

MicroPoise[®]
MEASUREMENT SYSTEMS

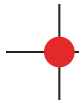
AMETEK[®]

ASTE[®] PLUS

Passenger and Light Truck Tire Uniformity Measurement

The ASTEC[®] PLUS is a uniformity measurement system created and manufactured by Micro-Poise[®] Measurement Systems, LLC. This ergonomically friendly, technically unique and patented line of machinery is specially designed to assure tire quality testing.





Features and Benefits

Cycle time, measured as the average time required to load a tire, measure its uniformity characteristics and release the tire, is a critical component of final finish operations. Micro-Poise® provides the tire manufacturing industry with the fastest system commercially available.

- Speed of measurement translates directly into more tires tested per shift and per test machine. This reduces the overall capital investment for multiple finishing lines, improves manufacturing scheduling flexibility and reduces maintenance costs.

Patented technology of the ASTEC® PLUS allows the machinery and associated measurement system to achieve the industry's best uniformity measurement for manufacturers of radial tires.

- Tight system repeatability and accuracy specifications prevent marginal tires from being graded improperly. The net result is increased yield for good tires and reduced customer complaints.

Size and Range Specifications	Metric	US Customary
Outside Diameter (max/min)	1020/508 mm	40/20 inch
Bead Diameter (max/min)		28/12 inch*
Bead Width (max/min)	356/76 mm	14/3 inch
Bead Width Adjustment Range	127 mm	5 inch
Loaded Radius (min)	216 mm	8.5 inch
Inflation Pressure (max)	550 kPa	80 psi*
Machine Loadwheel Coating Width	393 mm	15.5 inch
Tire Loading (max)	1800 daN	4000 lb
Tire Weight (max)	55 kg	120 lb

*Availability limited to specific inflation limits and dimensions. Contact Micro-Poise® for maximum bead diameters between 26-30".

Force Measurement Range	Metric	US Customary
Radial Force Variation	111 daN	250 lb
Lateral Force Variation	56 daN	125 lb
Conicity	±56 daN	±125lb
Plysteer	±56 daN	±125 lb

Runout Measurement Range	Metric	US Customary
Radial Runout	5 mm	0.2 inch
Lateral Runout	5 mm	0.2 inch



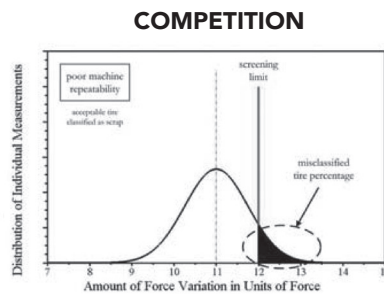
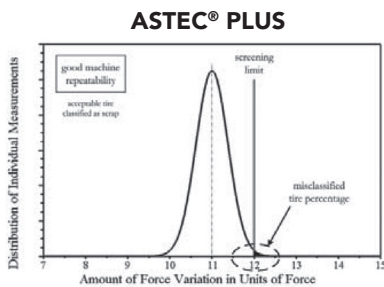
Optional Tire Geometry Inspection System (TGIS-SL®) with "Sheet of Light" Technology



Handler & Luber with automatic adjusting tire centering



Convenient pendant station with simple, intuitive display



Features and Benefits continued

Open Frame Design, incorporated into the ASTEC® PLUS, is another patented feature unique to Micro-Poise® uniformity machinery.

- This user-friendly feature gives operators and maintenance personnel easy access to all critical parts of the machinery, while also maintaining strict safety standards.

Manufacturing Options, such as the TGIS-SL® (Tire Geometry Inspection System), center and shoulder grinders, AkroMARK™ hot stamp marking and sorters, have all been incorporated into ASTEC® PLUS.

- All options have been “designed in” as part of our overall Modular Tire Measurement System (MTMS). This minimizes the work required to integrate the various machine platforms during initial installation and reduces the overall maintenance training required for disparate systems.

These features make the ASTEC® PLUS the fastest, most precise and user-friendly system commercially available for the tire industry.

Machine Performance Specifications

Cycle Time	
Single Direction Test	16.1 seconds
Dual Direction Test	19.6 seconds
TGIS-SL® 2 Bar	Does not add to cycle
TGIS-SL® 4 Bar Pre-Cycle	Adds estimated 5 seconds to cycle
Marking at Exit Station	Does not add to cycle

Cycle time is based on a P215/60R16. Other sizes may vary. Cycle time based on Test Procedures/Conditions using Micro-Poise®'s factory installed TIGRE™ program.

