

PROJECT SPOTLIGHT

Lightweight Tow Dynamometer for Kubota UTVs



Kubota Tractor Corporation, a leader in agricultural and utility vehicle manufacturing based out of Grapevine, Texas, partnered with Mustang Advanced Engineering (MAE) to enhance the research and development capabilities of their consumer-level utility terrain vehicles (UTVs) and powersport recreational vehicles. The primary goal was to develop a high-performance, lightweight tow dynamometer tailored for comprehensive R&D testing.

CHALLENGE:

Kubota needed a portable and efficient dynamometer that could accurately simulate real-world towing loads for UTVs and recreational vehicles, without the burden of excessive size or weight. The system needed to maintain high accuracy, durability, and mobility to be integrated effectively into their testing environment.

SOLUTION

MAE engineered the model number: MDT-8KN-UL, an extremely lightweight tow dynamometer, specifically designed to meet the performance and portability requirements of Kubota's engineering team. Key design elements included:

- Reduced weight frame and housing, a full 1,000 lbs. lighter than MAE's standard model MDT-8KN Tow Dyno
- Minimum Speed: 1.0 MPH (1.5KPH); Maximum Speed: 60 MPH (100 KPH)
- Provides grade simulation up to 80% for a vehicle weighing 4,200 lbs. (1,900 kg)
- Data acquisition systems, allowing engineers to capture and analyze vehicle performance under load in real time

SNAPSHOT

Project: Extreme lightweight tow dynamometer for research and development of utility vehicles
Customer: Kubota Tractor Corporation
Industry: Agricultural, UTV and Powersport Vehicles
Where: Grapevine, Texas



Available Control Modes:

- Manual Control
- Constant Force (Draw Bar)
- Constant Speed
- Constant Power
- Vehicle Simulation (A, Bv, Cv2, weight, grade)

Another key feature with MAE's MDT-8KN-UL tow dyno is script testing, which allows the operator to create unique test cycles based on time or distance. The operator can easily configure the software to change between control modes while the tow dynamometer is executing the test cycle.

RESULTS

The delivered tow dynamometer significantly improved Kubota's R&D capabilities by:

- Enhancing the precision of performance testing for UTVs and recreational vehicles
- Allowing realistic, field-simulated testing in a controlled environment
- Providing a cost-effective and scalable solution for future product development

CONCLUSION

Through innovation and collaboration, Mustang Advanced Engineering delivered a tailored testing solution that empowers Kubota to continue leading in the development of high-performance, consumer-ready UTVs. This lightweight tow dynamometer stands as a testament to MAE's commitment to engineering excellence and client-focused design.

"...MAE's experienced and innovative background in producing a wide range of tow dynamometers makes us the ideal supplier to meet Kubota's specific and challenging application needs."

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



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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, Twitter, LinkedIn, and Instagram.

