MEDIPAK SYSTEMS
KÖRBER SOLUTIONS

Data Sheet

Overall equipment effectiveness

Software, machinery and equipment, packaging and the supply chain - the keys to optimizing overall equipment effectiveness (OEE)

The current situation

In the interplay of equipment availability, performance, product quality and process quality, even small factors have a large effect: from cleaning times, set-up times and change-over times, through capacity fluctuations, to changes in quality dimensions such as weight, hardness, wear or visual appearance. Personalized medicine and the greater use of country-specific packaging markings also have effects. They reduce lot sizes and hence they also reduce overall equipment effectiveness. Approaches to optimization focus on the equipment level and the process level. Real-time monitoring of current operational data is also important. Key performance indicators can be used to sustainably optimize equipment and processes.

Approaches to finding solutions

Medipak Systems' approach to finding OEE solutions can be subdivided into three main areas: (1) machinery and equipment, (2) packaging and the supply chain, (3) data and processes.

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Machinery and equipment
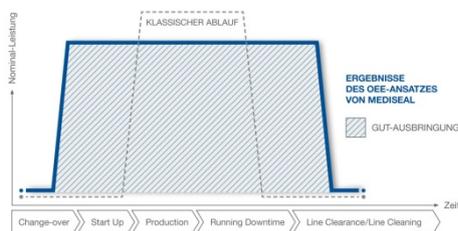
At the machinery level, Dividella, Fargo Automation, Mediseal and Seidenader focus on technical optimization of the individual machine or equipment. In terms of machine development, key factors include repair costs, maintenance cycles, future expandability and energy consumption as well as innovative technologies, the best materials, the highest quality and maximum flexibility: an existing system can be reconfigured quickly and simply. High reliability, low maintenance, short set-up times and quick format changes ensure flexibility and cost-effectiveness.

At site level, Mediseal's LSC® "Late Stage Customization" concept for example enables manufacturers to cleverly combine small batches of packaging and assemble them later.

When production lines need to be expanded, machines can be upgraded or retrofitted even after many years. The **modular, expandable structure** of the machines enables manufacturers of pharmaceutical products to ensure that their systems can adapt to changing requirements.

Dosing solutions from Mediseal and **flexible infeeds** from Dividella and Fargo Automation in secondary packaging installations and from Seidenader for inspection machines enable many different products to be handled safely, gently and efficiently.

Packaging

By combining expertise in packaging development and mechanical engineering know-how, packaging solutions by Rondo and Dividella provide a high degree of reliable machinability and high fault tolerance. They also provide protection from damage during transport and storage or damage caused by climatic factors, as well as reducing manufacturing and distribution costs through the use of monomaterial and optimization of the pack volume (in particular for cold-chain distribution).

The supply chain
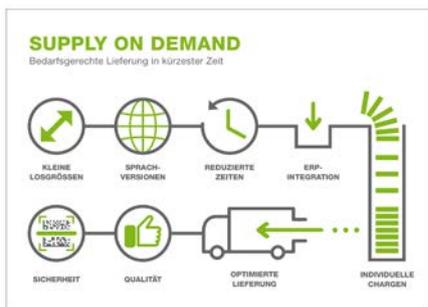
Rondo supports pharmaceutical manufacturers in the handling of small lot sizes with its Supply-on-Demand solution. The concept of demand-driven supply covers the supply of small delivery quantities of consistently high quality within short delivery times of less than one week. Integration of security features as well as inline serialization - with accurate batch-based delivery for EU codes - are also possible.

Thanks to the workflow link (Rondo/pharma company), the application of new technologies for printing and processing, plus harmonization of quality processes (incoming goods inspection taken on by Rondo), turn-around times and re-procurements costs can be substantially reduced for customers. Storage on the customer's premises is eliminated; the goods are brought directly to the production line.

Data and processes
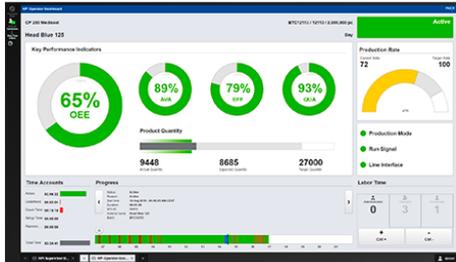
For efficient pharmaceutical manufacturing, it is essential to constantly monitor operating data. Werum's PAS-X KPI is a lean, standalone software product for live monitoring of production and packaging lines to improve the shop floor performance of pharma and biotech facilities. PAS-X KPI provides real-time key performance indicators (KPI) to optimize processes or equipment.

interpack exhibits

At interpack 2017 **Dividella** is exhibiting its highly flexible **NeoTOP toploading machine**. This is equipped with a manual inserter module and is ideal for processing small lot sizes. For the greatest possible filling flexibility Dividella has opted for the collaborative YuMi robot from ABB. This fills the topload folding boxes with syringes, pens and other products, depending on the order. The **syringe infeed** to the machine is by **Fargo Automation**. The system fills boxes (100% monomaterial) which are provided by **Rondo** with a **China code**. The boxes and flutes, which are fed in flat, are erected and glued inline; the flutes are perfectly aligned with the delicate products and ensure optimal product protection. In addition, variable data such as the personalized patient's name can be printed inline. The China code is checked by an integrated **Seidenader Track&Trace system**.