System Repeatability	Metric	US Customary
Load Force Variation (σ avg)	1.78 daN	4 lb
Inflation Pressure (σ avg)	0.69 kPa	0.1 psi

High Point Accuracy			
RF1H Value - Metric	Range	RF1H Value - US	Range
RF1H > 4.4 daN	$\pm 5.5^\circ$	RF1H > 9.9 lb	$\pm 5.5^\circ$
RF1H \leq 4.4 daN but \geq 2.2 daN	$\pm 11^\circ$	RF1H \leq 9.9 lb but \geq 4.9 lb	$\pm 11^\circ$

Measurement Repeatability	Metric	US Customary
Radial Force Variation (σ avg)	0.169 daN	0.38 lb
Lateral Force Variation (σ avg)	0.133 daN	0.30 lb
Conicity (σ avg)	0.133 daN	0.30 lb
Radial Runout (σ avg)	0.02 mm	0.0008 inch
Lateral Runout (σ avg)	0.05 mm	0.002 inch

All specifications are at rated cycle times using master tires



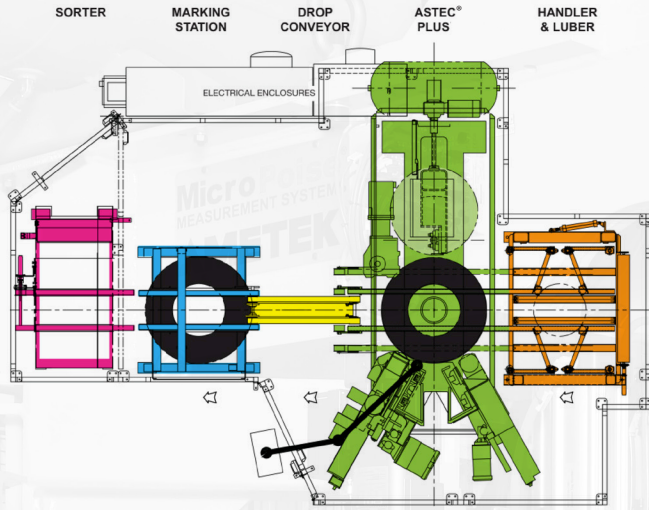
Loadwheel and tooling is easily accessible for tooling change and maintenance



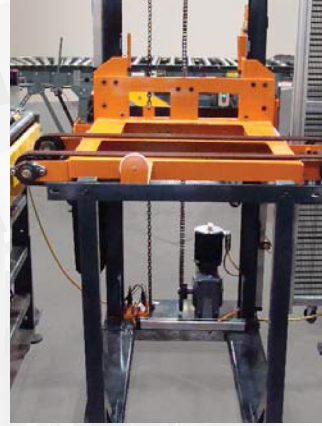
Optional Center Grinder (above) and Shoulder Grinders (below) provide for tire optimization and higher yield



Layout Options



Layout showing base ASTEC® PLUS with entrance conveyor. This illustration also shows the exit drop conveyor for ease-of-access during maintenance, optional remote marking station and optional sorter.



Sorter Station separates tires according to grade and is programmable for up to six sorting grades and heights.



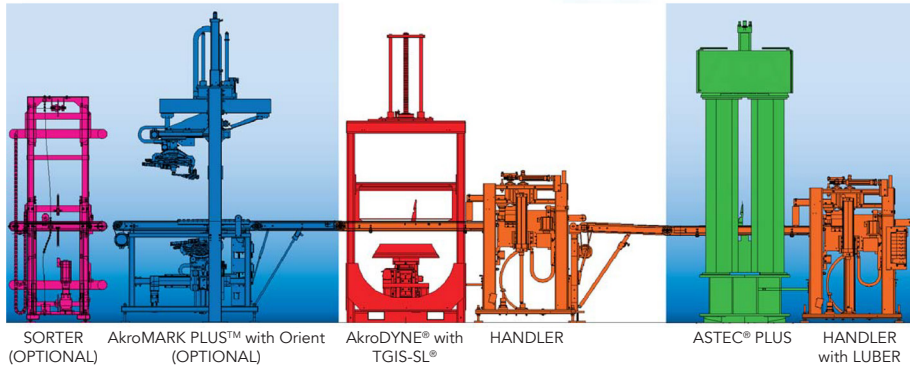
Optional AkroMARK® PLUS with Orient station

Modular Tire Measurement Systems

ASTEC® PLUS is a critical component of our Modular Tire Measurement Systems (MTMS), designed to optimize the tire measurement process for uniformity and dynamic balance measurements.

MTMS combines tire uniformity, dynamic balance measurement and tire geometry inspection into a single process. In its most efficient configuration, the total system cycle time is the fastest in the industry. In addition, each individual measurement station ensures the best measurement with no compromise in precision and accuracy.

Auxiliary features include manufacturing operations communications (Level II), barcode reading, angular referencing, marking and sorting.



When you have a company with 100 years of innovative work behind you, you have a measurement system that puts the leading edge of tire finishing technology in front of you. Micro-Poise®. Better by every measure.

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