

ENHANCING PACKAGING EFFICIENCY WITH PNEUMATIC PROPORTIONAL VALVES

According to Michael Ruf, deputy general manager of Transnova Ruf, their company stands out from other packaging machine manufacturers due to their design-to-order concept. By incorporating cutting-edge robotic and control technology, along with pneumatic automation technology from Festo, specifically proportional technology on valve manifolds, Transnova Ruf creates tailored, robot-based packaging, palletizing, and handling solutions.

Unlike manufacturers relying on standard machines with chains for sliding, stacking, and sorting, Transnova Ruf develops space-saving, energy-efficient compact systems with high power density and fast format changeovers. This innovative approach enables the company to deliver over 100 customized turnkey packaging lines annually, specializing in picking, packing, and palletizing. Their solutions are precisely tailored to meet customers' requirements and cover the entire process chain for final packaging, resulting in double-digit annual growth.

Embracing Micro-modular Systems

Michael Ruf emphasizes that Transnova Ruf has shifted away from a rigid machine program approach and embraced micro-modularity.



This concept allows for the production of previously unimagined solutions, akin to building with Lego sets. Micro modules, acting as functional elements, are used to configure the system based on individual customer specifications.



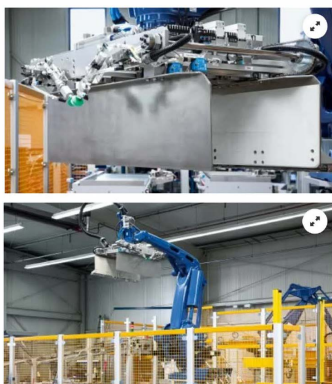
"Thanks to proportional valves from Festo, we have the right product for our tailored modular packaging and palletizing systems."

Michael Ruf
Deputy General Manager of Transnova Ruf

Each module has a corresponding CAD template with hardware and software, which are combined to create a customized packaging solution. This design-to-order approach provides a competitive edge and allows for seamless integration of approximately 200 robots each year, offering greater flexibility, enhanced handling, and faster format changeovers. The company caters to diverse customer needs, ranging from packaging button batteries and salami to IV bags, refrigerators, control cabinets, and various products from food, cosmetics, non-food, chemical, medical, and pharmaceutical industries.

Harnessing Pneumatic Proportional Technology

To meet the market's demand for cost-effective production systems capable of handling frequent product and format changeovers, Transnova Ruf utilizes pneumatic automation technology. The packaging and palletizing cells feature gripping modules equipped with vacuum technology, pneumatic drives, grippers, and valve manifolds. A crucial component is the integrated proportional pressure regulator within the [CPX/MPA](#) valve manifold, strategically positioned to provide precise pressure control exactly where it is required. Festo Product Manager Ulrich Sixt explains that the proportional pressure regulators [VPPM](#) ensure secure grip on the packaging without deformation or damage, with factors such as fullness, packing density, and weight influencing the gripping pressure. The system's proportional technology allows for real-time adjustments, crucial for handling over 100 different formats. Transnova Ruf employs SIMPLO software, developed in-house, which allows machine operators without programming skills to create new palletizing patterns and seamlessly import them into the robot control system during live production, ensuring control precision and repetition accuracy.



Diagnostics and Remote maintenance

Diagnostics and remote maintenance play a crucial role in ensuring efficient operation of the proportional pressure regulators [VPPM](#), which are integrated into the valve manifold [CPX/MPA](#). These regulators have both analog and digital inputs and outputs, enabling precise control and monitoring of specific process sections. By connecting the CPX to the internet, online access is granted, allowing diagnostic data to be retrieved. This capability enables swift identification of maintenance needs, determining whether the issue can be easily resolved or, in rare instances, if the entire valve or valve manifold needs replacement. Michael Ruf, with a smile, expressed the benefits of this technology for their medium-sized company, as it enables them to provide exceptional service to their global customer network.