“Tosa Group is an Italian company operating only at levels of excellence, acting in 115 countries. For almost 40 years we have been the end-of-line reference partner for pallet handling systems, stretch film wrapping, heat-shrink film bundling and strapping systems. We are faithful to the mission which has been guiding us since the beginning: constant search for innovation and absolute quality are necessary conditions for the Tosa Group,” Fabio Tosa, Ceo of Tosa Group, says.

Today the Northern-Italian machine manufacturer headquartered in Santo Stefano Belbo, near Cuneo, serves both large, medium and small companies acting worldwide in the food & beverage, homecare and chemical industries. About 90 percent of Tosa’s machinery is sold overseas.

One of the most recent example of Tosa Group’s excellence in technology is the new Tosa 126, a fully automatic pallet stretch wrapping machine with rotating film-roll. The machine is designed to be integrated into an end-of-line plant. During the exhibition the wrapper is integrated in a line which includes also an automatic strapping machine CAM 34 for horizontal strapping operations and a pallet handling system completely produced by Tosa.

The machine, with a painted steel frame, features the Tosa low maintenance technology: up and down movement of the rotating ring by toothed belts are completely maintenance and lubrication free, so as the machine lifting system with gearless direct motorization.
The Tosa 126 includes different units. The first one is an electronically controlled pre-stretch carriage system - version Tosa 492 suitable to prestretch the film up to 400%. The second one is an automatic cutting, hooking and sealing unit suitable to seal the film at the end of the wrapping cycle on the counter-bar. The third unit is the Tosa 892 film roping system which allows to set the band reduction value in any position on the pallet with accurate precision.

The Tosa 126 features also a pantograph top presser to fix the products on the pallet during wrapping operations, which brings maximum flexibility of use, reduction of overall height of the equipment and optimization of energy consumption.

Last but not least, the wrapper integrates a system for the automatic application of vertical corner posts for the protection of the edges of palletized loads and an automatic stretch film-roll change system. USA- and EU-patented, this device allows to replace automatically exhausted film-rolls in 30 seconds without stopping the wrapper and without operator intervention.

The new Tosa 126 wrapper, which is fully equipped with a Rockwell Automation control solution, has the ability to work at a maximum speed of 140 pallets/hour, featuring a maximum film-roll rotating speed of 55 Rpm. Both film pre-stretch system and film roping system are driven by brushless motors allowing to perform customized wrapping programs with the maximum precision, to optimize film distribution and to increase pallet stability, yet minimizing overall maintenance, film consumption, giving significant cost saving.

The main functionalities of the wrapper are managed by an Allen-Bradley® ControlLogix® L72 PAC (programmable automation controller) supplied by Rockwell Automation. The up and down movements of the rotating ring are controlled by Allen-Bradley PowerFlex® 525 inverters, in order to obtain the maximum positioning precision. The Allen-Bradley PowerFlex 525 inverters manages also the rotating movement of the ring, as to perform an excellent and precise control of the overall rotating operations. Additional components of the machine include a photocell automatically detecting the different pallet heights and Allen-Bradley smart safety relays.

The Rockwell Automation platform for the Tosa 126 is completed by an Allen-Bradley PanelView™ 1000 (10") HMI, which allows operators to visualize each manual operation or any possible machine failure. Through PanelView 1000 HMI, operators are also able to program different wrapping recipes according to each format, or even to visualize and control products featuring variable parameters of film tension and wrapping path. Furthermore, from PanelView panel, operators can set up pre-stretching interchangeable ratios from 0 to 400 percent and wrapping cycles with variable pre-stretching configuration.

“We selected a Rockwell Automation platform because we recognized in the automation supplier a strong technological excellence and an extremely valid worldwide service support, which are both strongly appreciated by our customers,” Fabio Tosa explains. “The Rockwell Automation team helps our technical department’s people to improve their expertise and their technical knowledge on Allen-Bradley solutions. Furthermore, we are able to minimize machine installation time and overall machine costs, while enhancing the machine’s flexibility for future change.” In addition, Rockwell Automation supported Tosa’s engineering team to get the most out of the Tosa 126 concept of ‘smart wrapping technology’. “The Tosa 126 wrapper integrates our smart wrapping technology, which allows to optimize film application during wrapping cycles and to control precisely film tension at the load palletized corners,” Fabio Tosa says. “Each operation can be fully monitored through the HMI panel, as well as it is possible to store historical data about film consumption, cycle timing, wrapping numbers, product format, wrapping recipes, film typology for each palletized load.”

For more information, contact:
TOSA SpA
Ph. +39 0141 841000
Email: info@tosa.it
http://www.tosagroup.net

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Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Klierlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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