

Industry-specific solutions

Pharmaceutical and cosmetics industry:
horizontal cartoner for separating folding
cardboard boxes

In action

MAS pneumatic muscle

Benefits

- Higher cycle rates with simplified design
- Less expensive construction with fewer components in the system

Fast separator

Packaging pharmaceutical products is MediSeal's core business. A pneumatic muscle from Festo was integrated into the P1600 cartoner in order to optimise functions – with the result that mechanical separation of folding cardboard boxes is more reliable, simpler and even faster.

■ The call for higher cycle rates can be also heard in the pharmaceuticals and cosmetics industry. And MediSeal, manufacturers of packaging machines for blister packs and cartoners, is a conscientious listener. MediSeal has succeeded in creating an ideal balance between performance, space requirements and flexibility with its P1600 and P3000 cartoner family. Due to the synchronous mode of operation, the horizontal cartoners not only require minimal floor space, they only need a few sizing parts, which can also be quickly interchanged in a modular fashion without the use of tools.

Separation using muscle power

Without going into details regarding the advantages of the cartoner: The feed system for the individual cartons is a pneumatic highlight of the modern design with flexibly adjustable cycle time. In this respect, the P1600 underscores its high output capacity of 150 folding cardboard boxes per minute.

From a design standpoint it's interesting to mention that the module is significantly simplified, yet its performance is increased as well, through the use of Festo's MAS pneumatic muscle. The pull-type cylinder moves faster in the carton



Before: complicated carton separating with cam disk.



After: fast carton separation with MAS pneumatic muscle.

separation process than the previously used design with a cam disc. Up to 300 cycles per minute are possible with this application. The finger which releases the pre-cut carton components moves several millimetres. This very small movement, the heavy load and the high speed represent an ideal application for the dynamic MAS cylinder: a different type of drive which, by means of its function, reduces the number of modules used for carton separation, and thus making it less expensive.

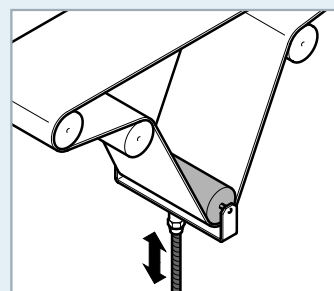
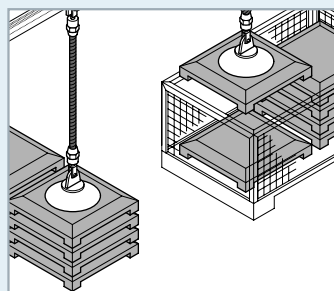
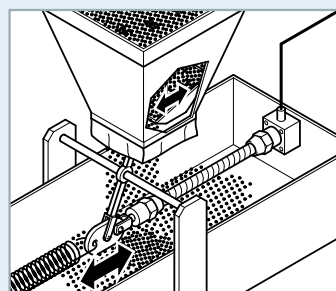
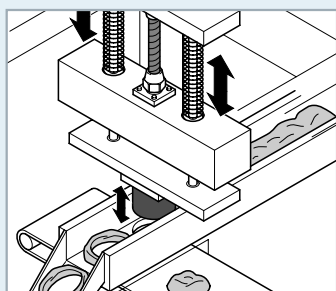


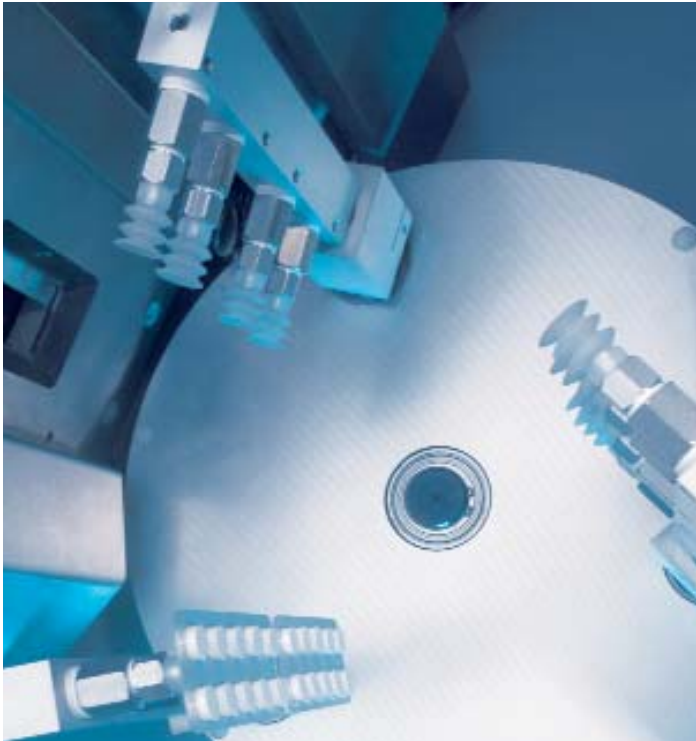
Technical data

Fluidic muscle

- Sizes: 10, 20 and 40 mm
- Nominal lengths: 40 to 9000 mm
- Lifting force: 0 to 6000 N
- High dynamics
- No stick-slip effect
- Robust design

One muscle – many possible applications





Mechatronics in packaging systems

Interdisciplinary interaction amongst mechanical, electronic and IT systems is now the basis of all technical innovation. Mechatronic systems increase flexibility significantly, thus making shorter setup times possible (format changeover times) which considerably increase the overall efficiency of packaging systems. At the same time, "forgiveness" is also made possible, i.e. adaptation to various packaging materials.

Mechatronics in the cartoner

A typical mechatronic task in the cartoner is represented by the decentralised servo motor drive concept, which is activated and controlled by a virtual axis. In terms of structure, all of the functional steps of the moving mechanical components are implemented to a great extent by means of servo technology.

When the cartons are sealed with hot glue, a further refinement is taken advantage of, because several drive and functional movements are coupled at a clock cycle of 400 ms. In order to assure that the glue sets properly, the carton is not only pressed closed, it's subjected to a second pressing cycle as well. During the resting phase,

the carton is actually sealed by a stationary pusher. In the meantime the slide, which has just accompanied a carton, is returned to its initial position. An additional pusher is located on the slide, which conclusively seals and fixes the glue flap. At the same time, a driver located behind the cams of the carton conveyor belt is swivelled and drives the slide through the next movement over a distance of approximately 120 mm. ■

MediSeal

Products

Contact

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