At interpack, the **NeoTOP x** is controlled and monitored remotely via a **Smart Device**. With the aid of the device, multiple production units can be scheduled, co-ordinated and controlled in parallel. The solution, which is based on HTLM 5, is compatible with all systems and enables customers to use the mobile terminal of their choice.

A shift from reactive maintenance to predictive maintenance: at interpack, **Dividella** is presenting a prototype for **Condition Monitoring & Predictive Analytics**. This not only captures data in real time but also interprets it appropriately by automatically checking against patterns which indicate a fault. To this end, Dividella applies concepts such as data mining, data modelling or machine learning.

Mediseal is presenting its new **BE Blister Series**. This modular machine can be optimally matched to individual requirements as a customized variant. Thanks to shorter change-over and cleaning times it features high machine availability. To achieve this, the number of parts involved in a change-over has been significantly reduced. Furthermore, fewer settings are required on the part of the operator, who can perform his or her tasks more quickly thanks to the improved accessibility of all areas. This also affects cleaning times, which have been further shortened thanks to an ingenious cleaning concept (including rounded corners and the comprehensive elimination of dirt traps). The machine is therefore also ideally suitable for many different formats and small lot sizes.

Mediseal is presenting for the first time its **P5000 high-speed cartoner**, which can fill 500 cartons per minute. Its extensive format range enables it to handle dimensions up to 150 x 110 x 200 mm. The P5000 can be seen in line with **Mediseal's CP600 high-speed blister machine**. The two machines are perfectly matched and guarantee reliable production output.

Rondo is introducing a new supply chain solution for small lot sizes: **Supply on Demand**. The concept of demand-driven supply of secondary packaging covers the supply of small delivery quantities of consistently high quality within short delivery times of less than one week. Visitors can engage in one-to-one discussions with Rondo about the possibilities of the new Supply on Demand solution for their individual requirements.

Seidenader is presenting for the first time its new **DE.SY.RE De-Nester/Re-Nester solution for "non-glass-to-glass-contact" handling during the complete inspection process**. Fast, highly accurate Delta robots take over the filling of the inspection machine and subsequent removal of the containers. In connection with an inspection machine, Seidenader offers a comprehensive turnkey solution where up to 600 containers per minute can be infed, inspected and removed, with great precision and without glass-to-glass contact.

Werum's PAS-X KPI is a streamlined software product for **real time monitoring of production and packaging lines**, in order to increase production output of Pharma and biotech companies. For this purpose, PAS-X KPI provides key performance indicators (KPIs), on the basis of which processes and equipment can be optimized. It is the only KPI/OEE tool developed specifically for the pharmaceutical and biopharmaceutical industry. Werum's PAS-X KPI is browser-based and supports various modes of implementation such as on-site installation and Enterprise Cloud.

<u>Further information</u>

Dividella:

- http://www.dividella.ch/en/machines/neotop-x/

Mediseal:

- "For more productive time: Mediseal presents new BE Blister Series at interpack", press release, 21.04.2017
- http://www.blister-expert.com
- "Mediseal P5000: Say HI to High-Speed-Packaging", press release, 22.03.2017

Rondo:

- "Folding boxes on demand: Rondo's Supply on Demand solution enables small lot sizes to be handled efficiently", press release, 06.04.2017

Werum:

- http://www.werum.com/en/it-solutions/kpioee

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Picture material

Dividella NeoTOP x – highly flexible TopLoad packaging machine for processing small to medium lot sizes, equipped with a collaborative robot for the greatest possible filling flexibility.

Mediseal BE Blister Series: "More productive time and joy in production "- by applying this watchword, Mediseal has broken new ground in designing the new Blister Series - in development, design and control concept.


Mediseal BE Blister Series: The entire front of the machine opens, for optimal change-overs, cleaning and maintenance. When it is open, neither pillars nor supports obstruct access to the machine.

Mediseal BE Blister Series: The circulating blue line maps the flow of product through the machine and as it narrows it symbolizes the merging of the product. In the event of faults, it serves as an illuminated display element to provide rapid assistance to the operator.

Always the highest quality - and always at full speed: the new Mediseal P5000 high-speed cartoner
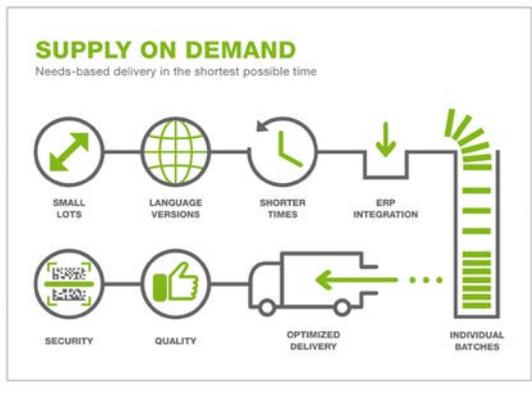
Rondo's Supply on Demand solution - Needs-based delivery in the shortest possible time

PAS-X KPI for real-time monitoring of production and packaging installations

These images and texts can be downloaded at:

http://www.interpack.medipak-systems.com/en/press-center

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