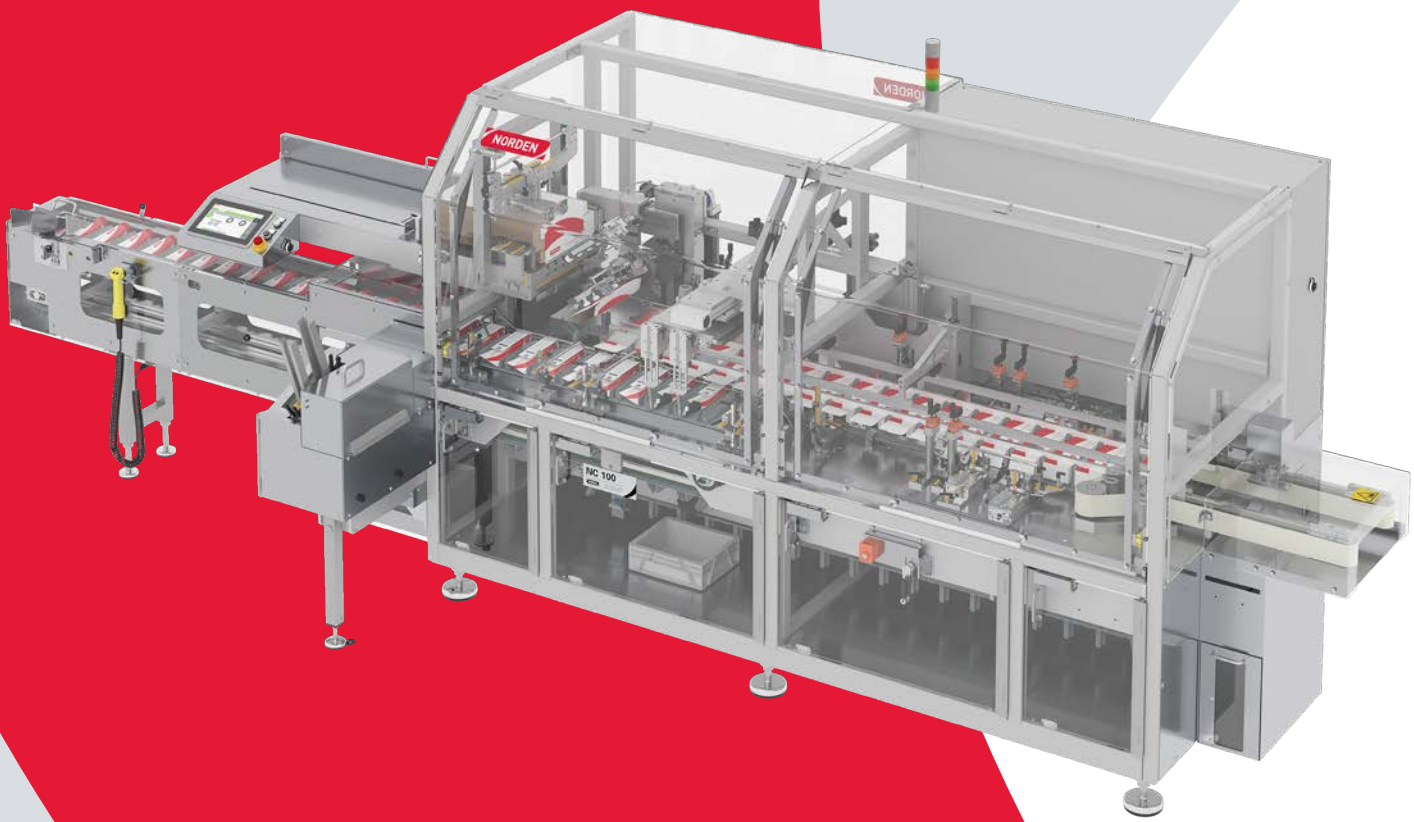
NORDEN

a **coesia** company

NC 100



Well-equipped to be your long term partner

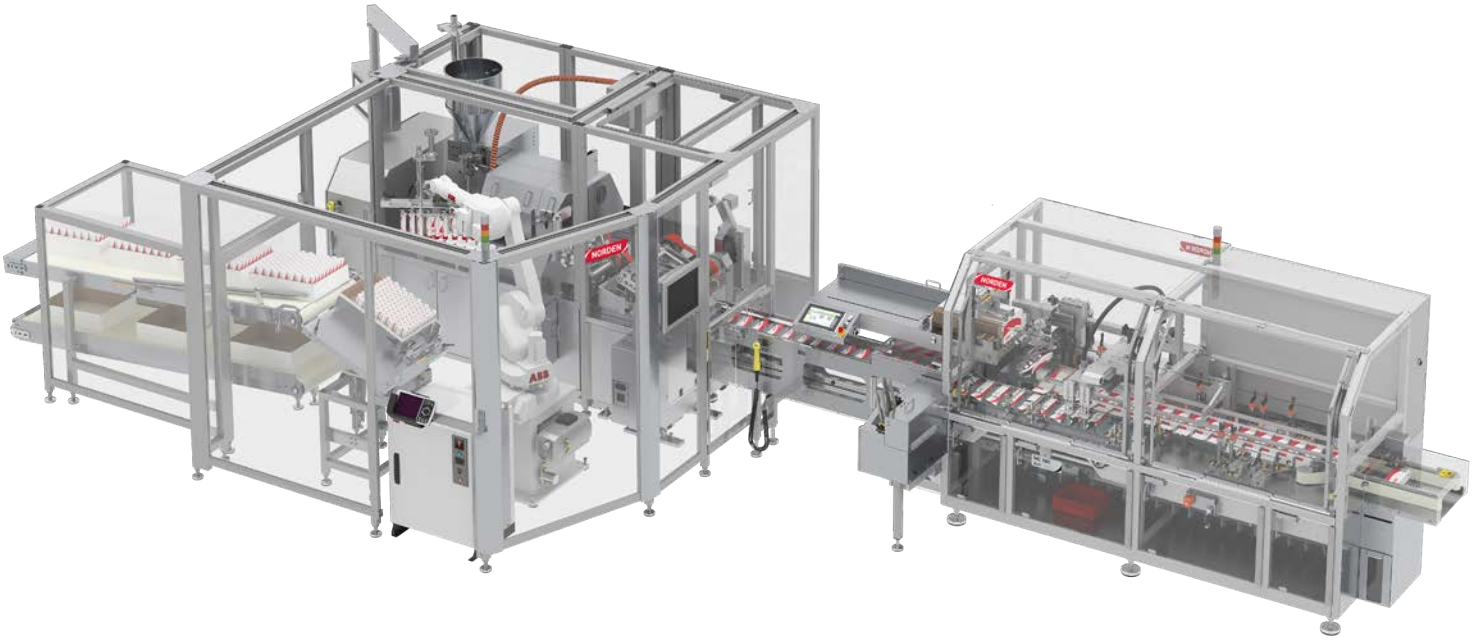
For more than 90 years Norden has focused exclusively on tubes. Many innovations have been introduced along the way, which has established Norden Machinery as the market leader in advanced Tube Filling systems. New innovations give our customers a chance to gain market share, while sustaining a safe and reliable production.

