



Big finish

Final finish tire testing today with Indian tire manufacturers

by Shaun Immel, Micro-Poise Measurement Systems LLC

Indian tire manufacturers are benefiting from significant increases in domestic consumption and international export of quality radial passenger and truck tires. The market demand for radial truck and bus tires is particularly strong.

As the Indian infrastructure continues to improve, the need for a better tire product for both passenger and truck tires has prompted many of today's Indian tire manufacturers to improve and enhance their final finish test and measurement capabilities. This is done to meet both the market volume demand and for cost-effectiveness on a per-tire basis.

As consumers in the Indian tire market become more discerning, the need increases to better measure and screen tires for properties relating to vehicle ride

performance. Automakers require OE level quality and performance; and insist that the tire manufacturer screens tires for force variation, roundness, and dynamic imbalance. Older methods of tire testing, such as static balancing, or piece sampling, simply do not meet today's market requirements.

New investments in precision testing equipment, such as precise uniformity testing, dynamic balancers, geometry inspection systems, and x-ray systems all provide the tire manufacturer with the test capabilities required to assure a superior product delivered to a new, and ever-demanding customer base.

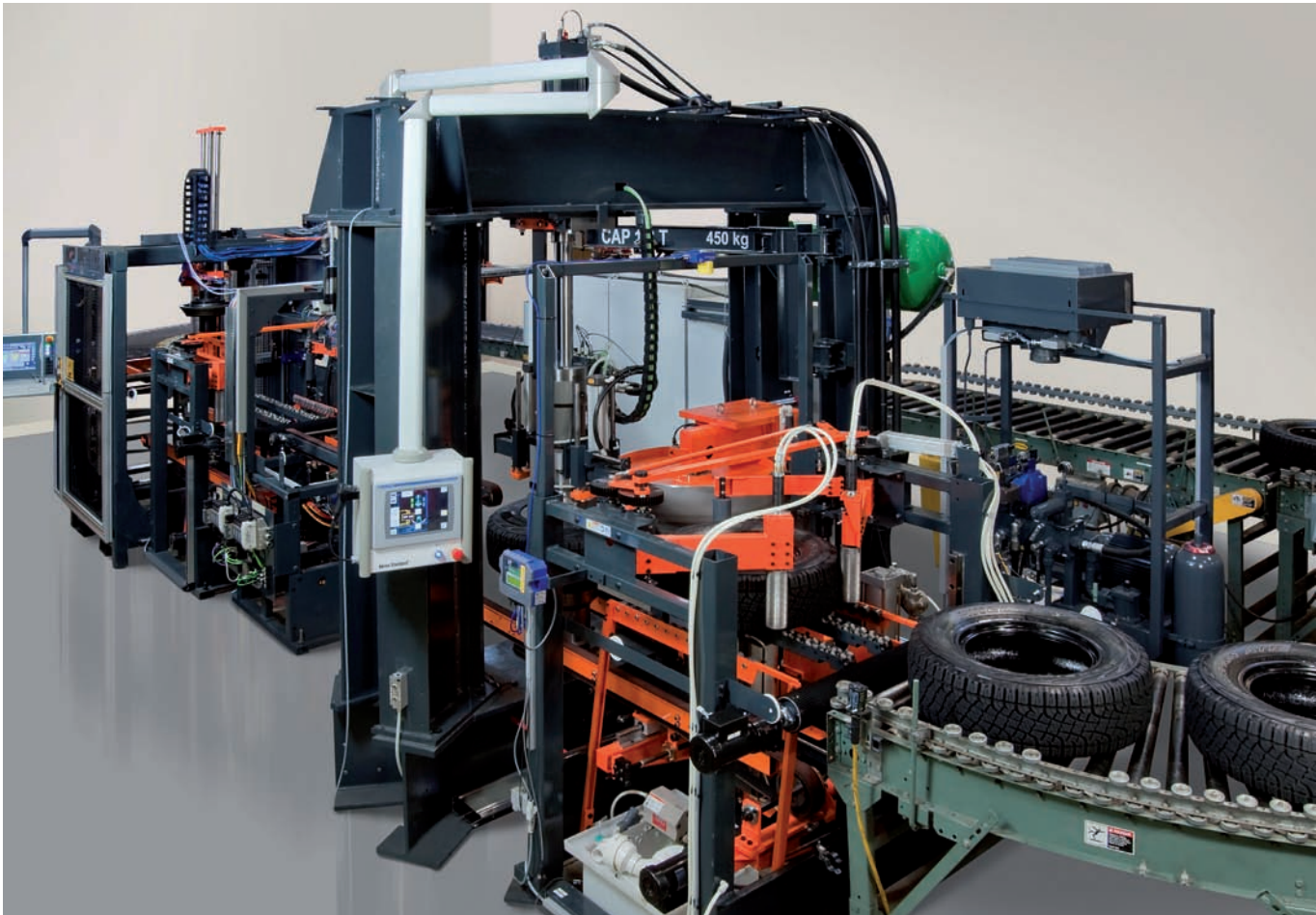
Manufacturing efficiencies also play a significant role. Smart Indian tire manufacturers are not only seeking the most precise testing equipment available

