The continuous motion cartoners

Individual concepts for every packaging need
Continuous motion cartoners for every requirement

A cartoner must process different types of blisters and carton qualities with utmost reliability. Must be perfectly attuned to the output of upstream machines, and fit seamlessly into a productive, integrated line. As is the case with the continuous motion cartoners from Uhlmann.
The Uhlmann portfolio of continuous motion cartoners comprises four models: Cartoners C2156, C2206, C2305 and C2504. The construction of each individual machine complies with Uhlmann’s guiding pharmaceutical packaging principals and thus guarantees top quality packaging: GMP-compliant design, strict separation of functional parts and drive elements as well as absolute hygiene due to the use of V2A stainless steel and anodized aluminum. The modular assembly means that technical upgrading of individual stations is possible at all times while a wide choice of feeding systems and accessories allows customized machine configurations to meet every packaging need. Moreover, all the cartoners can be fitted with inspection and coding systems as well as an end-to-end Track & Trace system solution – for maximum pharmaceutical reliability.

Fast format changeovers are another plus factor of the continuous motion cartoners. All format data is stored; with models C2305 and C2504 practically all stations and parameters are automatically adjusted at the touch of a button. This saves time, minimizes sources of error and maximizes process reliability. Operation via a touchscreen also promotes correct handling. The password-protected user interface is intuitively understood and easy to operate.
The continuous cartoners at a glance

Cartoners C 2156 and C 2206
Flexible for small and medium-sized batches

Cartoners C 2156 and C 2206 are compact and multi-functional. These 6”-pitch cartoners are ideal for the highly flexible packaging of small and medium-sized batches. Cartoner C 2156 packages up to 150 cartons/minute; Cartoner C 2206 up to 200 cartons/minute. Both are also extremely variable in their packaging diversity. In terms of blisters, they are ideal for the packaging of large-sized formats. However, horizontal product transport means that they can also package bottles, vials and bags as well as supplementary utensils and inserts.
Cartoners C 2305 and C 2504
Ideal for high-speed packaging

Cartoners C 2305 and C 2504 are the ideal machines for the high-speed and bulk packaging processes of international and local pharmaceutical companies, generics manufacturers and major contract packagers. Cartoner C 2305 has a maximum output of 300 cartons/minute. Operating with a 4"-pitch, C 2504 processes a maximum of 500 cartons/minute – which qualifies it as the world’s fastest cartoner. These two cartoner models are also extremely versatile when it comes to filling cartons – and incredibly fast.
**Perfected technology**

Every single cartoner meets the demands of pharmaceutical manufacturers for uncompromising reliability, a wide range of variability and future viability.

**Blister transfer**

A vacuum conveyor ensures consistently gentle transfer of the blisters from the blister machine to the cartoner. The configuration of the blister machine and cartoner is of no consequence – suitable solutions are available for all alternatives. The infeed capacity ranges up to 1,300 blisters/minute.

**Carton magazine**

The maintenance-free carton magazine holds approximately 1,600 cartons. In each of the continuous motion cartoner models, it can be raised in height to ease access for filling and cleaning purposes.
**Carton feeder**

The patented feeding systems TwinStar and TriStar permit the handling of practically every quality of carton material. They also save time, minimize adjustments and eliminate unnecessary start-up waste when formats are changed. These feeders use multiple planetary motion, a vacuum pick-up and a pre-break function allowing 140-degree overbreak for positive carton erection before placing the cartons into the continuous motion transport chain. This handling is ideal for blanks of difficult geometry or critical quality, such as old stock, poorly scored, manually sized, or recycled carton material. The high-speed Cartoners C 2305 and C 2504 additionally allow individual adjustment of the overbreak angle.

**Carton transport**

All the continuous motion cartoners benefit from a transport system that carefully carries the cartons forward. Scratching and scuffing in the machine is avoided. Four continuous motion floating guide fingers – two at either outer end – hold each carton perfectly straight. The upper cover rail forms the guide and keeps the cartons at right angles. Two carton chains run in ducts enclosed on either side by V2A stainless steel panels to prevent dust accumulation.

