

White-Line by MediSeal – Revolutionary supply chain concept for very small lots

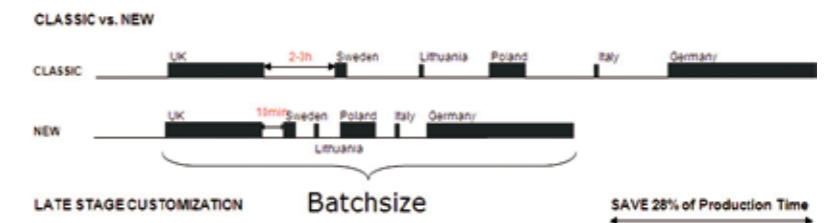
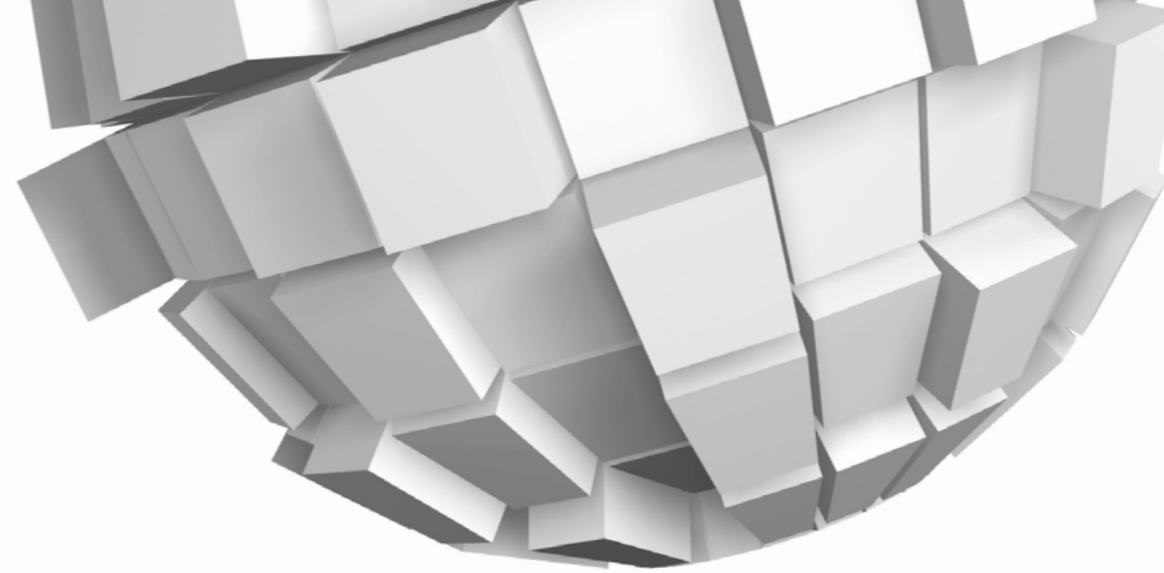
The trend towards smaller lot sizes is one which has become apparent in recent years and which will continue to grow. Units of up to 20 000 blisters are as a rule considered to be small lots, where the scale extends down to a lot size of one.

The cause is the increasing competition between pharmaceutical companies in the traditional therapeutic sectors. For this reason, markets which were previously considered too small to be profitable are now being examined more closely. The development of new drugs in new, specific therapeutic areas with a smaller number of potential patients is also becoming an area of growing interest. For the conventional packaging process, however, small lot sizes can mean a massive decline in productivity. Because of the rapidly increasing number of format changes, the efficiency of the packaging lines drops and so the cost per unit of production rises disproportionately. Even though constant improvements are being made in terms of conversion, cleaning and clearing processes, the improvements which are achieved are not sufficient in and of themselves to solve the problem of lots which are getting smaller and smaller.

