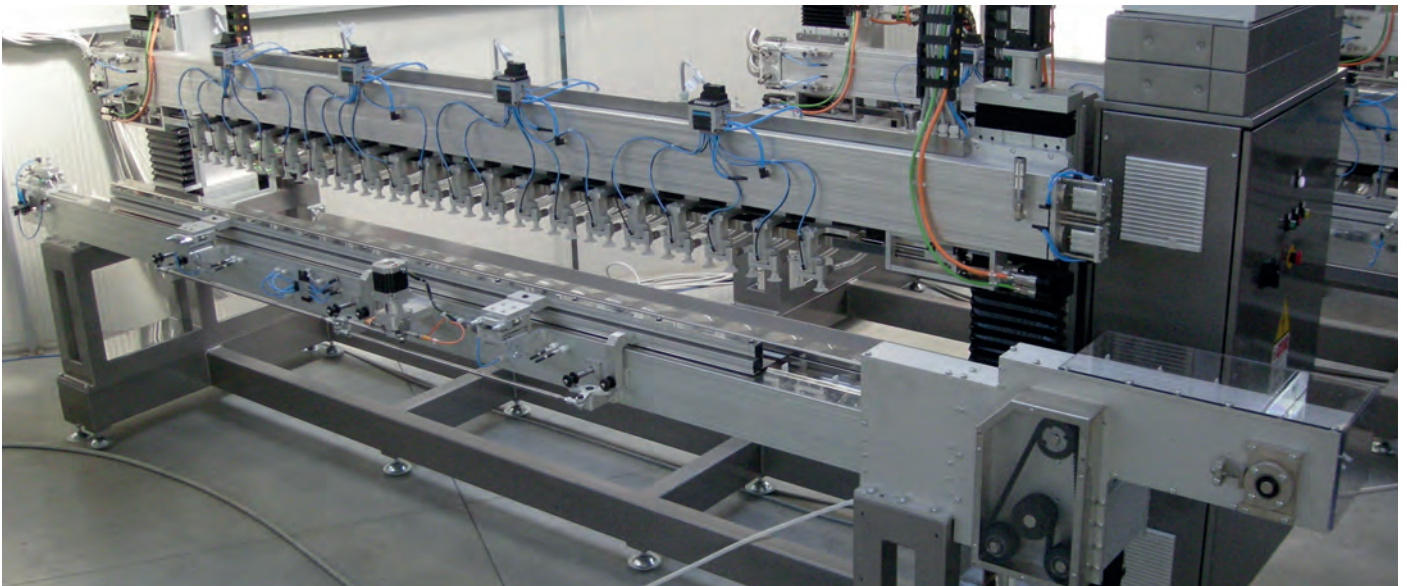


Robo.Mec.® is a new development patented by Premec used to transfer dry baked products such as biscuits, crackers, rusks, directly from the oven mesh to the wrapping machine chain, in two high stacks.

The advantage offered by this system against traditional transport and conditioning lines is the avoidance of any product treatment (channelling, transport, stacking on edge, portion forming), resulting in a significant scrap rate improvement and total hygiene. An upstream vision system for all the bridges (one per wrapper) serves as a quality control point and generates the pick-up and transfer signal.

The equipment features the precise and sturdy mechanical design common to all Premec machines, coupled to a control system offering a simple and user friendly interface. The system can be employed in all situations where the incoming product presents a good geometrical layout.



OPERATION DETAILS

The Robo.Mec.[®] bridge structure is positioned across the oven mesh and is equipped of a 2-axis head, covering the surface of one row across of rusks, equivalent to the mesh width. Product is picked up by a series of suction cups mounted in pairs on the same arm.

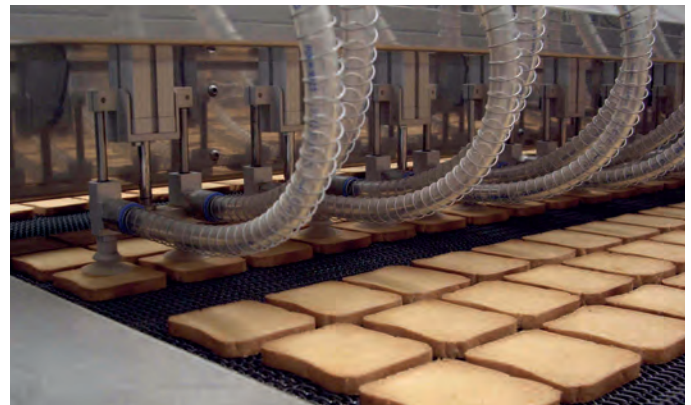
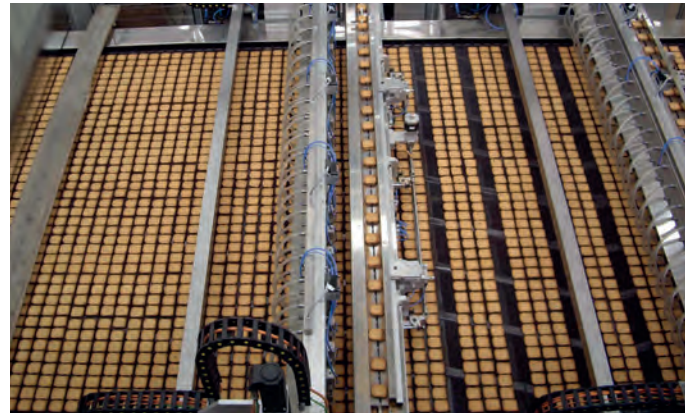
All arms are independently actuated by air cylinders. The head carries these assemblies, and moves them between the pick-up area on the mesh and the stack forming zone over the chain. Following a signal from the vision station, the head travels towards the incoming row and the arms with their suction cups pick up a couple of adjacent products. The head raises and transfers the doublets over the chain, bringing them at the same time to the correct pitch. After reaching the chain area, the head lowers and releases the first product on a support plane formed by two retractable plates over the chain. Following this operation, the head moves and drops the second rusk over the first.

The product is introduced in the chain with the same orientation it had on the oven mesh: should it be necessary a 90° rotation, a rotary suction cups arm should be used. The system can operate at 15 cycles per minute and for 44 rows, typical of a rusk line, a bridge can handle 660 picks per minute, i.e. 330 packs per minute. The chain belongs to the bridge and the interface with the wrapping machine chain consists of an overhead transfer unit, used also to group the stacks to form multiple packs.

The line shown in the picture, 4 bridges plus a spare one, can handle 1320 packs/min with stacks of 2.

The bridge described is suitable to form stacks of two in several groupings, single or multi-stack.

Bridges for higher stacks can be configured by changing the pick-up arm. Robo.Mec.[®] carries two axis controlled servo motors for head raising and lowering, two for the head forward-backward movement, two to obtain the chain pitch and one for the chain.



SPECIFICATIONS

Installed power • 10 kW

Cicles/min. • 15

In-Feed height • 190 mm + mesh height

Overall dimensions • Height x Width x Depth
(oven mesh 3500 mm) 2200 5200 1650 mm

Weight • 550 kg