**Uhlmann Customer Service**

**Maintenance**

Smooth production over many years is not a matter of chance, but the result of targeted maintenance. Consequently, Uhlmann offers tailored maintenance agreements suited to specific production processes and machinery. The objective is to recognize wear and tear in advance and to guarantee maximum efficiency of the production lines. The packages combining preventive and proactive maintenance reduce downtimes and improve productivity.
**Diverse feeding systems**

Whether solid or liquid dose blisters, bottles, different types of information material or utensils such as pipettes or measuring spoons – it makes no difference what needs to be packaged in cartons because Uhlmann has a selection of feeding systems suitable for universal and reliable packaging.

**Leaflet folder**

All common types of sheet- or roll-fed leaflet folders can be integrated into the continuous motion cartoners. Cartoners C 2305 and C 2504 include a special feature that allows the leaflet folder to be pulled forward for optimum accessibility for servicing and product changeovers. Enclosure of the leaflet folder behind protective doors significantly reduces the sound level of the two high-speed cartoners.

**Product loading**

Product loading is carried out by an independent, self-contained module. The patented Uhlmann solution sets standards in terms of precision and reliability. It has proven its worth in over one thousand practical applications. The product loading system is simply flange-mounted on the spar of the product chain using two bolts. The 13 loading pushers with plug-in heads are centrally adjustable. They slide on circular guide rods and guarantee trouble-free product loading. The product loading function of Cartoners C 2305 and C 2504 automatically adjusts to different stack heights.
Seamless traceability: Track & Trace

Track & Trace by Uhlmann can be integrated into a machine from the start or implemented as an upgrade at a later stage. The system solution allows the seamless traceability of pharmaceutical products. Every packaging unit – even each blister card – can be marked with a unique, serialized code. The code refers to a data record in the Uhlmann tracking database where all relevant production parameters and the correlation of smaller to larger packaging units can be accessed.

As well as providing protection against counterfeiting and ensuring product safety, Track & Trace also increases the reliability and efficiency of the packaging process itself. The codes prevent any mix up of unprinted blisters and bottles, allow the subsequent checking of production data, and ease the coordination of possible product recalls.
**Carton closure**

The oscillating motion of the closing station ensures reliable closure of the cartons. The guide bars on models C 2156 and C 2206 are adjusted using a digital display; on Cartoner C 2305 and C 2504 this function is automatic. Closure is carried out in several stages and is fully servo-driven on the continuous motion Cartoners C 2305 and C 2504. The carton flaps are folded accurately into place without friction for hot-melt closure.

**Uhlmann Customer Service**

**24h Service**

Uhlmann machines stand for cutting-edge technology. However, if the worst comes to the worst, prompt and reliable assistance is on hand. The 24h Service hotline is available 365 days a year. 90 percent of all callers can be helped, e.g. through remote access to the machine control system. Otherwise a specialist attends to the problem on site the following workday.
The range of accessories

The continuous motion cartoners offer the same consistent precision when packaging blisters containing tablets or liquid products, bottles straight into cartons, or vials, bags, sachets and other types of products. This diversity is reflected in an extensive range of accessories and feeding systems. Depending on customer requirements, the machines are equipped with appropriate components for product infeed and the feeding of inserts (e.g. pipettes, measuring spoons, information material, etc.).

Accumulating tables

to separate and buffer products between upstream and downstream machines.

Feeding and robot systems

for spoons, pipettes, pillow packs, pharmaceutical utensils.

Leaflet folders

all common folding systems can be integrated.

Slide feeder

for the reliable handling of multi-layer, glued booklets.

Rotary feeding system

for the reliable processing of folded or glued leaflets.

Integrated laser or inkjet marking systems

for inline marking with variable data.

Embossing equipment

for visual marking of the carton tuck-in flap. Blind and color embossing options available.

