

IML dispensing

- We make in-mould labeling easy

Rollquett IML dispenser using advanced technology to handle a wide range of films as e.g. 30 micron, oxygen barrier and light barrier with complex geometries. Improved label charging, no need of spray powder and positioning accuracy are some of the unique advantages of our technology.

Rollquett

TECHNICAL OVERVIEW

The labels are printed on a web in a predetermined pattern. There is also vision-marks printed on the material between the labels. The labels are punched by the printer but left in the web attached with micro-joints, small interruptions in the cutting edge of the punch. Punching can either be performed in-line, in the printing press or off-line, in a separate punching machine, depending on the printers preference. There is no need to add antistatic agents for the printing operation neither for handling the labels thereafter. There is also no need to use spray powder in the printing process, hereby eliminating all problems caused by powder in the injection moulding process. The printing press can be ran in full production speed, since there is no separated labels to consider, the web is just spooled on to a roll. This means a speed increase between 100% and 200% depending on printing press. After the labels are printed and punched the roll is simply put on a pallet and shipped to the injection moulding plant. There is no need for handling labels, banderoles or boxes.

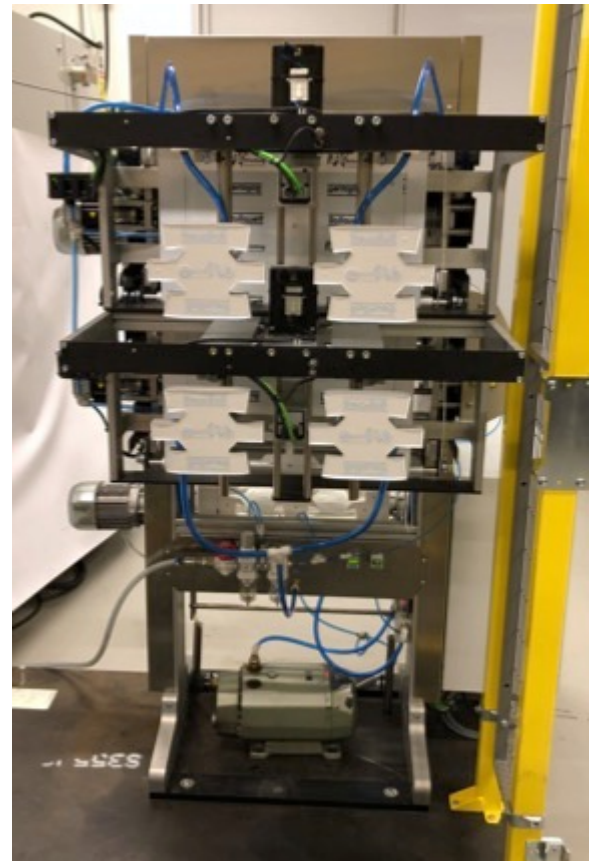
A roll with labels typically holds 50 000 to 100 000 labels, enough for approximately 24 to 48 hours of production. When the injection moulder receive the roll, it is put in to the Rollquett IML dispenser and the production is started. There will be no need to fill label magazines and the labels are fed to the IML-robot with very high position accuracy and reliability. Since the labels never are stacked the risk for picking more than one label is eliminated. Our tests show position accuracy of $\pm 0,05$ mm, an improvement in the range of factor 10 compared with traditional label magazines.

MACHINE ARCHITECTURE

The Rollquett IML dispenser is built with a modular concept. The rollstands are identical and the web can in most cases be ran from either of the two rollstands just by selecting direction on the operators panel. This makes it possible to use labels regardless off how the roll is spooled. The web units and the picking units are also well proven standard modules. The design is made with the intention to exceed a lifetime of five years with 24/7 production without any other maintenance than change of worn pneumatic hoses.

FUNCTION

On the IML dispenser there is two identical rollstands that operates in an autonomous way. When the web is pulled the unwinding rollstand unwinds the correct length of web determined by the position of a dancer roller. This dancer roller also provides the proper tension of the web by its weight. The up-winding rollstand operates in the same way but in reversed direction.



There is no sideways guiding of the web. The web is allowed to wander sideways according to variations in the roll. Instead there is two vision systems that with very high accuracy, measure where the web is and send information to two servomotors so that the picking units can pick the labels in the proper position. The delivery position to the IML-robot will always be a fixed position.

When the IML-robot takes the label the vacuum level in the picking units on the Rollquett IML dispenser will drop and this initiates another picking cycle. After every picking cycle the machine waits for the IML-robot to take the labels. This means that the Rollquett IML dispenser operates transparent for the operator of the injection moulding machine. If there is an interruption in the moulding process the Rollquett IML dispenser will simply wait until the process is started again.

SECURITY

The Rollquett IML dispenser is a modular system and it is configured according to the customers need. For a simple 5-sided label or a label for a lid the machine takes up approximately 1,5 m² and is, depending on the application, about 2 meters high. The weight of the machine is about 250 Kg. It is fixed to the floor at installation for security reasons. The moving parts are covered with protective covers that is adapted for each application and the moving parts are restricted in force so that they won't inflict serious injury in case of misuse