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.

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’s innovative, slide-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. Helac’s enclosure design technology increases the utilization of backhoes and excavators.

Helac’s Quick Reference Guide

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Our helical rotary actuator in motion

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, slide-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. Helac’s slide-spline operation technology increases the utilization of backhoes and excavators.

Starting Position
The piston is completely bottomed out, then incite actuator starting positions as specified with the manufacturer’s design directions are met. 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.

Helical, hydraulic rotary actuators

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

Helac Corporation
225 Batterfly Avenue
 Enumclaw, WA 98022 USA

Phone: +1 360 825 1601
Fax: +1 360 825 1003
Email: actuators@helac.com
Website: www.helac.com

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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. **L-Series TurnBear**
   - Offers a thru-shaft configuration for torque 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’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. Helac’s rotary actuator uses the shaft’s outside diameter as the bearing’s inside diameter with the gear in the housing.

### Helac’s Quick Reference Guide

#### Design Features
- **Helical Rotary Actuators**
- **Construction Equipment Attachments**

#### Standard Configurations
- **Machine Size**
  - From 2t to 21t

#### Torque Range
- **in-lb**
  - 1,700—4,500—5,000—17,000—25,000—25,000—40,000—65,000
- **Nm**
  - 190—450—990—1,540—2,830—2,830—7,330—18,000

#### Pressure Rating
- **psi**
  - 3,000—3,000—3,000—3,000—3,000—3,000—3,000—3,000
- **bar**
  - 210—210—210—210—210—210—210—210

#### Bearing Capacity
- **High**
- **Low**

#### Internal Leakage
- **None**

#### Standard Rotations
- **180, 360**

#### Shock Resistance
- **High**

### 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. Helac’s rotary actuator uses the shaft’s outside diameter as the bearing’s inside diameter with the gear in the housing.

#### Starting Position
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#### 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.

### Helical, hydraulic rotary actuators

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**Helac Corporation**
- 225 Battersby Avenue
- Enumclaw, WA 98022 USA
- Phone: +1 360 825 1601
- Fax: +1 360 825 1603
- Email: actuators@helac.com
- Attachments@helac.com
- Web: www.helac.com

© 2014 Helac Corporation. All rights reserved. Specifications subject to change without notice.
We created the first load-carrying, helical rotary actuator. Today, we’re still leading the way.

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.

**FOUR big reasons to partner with Helac Corporation**

**Innovation**
- First helical, load-bearing product line available to OEMs
- First helical rotary actuator used for tilting buckets in aftermarket 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**
- Kanban product replenishment system
- Just-in-time (JIT) delivery
- Vendor managed inventory (VMI)

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

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

**Powerful**
- High Torque
- High Bearing Capacity

**Backdrives in Overload Conditions**
- Hydraulic Fuse
- Prevents Mechanical Damage

**Durable**
- Suitable for Harsh Environments
- Moving Parts Enclosed

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

**Ultra Compact**
- High Power Density
- Fits in Tight Spaces

**Countless ways to improve your machine designs**

**TOP INDUSTRIES SERVED**

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

**1968 1974 1982**
- Founded as custom fabrication and machine shop
- Manufactured first production rotary actuator
- Tuned focus exclusively to helical rotary actuators and changed company name to Helac

**1983 1985 1988**
- Moved to a larger facility and expanded the company
- Expanded into the European market
- Introduced the PowerTilt® for construction equipment

**1989 2007 2011**
- Shipped 10,000th actuator
- Introduced the T20 series actuator
- Shipped 500,000th actuator

**1974 2007**
- Moved to a larger facility and expanded the company
- Expanded into the European market
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**1982**
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**1983**
- Introduced the PowerTilt® for construction equipment
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**FOUR big reasons to partner with Helac Corporation**

- **Innovation**
  - First helical, load-bearing product line available to OEMs
  - First helical rotary actuator used for lifting buckets in after-market 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**
  - Kanban product replenishment system
  - Just-in-time (JIT) delivery
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- 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 on helical rotary actuators and changed company name to Helac

**1983**
- Moved to a larger facility and exports first company

**1985**
- Expanded into the European market

**1988**
- Introduced the PowerTilt® for construction equipment

**1989**
- Shipped 10,000th actuator

**2007**
- Introduced the T20 series actuator

**2011**
- Shipped 50,000th actuator
An inside look at how our helical actuator features set us apart

- Powerful
  - High Torque
  - High Bearing Capacity

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

- Backdrives in Overload Conditions
  - Hydraulic Fuse
  - Prevents Mechanical Damage

- Durable
  - Suitable for Harsh Environments
  - Moving Parts Enclosed

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

- Ultra Compact
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  - High Bearing Capacity

FOUR big reasons to partner with Helac Corporation

- Innovation
  - First helical, load-bearing product line available to OEMs
  - First helical rotary actuator used for lifting baskets in after-market 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
  - Kanban product replenishment system
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- Responsive Service
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Countless ways to improve your machine designs

TOP INDUSTRIES SERVED

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

Aerial Work Platforms
- Platforms, towers and joint sections

Mining Equipment
- Drill positioning, rail handling, shoveling, and loading

Refuse / Recycling Vehicles
- Arm adjustment and waste lifting

Construction Equipment
- Excavators, cranes, and specialty attachments

Agricultural Harvesters
- Boom positioning, head rotation, wheel steering

Paving and Curbing Equipment
- Arm articulation and Cart lifting

Sweepers / Scrubbers
- Brush positioning, steering, tipping and dumping

Forklifts
- Fork swing, specialized attachment

Powerful
- High Torque
- High Bearing Capacity

Drift Free Positioning
- Zero Internal Leakage
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Backdrives in Overload Conditions
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Helac product lines meet your individual needs

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

2. **5-Series TorqueBear**
   Offers a thru-shaft configuration for torque applications. Available with splined output shafts.

3. **Custom Designs**
   Over 30 percent of Helac’s rotary actuators for OEMs are customized to meet our customers’ application requirements.

4. **Construction Equipment Attachments**
   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**

**Operating Technology**

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

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**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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