



**Modular Tire Measurement Systems,
A holistic approach to meeting manufacturers tire testing needs.**

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Micro-Poise Measurement Systems, LLC has a longstanding reputation for supplying state of the art final finish measurement equipment to global tire manufacturers. Manufacturers of passenger and light truck tires demand that such equipment met rigorous machine performance standards.

Tire manufacturers have invested in individual machines that measure tire uniformity, dynamic balance and geometry. Tire manufacturing engineers have selected final finish measurement equipment based on measurement repeatability and accuracy, individual cycle time performance and overall ruggedness, defined as being able to perform such precise tests while surviving a tough environment.

Today, tire manufacturers seek more sophisticated solutions to achieving final finish efficiencies, meeting their customers' requirements, while minimizing their manufacturing costs. To meet this need, Micro-Poise developed its Modular Tire Measurement System (MTMS), taking a holistic approach to overall final finish operations.

By design, MTMS optimizes the tire measurement process. As a total system, MTMS is a machine configuration combining ASTEC PLUS™ tire uniformity measurement, AkroDYNE™ dynamic balance measurement and TGIS-SL® tire geometry inspection into a single, cohesive tire inspection process.

The Modular Tire Measurement System minimizes tire testing cycle time and manpower costs. With this in-line system, floor space is efficiently utilized. Downtime is minimized.

In its most efficient configuration, the system consists of a tire entrance station with bead lubricator, an ASTEC PLUS™ Tire Evaluation Center, access drop and dynamic balance entrance conveyor, an AkroDYNE™ Dynamic Balancer Test Station with TGIS®



geometry system integration into the AkroDYNE Test Station, followed by a combined tire uniformity and balance Mark Station and Tire Sorter.

Since the system is modular, various configurations are available depending on customer-specific requirements. Based on standard performance criteria and normal marking procedures, the total system cycle time for the above MTMS configuration can be as low as 21 seconds.

Some of the key designed-in features when taking a systems approach to final finish testing include:

- 1) Tire bead lubrication performed only once at the entrance station. Since the in-line system is quick and efficient, the immediate benefit is that there is no need to lubricate a second time between individual measurements. The manufacturer saves a per-tire lubrication step and associated lubricant.
- 2) ASTEC PLUS measurement cycles as low as 19.6 seconds. This is a key development, enabling the overall MTMS to maximize its tire throughput. The key benefit is tires tested per shift per line. This translates to reduced cost on a per tire tested basis.
- 3) Automatic tire transfer direct from the ASTEC PLUS to the AkroDYNE handler. This in-line transfer is the most efficient use of floor space and eliminates alternate conveyors or labor required to transfer tires being tested.
- 4) AkroDYNE measurement cycles as low as 18 seconds. This capability also maximizes throughput.
- 5) Geometry inspection incorporated in the dynamic balancer, not at the uniformity machinery. In this way, geometry inspection is not additive to system cycle time. This is a key production saving step to manufacturers who currently test geometry on a separate station or off-line apparatus.
- 6) Only one marker station is required for the overall system. Uniformity grade results can be passed to the dynamic balancer for UF and Balance marking in a single step. The benefits include reduced downtime (only one marker to maintain), while maximizing tire throughput.
- 7) Single tire sorter at the end of the system can then transfer tires based on a complete set of grading information.



A full scale final finish line, such as MTMS, sacrifices nothing in the way of performance or flexibility. To meet individual tire manufacturer needs:

- a) Auxiliary features such as bar code reading, added measurement values, manufacturing operations communication, tire spotting, and more are easily incorporated to an in-line system.
- b) Additional modules can be introduced. A manufacturer might require additional lube stations, marker stations, or entrance centering conveyors to meet unique manufacturing or testing requirements.
- c) Systems maintenance and individual machinery functions, such as tooling changeovers remain quick and easy. At no time should an individual machine measurement or performance be reduced as part of an overall MTMS solution.

By definition, a holistic system is a solution created from various components and, as a result, the total system outperforms the individual sum of its parts. Micro-Poise's Modular Tire Measurement System is such a solution for tire manufacturers' final finish operations.

Micro-Poise Measurement Systems, LLC is the leading global provider of measurement and inspection systems and aftermarket services for the tire and automotive industry. With more than 90 years in business, Micro-Poise continues to provide a complete line of uniformity machines, dynamic balancers and geometry measurement systems. Micro-Poise is the only company that provides its customers with its Modular Tire Measurement System, combining proven performance and cycle time efficiency in a complete solution.

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