The LSC®-Late Stage Customization concept – which MediSeal has been offering since 2005 – consists of a variant of partially decoupled processes, so that the blistering, cartoning and printing stages can be carried out independently of each other. This makes it possible to combine small packaging lots on the blister machine and then to customize them in a downstream, decoupled secondary packaging process.

A completely new and innovative packaging and logistics concept

This concept has now been refined and developed consistently. Specially designed for lot sizes in the range from 1 to 2000 blisters, the White-Line by MediSeal concept constitutes a brand new and innovative approach which revolutionises the entire supply chain within the company:



By consolidating different country variants, total production time can be reduced by up to a third.

All the different country variants are combined into one batch. This enables a change of country variant during a production run within less than fifteen minutes. The production of these “combined batches” takes place within specific, predefined time frames. This eliminates storage, because, depending on the needs of a particular country, the total lot size can be adjusted individually. To achieve these time savings, the production process must naturally apply new procedures. For example, all country-specific elements are “white”, i. e. they are brought onto the line unprinted and then printed inline.

This is what it looks like in detail: Blister printing uses two printers: one device applies a 2D code using UV printing for blister identification, whilst another unit prints the product information in black. To print the leaflet insert, blank paper from the roll is used – one printer respectively prints the front and back. Up to 30 leaflets per minute can be produced. The boxes are usually already printed with the logo and other non-country-specific data. The in-line printing is carried out by four printers in series: one black printer for the front and back, one printer for red, and one printer for application of the Braille text.



MediSeal



On the **MediSeal White-Line**, lot sizes from 1 to 2000 blisters can be packaged.

Blister printing: The blisters are printed individually using the DoD (“drop on demand”) method.

Blank leaflet: After printing the front and back, the leaflet is folded and conveyed to the cartoning machine.

Security through specialised inspection systems

In order to guarantee pharmaceutical safety, multiple inspection systems must be installed on the line to check each blister, each leaflet and each box separately. The three camera systems for the blister printing area verify that each blister is completely filled and inspect the UV code and the black print. Two cameras are used to check the leaflet insert, one for the front and one for the back.

The same applies to the box printing: one camera checks the top of the box and another the bottom, and a third checks the Braille text. The biggest challenge is to check the leaflet insert, because this is where the information density is very high. Here a line-scan camera approximately 4,000 pixels wide is used, generating an image with more than 20 megapixels.

All the print data is provided in the form of PDF documents: one document each for the blister, the leaflet and the print on the box. This information is managed in the customer's ERP system; an LMS (Line Management System) is used as the interface with the printers and inspection systems on the packaging machine. The line itself consists of a CP400 blister machine with an integrated P1600 cartoner, plus an attached weighing system and a table

for manual packing. A BIB-BOB module for tidy stacking of the blisters in a hopper can be fitted as an option. Final packaging is not needed for these very small lots. However, the White-Line does not necessarily have to be connected to a blister machine. In the case of a decoupled blister process and packaging process, the blisters have to be provided with blank film and a code system.

“Fundamental optimisation of the supply chain”

The advantages of White-Line production are impressive. Initial customer experience shows that small lots which previously took 4 days to produce owing to the long changeover times can now be processed in just one day. But it is not only line efficiency which can be improved dramatically. The concept also allows for an extremely fast time-to-market, as production can be started almost immediately after receiving national approval. No lead time for individual films, leaflets and folding boxes is needed, as only an electronic layout is required. This results not only in time savings but also lower storage costs. If the layout changes, existing inventory no longer has to be destroyed. Also, thanks to demand-based just-in-time production of the lot, the storage and depreciation costs for stored “residual lots” are reduced.

“With the White-Line we address and solve problems associated with small lots not through machine optimisation, but through further development of the entire production process and, above all, fundamental optimisation of the supply chain”, says Stephan Plewa, CEO of MediSeal GmbH. “In close cooperation with our customers we can achieve benefits which are impossible with traditional packaging lines.”

This year, the White-Line is also the centrepiece of our presence at Interpack! Visit us in Hall 16, Stand A25/B26!

