

Helping a Global Tire Manufacturer Meet Its Net Zero Goals and Improve Machine Flexibility

RESULTS

- Upgraded machines that use less energy, taking the company closer to net zero.
- Better machine uptime, thanks to new system monitoring capabilities.
- Improved machine flexibility and upgraded fieldbus connectivity.



APPLICATION

Upgrading tire-building machines with smart, flexible and efficient pneumatic components to improve machine flexibility and bring the company closer to net zero.

CUSTOMER

This customer is a global tire company that manufactures and markets tires and related services for vehicles, including airplanes, automobiles, motorcycles, farm equipment and trucks. The company is present in more than 170 countries, with production plants in 17 countries.

CHALLENGE

A leading tire manufacturer wanted to align its North American facility with a company-wide initiative to achieve net zero emissions. In addition, the company wanted to improve the design flexibility of its tire-building machines, including upgrading the fieldbus connectivity.

SOLUTION

To help the manufacturer meet these goals and move closer to net zero, Emerson experts worked closely with the company to understand its technical challenges. Experts proposed outfitting and upgrading the tire-building machines with smart, intuitive and efficient pneumatic components that ultimately improved the machines' flexibility, uptime and energy consumption.

Thanks to a strategic combination of components and systems — which included directional control valves, fieldbus communications nodes and air preparation units with integrated sensors —

Customer able to move closer to net zero through Emerson partnership.

Emerson experts assisted the manufacturer in:

- Upgrading the machines' fieldbus connectivity to EtherNet/IP, a highly flexible protocol that supports future system expansion and the addition of I/O or remote sensors.
- Unlocking airflow and pressure monitoring capabilities with smart sensors.
- Reducing the machines' energy usage with efficient components.
- Better controlling machine uptime.

As part of this complete technical solution, the directional control valves — which use minimal power and achieve high flow rates — were easy to install and configure onsite, while the filters, regulators and lubricators (FRL) provided the manufacturer with highly reliable and robust operation. In addition, the integrated sensors enabled the manufacturer to begin to monitor air consumption and pressure on its machines and take quick, effective action in the event of detected leaks. Smart and highly flexible, these sensors have optimized the tire-building machines' energy consumption and played a role in preventing costly machine downtime.

As a result of their collaboration, Emerson experts and the manufacturer successfully upgraded the tire-building machines, improving the machines' flexibility with EtherNet/IP connectivity and system monitoring capabilities. Empowered with the new stream of airflow and pressure data, the company has also successfully cut its energy usage, bringing them closer to their net zero goals.