Labeling systems

for the application of labels for different purposes: e.g. for identification or as tamper-evident seal.

Semi and fully automatic storage systems

for booklets or prefolded/glued leaflets.
The all-rounders also package bottles

The continuous motion cartoners not only package blisters but also bottles straight into cartons. As well as additional pharmaceutical utensils and inserts such as measuring spoons, pipettes and different types of information material. Always with consistent precision.

Cartoner C 2206 is ideal for the packaging of small to medium-sized batches – up to 200 bottles per minute are loaded into cartons. Bottles 30 to 70 mm in diameter and 60 to 195 mm in height are processed.

Cartoner C 2305 handles up to 300 bottles per minute with bottle diameters ranging from 16 to 65 mm and bottle heights from 37 to 150 mm.

Bottle transport

A feed conveyor is responsible for the gentle transfer of the upright bottles to the cartoner. Linked to an upstream machine, the infeed speed can be adjusted as required. Alternatively, the bottles are fed into the cartoner from an accumulating table. An optional sensor monitors the correct position of the bottles and automatically removes any that are not upright.

The feeding principle using a feed screw allows the handling of round glass or plastic bottles as well as ones of special shape.
Cartoner C 2305 packages up to 300 bottles per minute.

**Bottle feeding system**

The feed screw takes over the upright bottles and lays them separately in the product transport of the cartoner. The feeding system reliably handles round glass or plastic bottles and is also suitable for special shapes. The only prerequisite is that the containers are free-standing and can be accumulated.

All the drives of the feeding system are servo-regulated; the adjustment settings are reproducible. A double or triple bottle loading function is possible. In this case, two or three parallel bottles are transferred to the product chain and loaded into cartons.

**Product transport**

Again each bottle position is monitored and, in this case, upright bottles are rejected from the packaging process.
**Carton closure**

All common types of carton closure are possible with the continuous motion cartoners.

Various options of carton closure are available: simple tuck-in, hot-melt or alternative solutions for added safety including a fourth flap or using a combination. Moreover, sleeves can be filled or cartons loaded using the side-loading, top-opening principle.
## Cartoners C 2156 and C 2206, C 2305 and C 2504

### Technical data at a glance

<table>
<thead>
<tr>
<th></th>
<th>C 2156/C 2206</th>
<th>C 2305/C 2504</th>
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<tbody>
<tr>
<td><strong>Output</strong> [1/min]</td>
<td>max. 150 /200 cartons</td>
<td>max. 300/500 cartons</td>
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<tr>
<td><strong>Pitch</strong></td>
<td>6&quot;</td>
<td>5”/4”</td>
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<tr>
<td><strong>Carton size</strong></td>
<td></td>
<td></td>
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<tr>
<td>Width [A]</td>
<td>max. 130 mm</td>
<td>max. 105/80 mm</td>
</tr>
<tr>
<td>Height [B]</td>
<td>max. 100 mm</td>
<td>max. 105/90 mm</td>
</tr>
<tr>
<td>Length [H]</td>
<td>max. 250 mm</td>
<td>max. 155 mm</td>
</tr>
<tr>
<td>Height blister stack</td>
<td>max. 95 mm</td>
<td>max. 100 mm/85 mm</td>
</tr>
<tr>
<td><strong>Operating mode</strong></td>
<td>continuous</td>
<td>continuous</td>
</tr>
<tr>
<td><strong>Types of closure</strong></td>
<td>tuck-in and hot-melt</td>
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</tr>
<tr>
<td><strong>Space required</strong></td>
<td>Machine width</td>
<td>approx. 2,140 mm</td>
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<tr>
<td></td>
<td>approx. 1,900 mm</td>
<td>approx. 1,960 mm</td>
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<tr>
<td></td>
<td>approx. 7,100 mm (depending on product)</td>
<td>approx. 5,750 mm (depending on product)</td>
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<tr>
<td></td>
<td>approx. 4,500 kg</td>
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<tr>
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