to provide the best technical results, but also seek higher efficiencies from new tire testing and measurement equipment.

When combining the most precise equipment in a flexible, time-efficient configuration, passenger tire manufacturers as a result are installing what Micro-Poise Measurement Systems, LLC refers to as a modular tire measurement system (MTMS). They are recognizing that investing in rugged, high-precision testing equipment in its most efficient configuration – such as MTMS – provides the best return on their capital investment and minimizes ongoing operational costs.

The MTMS has multiple advantages, including lower cycle times, requiring fewer machines to meet plant capacities; more repeatable measurement, reducing

TESTING



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scrap and ride adjustments due to poorly measured tires; and less labor, less floor space, and the use of less expendable materials, such as bead lubricant and marking tapes.

As an example, the MTMS enables an individual tire to be tested for tire force variation, imbalance, and geometry in less than 20 seconds on average. If a manufacturer is testing five million radial passenger tires per year, that could translate into seven MTMS final-finish production lines being required in the plant.

Advantages

There are inefficient configurations or less accurate machines available which operate at, for example, 26 seconds per tire. This could require an investment in eight equivalent final-finish production lines with less repeatable measurement results per line. The additional testing system requires more plant floor space, more operators, more maintenance, and the use of more expendable materials.

Less accurate configurations may also result in mis-identified tires, resulting in poor tire performance and unhappy customers. Clearly, from a volume perspective, Indian tire manufacturers who are investing in total MTMS systems, within which all final finish operations are

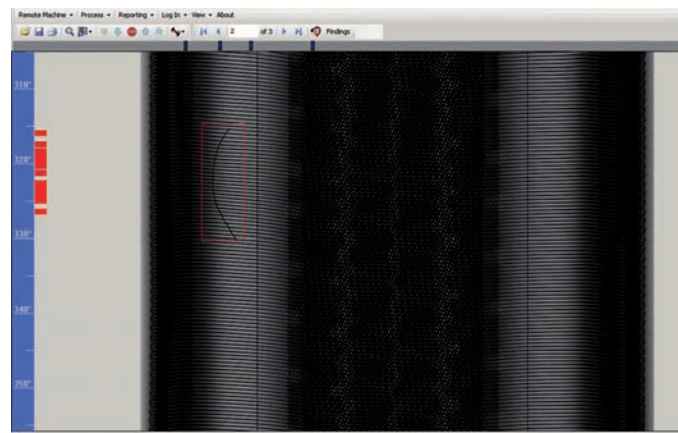
integrated and streamlined, are receiving their best return on investment.

Similar to passenger tire final-finish operations, there have also been significant improvements in testing truck and bus radial tires. As an example of such improvements,

consider the latest enhancements in truck tire x-ray equipment.

The x-ray methodology of testing is the best way for steel-radial truck and bus tire manufacturers to ensure tire carcass integrity. There have been recent enhancements in analysis of the tire's full x-ray, such as Collmann's coll-tech x-ray automatic defect recognition (ADR). This product takes the guesswork out of the test.

Through ADR analysis, one operator is now directed to all potential flaws in truck-tire construction and can potentially use this feature for automatic checking across multiple tire-production lines.



Screenshot of the Coll-tech x-ray automatic defect recognition system

Tire manufacturers want accurate and precise test equipment that is also quick and efficient to use in the manufacturing process.

Global tire manufacturers have challenged the tire-testing equipment providers, such as Micro-Poise, to continue to provide enhancements in measurement capabilities and equipment efficiencies. With the increase in the Indian tire market today, Indian manufacturers are now taking advantage of the improvements made during recent years in final-finish equipment and making wise investments in testing, such as modular tire measurement systems. **tire**