



Oilgear Rotary Actuators – Frequently Asked Questions

1. What is an Oilgear rotary actuator, and how does it work?

Oilgear rotary actuators, including the SM Series Helical Hydraulic Rotary Actuators, are designed to convert hydraulic energy into rotary motion, delivering high torque with precise angular positioning. They use a helical gear mechanism inside a sealed housing, which allows for controlled, powerful rotation—typically up to 180°, with custom angles available. They also serve as a structural bearing, so the actuator can withstand the external loads besides just outputting torque.

2. What distinguishes Oilgear rotary actuators from other actuator types?

- **Integrated Functionality:** Oilgear actuators often combine the role of a rotating device, mounting structure, and bearing into one compact, rugged package.
- **High Torque & Reliability:** Designed for heavy-duty and mobile applications, they deliver high drive and holding torque even under tough conditions.
- **Durability:** Employ steel-on-steel or hard-seated construction for resistance to contamination and wear, ideal for demanding environments. Robust construction of components are designed for punishing mobile and industrial environments.

3. What are the main technical specifications for Oilgear rotary actuators?

- **Rotation Range:** Customizable, typically up to 180° per application.
- **Maximum Drive Torque:** Models such as the SM82 offer up to 8,200 in-lbs, with larger models exceeding 15,000 in-lbs.
- **Maximum Holding Torque:** Can reach up to 38,720 in-lbs.
- **Mounting:** Foot or custom mounting options are available.
- **Radial/Axial Load Capacity:** Radial capacities up to 9,230 lbs (4,187kg), Axial up to 2,200 lbs (998kg)
- **Porting:** ISO/SAE and custom port sizes.



4. What are the most common applications?

Oilgear rotary actuators are used in:

- Construction and mining equipment (boom rotation, bucket rotation)
- Material handling (man-baskets, cranes)
- Marine, offshore, and subsea operations (valves and hatches)
- Automotive assembly tooling (rotating fixtures/jigs)
- Municipal and utility vehicles (bucket rotation, boom swing)
- Agriculture (boom swing or rotation, wheel rotation/steering)

5. How do I select the correct actuator size and options?

Selection depends on required torque, rotational range, load capacity (axial, radial or a combination), and mounting constraints. Knowing your application's maximum moment and duty cycle is essential. Oilgear engineers can assist with sizing and CAD modeling for seamless integration.

6. What installation best practices should be followed?

- Ensure correct alignment with driven components.
- Understand the principles of mounting an actuator to a load
- Use proper mounting hardware and follow specified bolt torque.
- Ensure all connections and ports are clean before installation.
- Bleed the hydraulic system before initial operation.



7. What maintenance is required?

- Regularly inspect for hydraulic leaks, abnormal noise, or vibration.
- Check fluid cleanliness and maintain filtration to ISO standards.
- Inspect mounting bolts, connections, and seals for wear or damage.
- Oilgear offers product training and preventive maintenance services to maximize equipment life.
- Oilgear offers rebuild kits that include seals and bearings

8. How can I troubleshoot performance issues?

- Confirm fluid pressure and flow match actuator requirements.
- Inspect for contamination or air in the hydraulic lines.
- Verify actuator mounting and alignment.
- Consult Oilgear's detailed service documentation or request technical support.
- If counterbalance valves are selected, make sure they are the correct ratio for your application

9. Can Oilgear rotary actuators be customized?

Yes. Oilgear specializes in custom engineering, offering variations in torque, total rotation, porting, mounting, sensors and material selection as required for specific industry applications.

10. Where do I get technical documents or support?

- Manuals and installation guides are available on Oilgear's website.
- Contact Oilgear for model-specific support and technical advice.