

Switch to automatic

InterEuropean's CEO, Vladislav Tsoupikov, believes that tire factories today can operate with greater speed and efficiency than ever, thanks to advances in automation

by Karl Vadaszffy

Having reliable machines with as little manpower involvement as possible is a key demand in the tire industry, according to Vladislav Tsoupikov, founder and CEO of InterEuropean, which designs and manufactures tire machinery and equipment.

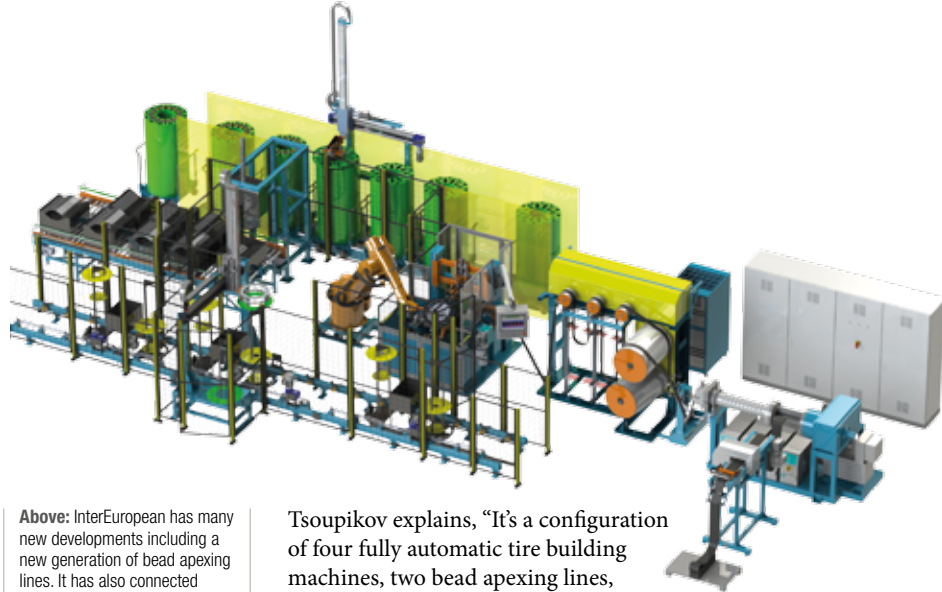
One of the aims of the Italian company's machines is, therefore, to "try to eliminate the human factor" by negating the need for an operator or reducing the role one plays in a line. "Fully automatic machines are reliable and effective," Tsoupikov comments, explaining that InterEuropean's machines "check everything consistently and guarantee that everything coming off the machine is according to specification".

Tsoupikov reveals that the company, whose global client base includes Bridgestone, Michelin and Goodyear, is currently in the process of designing a fully automatic bead apexing line for truck tires up to 24.5in. The bead handling of this system will be managed by a robot, so the concept will remain the same as with the company's other machines. With a cycle time of just 20 seconds per bead, the line should be available by the end of this year.

Addressing the challenges of developing such a solution, which has been in development for a year and a half, Tsoupikov says that a different extruder was needed to deal with two compounds instead of only one found with PCR tires, as well as catering for the extremely high size range – with truck tires, the apex size can go up to 180mm. "In addition," he says, "we need to pre-assemble the apex with two other strips in different areas, beads and apex, before it is fully assembled. And we need to ensure it can all be handled automatically."

Indeed, Tsoupikov reveals that tire building machines and bead apexing lines both for PCR and truck tires will now be the company's priority, and it aims to continue to innovate and grow so that its technology can be at the forefront of industry developments for years to come.

With the demand for automation central to its R&D, the company has already developed new generations of TBMs and apexing lines, combining them into a fully automated integrated tire assembling cell, or ITAC.

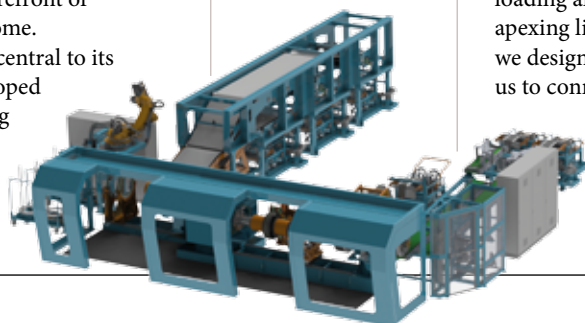


Above: InterEuropean has many new developments including a new generation of bead apexing lines. It has also connected TBMs, bead apexing lines and a bead winding line together in an automatic system

