



TEXTRON

Mustang Advanced Engineering (MAE), a leading manufacturer of advanced dynamometers and custom testing systems, was commissioned to design, build, and install a state-of-the-art End-of-Line (EOL) test stand for Textron's next-generation low-speed, high-torque aircraft tug vehicles.

OVERVIEW

Textron GSE, a division of Textron Inc., a globally recognized multi-industry company providing innovative solutions across aviation, defense, and industrial markets, is a leading manufacturer of ground support equipment. Textron GSE produces conventional and towbarless aircraft pushbacks, baggage tractors, tow tractors, belt loaders, one-man and two-man deicers, ground power units, air starts, and air conditioning units. These products are essential for reliable, efficient ground operations at airports worldwide.

For its specialized aircraft tug vehicles, Textron required a highly robust testing solution that could validate overall performance

SNAPSHOT

Project: End-of-Line Test Stand for Aircraft Tug Vehicles
Customer: Textron GSE
Industry: Specialty Vehicles
Where: Cartersville, Georgia

under real-world conditions, while integrating seamlessly into a production-line environment.

SOLUTION

MAE collaborated closely with Textron's engineering team to define performance targets and operational requirements. The result was a custom designed EOL test stand featuring:

- **Custom Dynamometer System**

Capable of accurately replicating low-speed, high-torque load profiles that simulate demanding operational conditions for aircraft tugs.

- **Integrated Measurement & Control**

Real-time data acquisition of torque, speed, temperature, vibration, and system response.

- **Automated Test Sequences**

Pre-programmed routines to streamline repeatability and reduce operator intervention.

- **Flexible Architecture**

Scalable design that allows adaptation for future vehicle models and expanded test protocols.

- **Production Line Durability**

Built to withstand continuous, high-cycle operation within a factory environment.



“Our goal was to provide a robust, flexible testing solution tailored to Textron’s demanding workload...”

*- David Ganzhorn,
Vice President of Sales,
MAE*



RESULTS

The implementation of the EOL test stand provides Textron with:

- **Increased Reliability**
Every unit is validated under simulated operational stresses.
- **Improved Efficiency**
Automated test cycles reduce testing time and operator variability.
- **Enhanced Data Quality**
Comprehensive performance data supports both immediate quality checks and long-term product development.
- **Mission Assurance**
Verifies that ground support equipment can perform reliably in critical aviation environments.

“Our goal was to deliver a test system that not only verified end-of-line functionality but also provided Textron with actionable data to improve quality assurance and product reliability,” said David Ganzhorn, Vice President of Sales for Mustang Advanced Engineering. “The dynamometer system offers Textron a powerful tool for ensuring every aircraft tug vehicle meets rigorous performance standards before entering service.”

CONCLUSION

Through its expertise in precision-engineered testing systems, Mustang Advanced Engineering delivered a custom EOL test stand that meets Textron’s stringent requirements for accuracy, durability, and scalability. This collaboration demonstrates MAE’s ability to design and implement advanced testing solutions that enable manufacturers to ensure product safety, performance, and long-term reliability.



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About MAE

Mustang Advanced Engineering is a leading supplier of advanced, custom engineered testing and measurement systems. Located in Twinsburg, OH, MAE delivers world-class testing solutions, custom design support, and technical assistance, backed by a dedicated factory service team, making MAE a trusted source of expertise for the global industrial market. Visit MustangAE.com for more information. Follow them on Facebook, X (Twitter), LinkedIn, and Instagram.

