



CASE STUDY



How EDS International Delivered High-Performance Actuator Solutions for a Leading Mobility Equipment Manufacturer

In the fast-paced world of mobility solutions, reliability and precision are non-negotiable. When a prominent U.S. manufacturer faced challenges with actuator performance, they needed a partner who could deliver not just a product, but a renewed sense of trust. Our company rose to the occasion, transforming a complex challenge into an opportunity to showcase engineering excellence, rigorous quality assurance, and unwavering client commitment. Over four years, we delivered a tailored actuator solution that met stringent standards, restored confidence, and laid the foundation for a lasting partnership.

Key Wins at a Glance

- **Exceeded Rigorous Standards:** Achieved IP66 rating and passed extensive environmental and durability tests.
- **Expanded Product Integration:** Enabled the client to adopt three additional actuators across their portfolio.
- **Earned Industry Recognition:** Awarded Supplier Excellence in 2015 for outstanding reliability and support.
- **Fostered Long-Term Growth:** Supplied five custom actuators, with three still in active production.



Meet the Client

Our client, a leading U.S. manufacturer of mobility solutions, specializes in automotive lift systems that enhance accessibility for individuals with mobility challenges. Their products operate in demanding outdoor environments, requiring components that are both durable and precise. The actuator, a critical component of their lift systems, needed to meet an IP66 rating for water and dust resistance, function flawlessly under extreme temperatures (140°F to -40°F), and withstand constant vibration. Past issues with a previous supplier had led to field failures, eroding trust and creating an urgent need for a reliable, high-performance solution.



A man in a wheelchair on a lift of a vehicle for people with disabilities

The Challenge

The client's requirements were exacting, driven by the need for a robust actuator that could:

- **Endure Rigorous Testing:** Complete 10,000 life cycles (5,000 with a 360 lb. load and 5,000 no-load) without failure.
- **Perform in Extreme Conditions:** Operate after exposure to high (140°F) and low (-40°F) temperatures in environmental chambers.
- **Withstand Vibration:** Function reliably during shaker table testing, simulating real-world automotive conditions.
- **Incorporate Custom Features:** Include a manual crank for operation during power outages and a water-resistant cap to protect the motor.

The overarching challenge was to deliver a product that not only met these technical specifications but also rebuilt the client's confidence in our ability to serve as a trusted partner for current and future projects.



Our Solution

We approached the project with a strategic, client-centric plan, leveraging engineering expertise and a commitment to quality:

- **Strategic Supplier Partnership:** We partnered with a reputable supplier known for superior manufacturing standards, ensuring a reliable foundation for the actuator's performance.
- **Proactive Pre-Testing:** To mitigate risks, we acquired the client's lift system and conducted internal life tests on multiple actuator samples. This allowed us to validate performance before presenting the solution to the client, streamlining the approval process.
- **Custom Engineering Innovations:** In collaboration with the supplier, we modified the actuator to include: (1) A redesigned DC motor rear to accommodate a manual crank, enabling lift operation during power failures. (2) A custom plastic cap to seal the motor shaft, ensuring compliance with the IP66 rating and protecting against water ingress.
- **Collaborative Development:** Our engineering team maintained constant communication with the client's engineers, facilitating rapid feedback loops and iterative improvements. We also coordinated with our supplier to conduct parallel testing, ensuring alignment across all parties.
- **Robust Quality Assurance:** During production, we implemented rigorous pre-shipment testing to maintain consistency. When a minor issue arose with the actuator shaft unscrewing from the ball nut, our supplier quickly identified the cause and implemented a fix. Later, when a noise issue emerged, we instituted 100% pre-shipment testing while the supplier resolved the root cause, ensuring uninterrupted delivery of high-quality units.

Results

The project delivered measurable and lasting outcomes:

1. **Industry Recognition:** In 2015, the client awarded us a Supplier Excellence Award, acknowledging our exceptional product quality and responsive support.
2. **Expanded Product Integration:** The actuator's success led the client to adopt three additional actuators for other product lines, broadening our impact within their portfolio.
3. **Cost and Operational Benefits:** Improved actuator reliability significantly reduced warranty claims, delivering cost savings and enhancing the client's operational efficiency.
4. **Sustained Partnership:** Over the years, we supplied five custom actuators, three of which remain in active production. This long-term collaboration has strengthened our relationship and positioned us as a trusted partner for future projects.
5. **Strategic Supplier Relationship:** Today, we continue to be a strategic supplier, providing parts from multiple countries of origin to support their broader production needs.



The client expressed high satisfaction with the actuator's performance and our collaborative approach. Post-project, we continued to provide support by arranging regular meetings to review quality and discuss upcoming opportunities. These efforts ensured that any issues were addressed promptly and that we remained aligned with the client's strategic goals. The Supplier Excellence Award and expanded business opportunities reflect the client's trust in our capabilities and commitment.

Lessons Learned

The project provided valuable insights that continue to shape our approach:

- **Close Collaboration is Key:** Regular communication with both the client and supplier ensures alignment and rapid issue resolution.
- **Proactive Testing Drives Success:** Conducting internal validation before client testing builds confidence and accelerates approvals.
- **Continuous Quality Monitoring:** Rigorous pre-shipment testing and supplier oversight are essential to maintaining product excellence.
- **Client-Centric Focus:** Anticipating and addressing client needs fosters trust and opens doors for future collaboration.

This project exemplifies our ability to transform challenges into opportunities through engineering excellence, strategic partnerships, and client-focused service. By delivering a high-performance actuator that met rigorous standards, we not only restored the client's confidence but also built a lasting partnership that continues to drive mutual success. Our commitment to quality, innovation, and collaboration positions us as a trusted leader in mobility solutions, ready to tackle the industry's toughest challenges.



Contact us today to discuss your procurement needs and explore customized sourcing solutions.



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