AMETEK®

MicroPoise®
MEASUREMENT SYSTEMS

Grinding System Upgrade

For ASTEC® Tire Uniformity Machines

With the increased pressure to reduce costs during tire manufacturing, there is an ever increasing demand to improve efficiencies in all phases of the tire production process. Upgrading your ASTEC® uniformity machine with a grinding system will improve yields, reducing scrap rates while maintaining consistent quality.

When installed, the grinders are automatically adjusted to predetermined set points using tire codes. Tire codes are entered into the computer, or can be read directly from the tire using a tire code reader.

Features and Benefits

- **Improved final finish yields, reducing scrap rate and reducing manufacturing costs.**
- **Limited changeovers, increases machine uptime.**
- **Allows operation of mixed tire sizes. This provides the manufacturer with scheduling flexibility, increasing overall tire testing capacity.**
- **Automatic adjustment to tire code recipes eliminates operator variables, reducing waste.**
- **Efficient grind time increases total tested tire throughput.**
- **Improved grind appearance maintains customer satisfaction.**

Center Grinder Kit

The Center Grinder upgrade includes all equipment to reduce radial runout (RRO) or radial force variation (RFV) by grinding the tread face. This allows for rework of tires that fail force and runout grade limits, and reduces the number of tires that are scrapped or downgraded.

Reducing Radial Runout

Run out grind reduces radial runout and improves roundness. The basic grinder is positioned according to feedback by the RRO probe. Runout grinding uses a flat-faced grind stone, 254 mm (10”) wide. Grind stones up to 14” wide are available as an option.

Reducing Radial Force Variation

The Center Grinder can also be selected to reduce radial force variation. This reduces force variation by removing tread rubber across the tread face in the area of high force. This uses a curved grind stone. The curved grind stone is designed to grind only the tread edges.

Center Grinder Kit

Included is one flat face 80 grit carbide grinding stone, and a fully programmable positioning system. A dust collector is required for hook-up to the dust collection shroud, and is provided by the customer.

Test Plans

Test plans may be set for each tire type. Grind limits can be set for peak-to-peak force, first harmonic, and other harmonics. Test plan parameters include maximum depth of grind, tire rotation speed, and grind optimization limits. Grind optimization limits include a high power limit and a low power limit. These limits assure that the maximum amount of rubber is removed on each rotation, without compromising the visible surface quality of the ground area.

Force Variation and Radial Runout waveforms can be displayed in real-time during the grind operations, showing the pre-grind values, and most recent values. All waveforms can be saved to a file, and then analyzed off-line by the customer.

Shoulder Grinder Kit

The shoulder grinder upgrade includes all equipment to reduce radial force variation (RFV) by grinding the shoulder area of the tire. This allows for the rework of tires that fail force variation grade limits, and reduces the number of tires that are scrapped or downgraded.

The shoulder grinders reduce force variation by reducing the footprint of the tire in the area of high force. The grinders are positioned according to feedback from the force measurement system.

The shoulder grinders can be set to automatically grind the following range of angles:

Bead Diameter	Angle Range
12 inch to 16 inch	10° to 23°
17 inch to 25 inch	10° to 21°

For stepped rims, the larger diameter step sets the angle range.
To grind at high angles, it may be required to manually change the skim probe position.

The above angles are achieved using our standard 10° tapered grind stone.

An 80 grit carbide grinding stone and a fully programmable grinder positioning system are included in this upgrade. A dust collector is required for hook-up to the dust collection shroud, and is provided by the customer. Test plans may be set for each tire type in the same manner as for the Center Grinder.

Globally Positioned to Serve You

Micro-Poise Measurement Systems LLC serves the tire and automotive industry all over the world.

- Micro-Poise Headquarters
- Corporate Offices, Stocking Locations and Services
- Sales Representatives

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