Below: InterEuropean's CEO, Vladislav Tsoupikov



Bottom: Unistage TBM



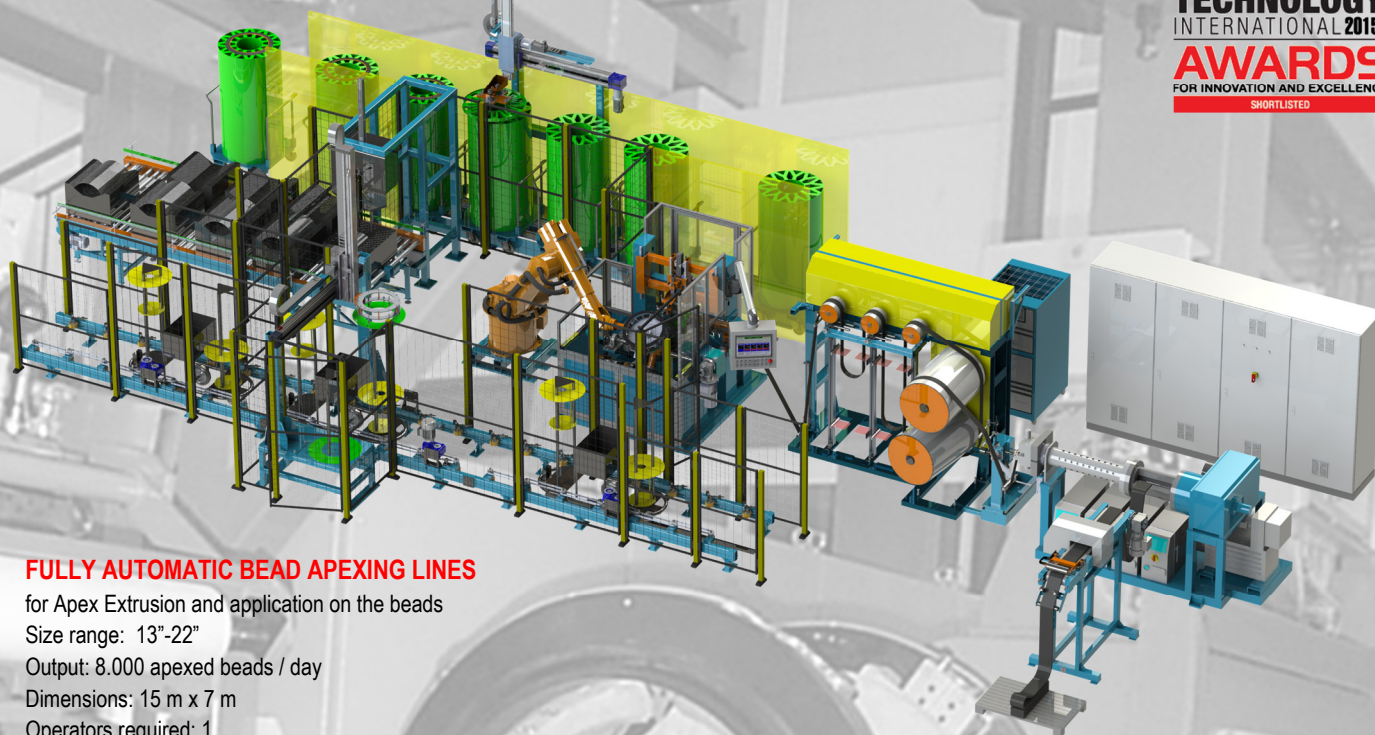
Tsoupikov explains, "It's a configuration of four fully automatic tire building machines, two bead apexing lines, and one bead winding line – everything connected together in a fully automatic system."

This system is designed to manufacture 8,000 tires per day, which is the equivalent of 2.5 million tires per year. Laser systems and cameras control each step of the manufacturing process and guarantee that optimal quality is maintained at every level.

The new generation of bead apexing lines, with separator-placed robot, has been developed for passenger and light truck tires, from 13-22in, with a fully automated production output of approximately 8,000 beads per day. Bead loading and unloading are now fully automatic, and a key benefit is the powerful stitching of the apex to the bead from both sides, guaranteeing that the apex will not separate from the bead during the turn-up stage at the tire building machine.

Tsoupikov sees these two new generations as "the last step of the development process", which started 14 years ago with the launch of the company's first TBMs, including its industry-unique combi machines. "Following this, we proceeded with upgrades to our manufacturing lines, removing operators from loading and unloading operations on the bead apexing lines and replacing them with a robot. Then we designed bead handling cassettes, which enable us to connect the bead winding line to the bead

apexing line, and from the bead apexing line transfer the beads to the tire building machines. And now we've connected all these components into one system." **tire**



FULLY AUTOMATIC BEAD APEXING LINES

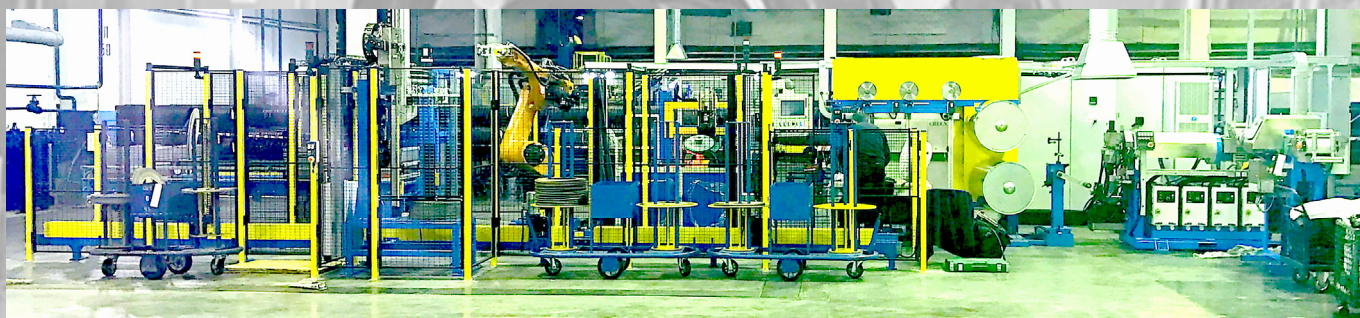
for Apex Extrusion and application on the beads

Size range: 13"-22"

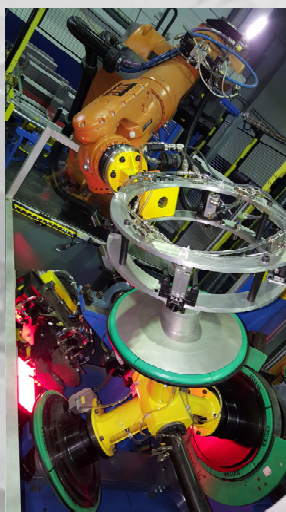
Output: 8.000 apexed beads / day

Dimensions: 15 m x 7 m

Operators required: 1



Industrialized and operating in a tire plant



Customized Beads Loading /
Unloading by Robot

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