliding-spline operation technology converts linear piston motion into powerful shaft rotation. Each actuator is composed of a housing and two moving parts — the central shaft and piston. Helical spline teeth on the shaft engage matching teeth on the piston’s inside diameter. A second set of helical splines on the piston’s outside diameter mesh with the gear in the housing.

STARTING POSITION

The piston is completely bottomed out. Bars indicate starting positions of piston and shaft. Arrows indicate directions they will rotate. The housing with integral gear remains stationary.

ENDING POSITION

When hydraulic pressure is applied to the piston, it moves axially, while the helical gearing causes the piston and shaft to rotate simultaneously. Applying pressure to the opposite port will return the piston and shaft to their original starting positions.

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<tr>
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<tr>
<td>Internal Leakage</td>
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<td>None</td>
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<tr>
<td>Standard Rotation</td>
<td>180</td>
<td>180</td>
</tr>
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<td>High</td>
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Helac product lines meet your individual needs

1. **L-Series Loadbear**
   Offers integral bearings to carry heavy axial and side loads. Available with large diameter shaft flange with drilled and tapped bolt circle.

2. **T-Series Tension**
   Offers a thru-shaft configuration for larger applications. Available with splined output shafts.

3. Custom designs
   Over 50 percent of Helac’s rotary actuators for OEMs are customized to meet our customers’ application requirements.

4. Construction equipment attachments
   Helac PowerTilt® and PowerGrip® products increase the utilization of backhoes and excavators.

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<td>in-lb</td>
<td>lb</td>
</tr>
<tr>
<td>in</td>
<td>lb</td>
<td>lb</td>
</tr>
<tr>
<td>in</td>
<td>ft</td>
<td>ft</td>
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<tr>
<td>Pressure Rating</td>
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<td>bar</td>
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<tr>
<td>Bearing Capacity</td>
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<td>High</td>
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<tr>
<td>Internal Leakage</td>
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<td>Backlash</td>
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<td>180, 360</td>
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<td>Shock Resistance</td>
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<tr>
<td>Standard Tolerances</td>
<td>10, 30, 50</td>
<td>10, 30, 50</td>
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Operating Technology

Helac actuators are designed to replace multiple components and function as a rotating device, mounting bracket and bearing, all-in-one.

Helac’s innovative, sliding-spline operation technology converts linear piston motion into powerful shaft rotation. Each actuator is composed of a housing and two moving parts — the central shaft and piston. Helical spline teeth on the shaft engage matching teeth on the piston’s inside diameter. A second set of helical splines on the piston’s outside diameter mesh with the gear in the housing.

---

Our helical rotary actuator in motion

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The piston is completely bottomed out. Bars indicate starting positions of piston and shaft and arrows indicate directions they will rotate. The housing with integral gear remains stationary.

**ENDING POSITION**

When hydraulic pressure is applied to the piston, it moves axially, while the helical gearing causes the piston and shaft to rotate simultaneously. Applying pressure to the opposite port will return the piston and shaft to their original starting positions.

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Helical, hydraulic rotary actuators

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To learn more about Helac Corporation:

- **In the U.S. & Canada:**
  - Rotary actuators: +1 800 327 2589
  - Construction attachments: +1 800 797 8458

- **Worldwide:**
  - +1 360 825 1601

---

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Enumclaw, WA 98022 USA

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Fax: +1 360 825 1603
Email: actuators@helac.com, attachments@helac.com
Web: www.helac.com

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We created the first load-carrying, helical rotary actuator. Today, we’re still leading the way.

An inside look at how our helical actuator features set us apart

Drift Free Positioning
- Zero Internal Leakage
- Smooth Operation
- No External Brake Required

Ultra Compact
- High Power Density
- Fits in Tight Spaces

Streamlined Design
- Eliminates Linkages and Bearings
- Reduced Bill of Materials

Durable
- Suitable for Harsh Environments
- Moving Parts Enclosed

Countless ways to improve your machine designs

TOP INDUSTRIES SERVED
- Agriculture
- Construction
- Energy
- Marine
- Material handling
- Military
- Mining
- Truck/Trailer

BIG REASONS TO PARTNER WITH HELAC CORPORATION

Innovation
- Over 50 U.S. and International patents
- First helical, load-bearing product line available to OEMs
- First helical rotary actuator used for lifting buckets in off-road construction attachments

High Quality Solutions
- Continuous quality and process improvements in all areas of our business
- Sophisticated, computerized technology used throughout our production process

On-time Customer Delivery
- Just-in-time (JIT) delivery
- Vendor managed inventory (VMI)

Responsive Service
- 24 hour turnaround on parts for common items
- Actuator refurbishment service

FUTURE MANUFACTURING CAPABILITIES AT HELAC CORPORATION

POWERFUL
- High Torque
- High Bearing Capacity

DRIFT FREE
- Positioning
- No Internal Leakage
- Smooth Operation
- No External Brake Required

BACKDRIVES IN OVERLOAD CONDITIONS
- Hydraulic Fuse
- Prevents Mechanical Damage

STREAMLINED DESIGN
- Eliminates Linkages and Bearings
- Reduced Bill of Materials

DURABLE
- Suitable for Harsh Environments
- Moving Parts Enclosed

ULTRA COMPACT
- High Power Density
- Fits in Tight Spaces

Mannual first production rotary actuator

An inside look at how our helical actuator features set us apart

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Big reasons to partner with Helac Corporation

**Innovation**
- Over 50 U.S. and International patents
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Countless ways to improve your machine designs

**TOP INDUSTRIES SERVED**

- Agriculture
- Construction
- Energy
- Marine
- Material handling
- Military
- Mining
- Truck/Trailer

1968
- Founded as custom fabrication and machine shop

1974
- Manufactured first production rotary actuator

1982
- Turned focus exclusively to helical rotary actuators and changed company name to Helac

1983
- Moved to a larger facility and expands the company

1985
- Moved into new European market

1989
- Shipped 50,000 actuator

1990
- Expanded into the Asian market

2003
- Obtained 500th patent and continues to be a leader in technology

2005
- 500,000th actuator shipped

Helac Corporation's success began in the early 1980s when we focused our business solely on manufacturing helical, hydraulic rotary actuators. Our reputation and business grew rapidly because of the unique combination of features offered — high load-bearing capacity and torque output, shock resistance with zero leakage, and compact configurations. Today, over 1,000 OEM customers around the world rely on Helac to move, support and position rotary loads.
We created the first load-carrying, helical rotary actuator. Today, we’re still leading the way.

An inside look at how our helical actuator features set us apart

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<td>in-lb</td>
<td>psi</td>
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<td>1,700-4,500-25,000</td>
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To learn more about Helac Corporation:
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Email: actuators@helac.com attachments@helac.com Web: www.helac.com

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