

## Banderole instead of shrink foil

### A „smart“ engine for a new way of one way packaging

*The Kranenburg-Nütterden-based company project Automation & Engineering presents as an expert for secondary packaging a revolution in the packaging industry for the beverage packaging unit. The intensive work and effort for practicable, flexible and eco-friendly packaging leads to a new kind of one way packaging: PROsmart.*

**E**nergy. Costs. Nowadays these terms are inseparable. In times of rising energy prices and missing subventions for the producing industry the reduction of these costs has become more important in the last couple of years. At the same time, Germany tries to think and act in a more ecological way. Because of this and countless other reasons the company project Automation & Engineering set the path for a more eco-friendly future for the packaging industry, which also saves money and energy.

#### Current situation

The worldwide market for drinking-water and soft drinks is dominated by PET bottles. These are predominantly presented in shrink foil package units. However, the shrinking of the foils is an energy intensive process with high costs and is followed by a considerable amount of waste. Thus, it comes to mind that shrinking foils are not the most eco-friendly way of packaging. The foil costs and the energy consumption are very high. Furthermore, the transportation and opening of these packaging units is a major problem for seniors and disabled people. With the new packaging machine comes an alternative to the usual shrink foil packaging units, which reduces the needed amount of energy and the produced amount of waste.

#### Objectives

For years, project aimed to replace the energy and resource consuming shrink foil with eco-friendly solutions. By developing this new packaging machine, project wanted to combine low energy, costs and resources with high comfort for the consumer. This always plays a central role in the development of new solutions. The intensive work and effort for practicable, flexible and eco-friendly packaging lead to the development of a new kind of one way packaging: PROsmart. With the new slogan: Banderole instead of shrink foil packaging.

#### The product and its innovation

In this project, a developed machine packs special beverage bottles with a banderole at a high clock rate into packaging units. Beforehand the application of banderole for products in a horizontal or vertical flow was already known. Although their clock rate was not high enough for industrial usage for the beverage industry. In this project, the challenge was to further optimize velocity, reliability and life time and to combine these aspects in a machine that could be brought with a competitive price on the market. In addition to this, the machine should not take up more space than a shrink foil engine would. With this new technology, it is possible to label one to four bottles or to put those in a packaging unit with a carry handle.

#### The market and its clients

International companies always specify high clock rate, availability and life time. The future banding machine had to compete with these specifications. The space the new machine could use was predetermined by the existing shrink foil machines as well. That target was reached. The first banding machine is already working in an international soft drink company in multiple-shift operation.

#### Application

PROsmart is a new green one way packaging, which means cost saving for the companies. The company significantly reduces their CO<sub>2</sub> footprint and essentially contributes to save our environment by using this new

packaging. PROSmart bundles individual products with a banderole to form a tight and practicable packaging unit, after considering the number of products to be grouped. Up to four seized products like PET bottles or products from the food or non-food field as well, can be packed to a packaging unit using the new technology and labelled with a carry handle. The banderole can consist of different materials like paper, coated paper, foil PVC of PP or PE and can be manufactured in different shapes and sizes. All materials like carry handles as well as the banderole can be printed for marketing purposes. If the product should advertise itself, it could be made out of transparent foil so that the product can be seen.

### Advantage for the consumer

The buyer of a PROsmart packaging receives a practicable and comfortable packaging which is convenient for seniors and disabled people as well. Because of the PROsmart packaging, this packaging is easily being carried when labelled with the carry handle. The opening of the packaging is being facilitated by the practicable and integrated pull tape in the packaging. The consumer has the possibility at the supermarket to buy the entire packaging unit or to open the packaging unit to take out individual bottles. The minimal amount of packaging waste reduces the waste volume.

There are a lot of advantages for the commerce because of a banderole which covers the bar codes of individual bottles and when printed with a bare code to help a clear identification of the packaging unit by the pay desk scan. There are also some benefits concerning the PROsmart packaging when being transported in the company. The stable and secure packaging labelled with carry handle facilitates the commissioning and the storage into shelves.

### Advantage for the bottler

The weight of the packaging foil is considerably reduced. For example, the weight of the packaging for a six-pack of 1.5 L PET bottle packaging unit decreases as follow:

- Weight per packaging by considering the shrink foil: about 13 to 16 g
- Weight of a PROsmart packaging, about five to six g (considering a foil width of 100 mm and a thickness of 55 µm)

In total the usage of PROsmart packaging leads to a weight reduction between 50 and 75 percent (considering a foil width of 100 mm and a thickness of 55 µm).

This weight saving means less CO<sub>2</sub> emissions and a reduction of material transportation as well; beginning at the manufacturing process of the foil to the transportation to the bottler up to the POS. The license costs in the German dual system (the Green Point) decrease considerably by year as well. But the main savings are with energy. It is revolutionary that project Automation & Engineering created a machine which makes the usage of shrink tunnels, e.g. in the beverage industry, unnecessary. Contrary to a shrink tunnel, PROsmart only uses 5% of the normally needed energy, which means a reduction of 95% of energy consumption.

### Logistic asset

Shifted packaging units are also possible with the PROsmart – nested packaging units reduce the effort for all the palette handling by 5 percent, because there are more packaging units which can be placed on one palette. That means: less plastic waste, less environmental damage, less waste disposal, less costs as well as less weight by the transportation.

### Performances and technology

The PROsmart machines can modularly be built and adapted to the conditions of production. A machine always consists of a banding unit and a carry handle unit. In the run-in step, the predefined parameters are grouped into the wrapped packaging units and transported to the banding unit. There, the individual products are then formed into a stabile packaging unit. The performance of one module is at 35 packages per minute, whereby multiple modules can simultaneously be active to reach high rates of produced amount. After the banding, the packaging is labelled with a carry handle. With the PROsmart, project Automation & Engineering has brought a convincing, eco-friendly, practical and path-breaking packaging, which is suited for almost every production field.

### Summary

The PROsmart packaging is particularly advantageous for manufacturers, because of expected significant cost savings. The ecological advantage lies in the reduction of foil quantity and packaging weight as well as energy saving. The low amount of needed energy reduces the CO<sub>2</sub> emissions and the manufacturing costs significantly. Furthermore, the banderole and the carry handle can be labelled for individual marketing purposes, e.g. an “eco-friendly” label could be a sales appeal to costumers, because the demand of eco-friendly products has increased considerably in the last couple of years. This new packaging reduces plastic waste, saves license costs for the DSD and relieves households because of a decrease of upcoming waste. The commerce also takes profits out of this new packaging: Plastic waste gets remarkably reduced, which leads to less costs. Moreover, the logistics and transportation are more rational due to the carry handle. Multiple multinational companies in the soft drink field have already integrated PROsmart technology into their factories: First engines to produce the eco-friendly PROsmart packaging are, after successful market tests, already in operation and the first PROsmart packages can already be seen in stores, e.g. in Spain, where costumers received the packages very positively. More machines with the innovative packaging are already ordered. The machine is available for bottling and packaging plants and their providers worldwide. Furthermore, all manufacturers for food and non-food products are in this way able to switch to the new technology and to decrease their energy consumption.