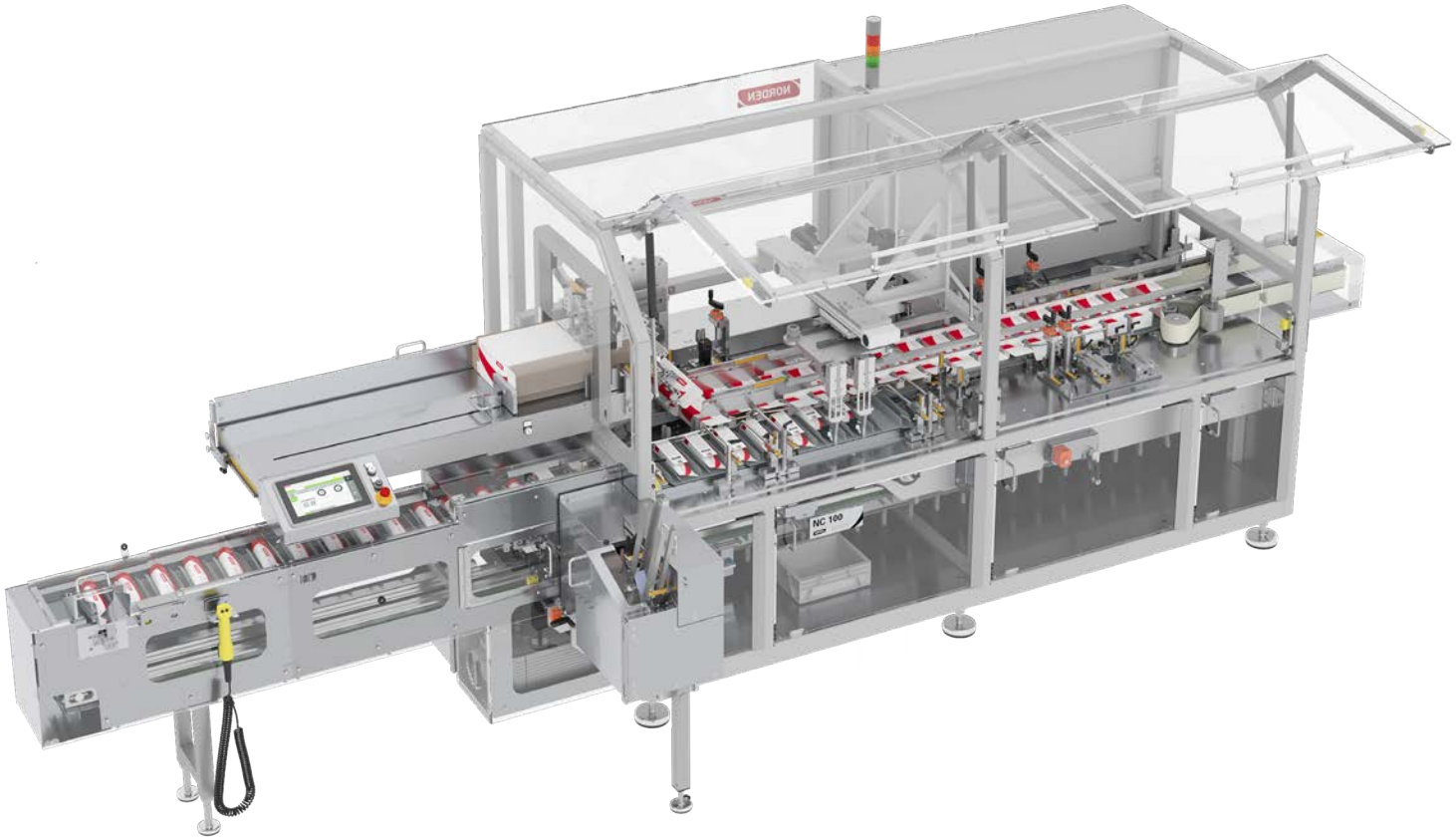
While providing evolving functionality of your filling systems, Norden remains in close relationship with your business. We are here to stay and well-equipped to be your long term partner. Get ready to sharpen your competitive edge with Norden.

NC 100 - Packaging made perfect with automated precision

The NC 100 cartoner is a highly efficient machine used in packaging to automate the process of erecting, filling and closing cartons. Using the NC 100 cartoner brings a variety of benefits to your production line, particularly in industries like pharmaceuticals, cosmetics, food and consumer goods. Here are some of the key advantages:

- Enhanced flexibility - Handles carton and leaflet formats to suit your tubes.
- Production speed up to 100 cartons per minute.
- Super-fast changeover.
- Pharma packaging: mechanical design and software – all built to last in the most demanding production environments
- Leading or trailing edge carton erection offering maximum flexibility for art on design and print
- Excellent ergonomics for loading of carton magazine.
- Main drives by servomotors





Fast and easy change overs - Ensuring best user experience

Like all Norden machines, the NC 100 is built to deliver. Producing at a rate of up to 100 pcs per minute and maintaining up to 50 pre-programmed formats that are only a click away.
By designing a machine that is easy to use and has comfortable, ergonomic material loading, we have taken care to take operators into account. All areas of the machine are easily accessible. With the NC 100, you have the option of adding more autonomy during change overs or sticking with the standard automatization package.

The moment you're ready to start

Our goal at Norden is to help you keep your machine operating at its best for the duration of its lifecycle. Starting your tube filling/cartoning system is just the first step in Norden's dedication to you. From installation and commissioning to production support, training, troubleshooting, and machine audits, we help our clients.

Design of the carton

The NC 100 provides a variety of carton closure solutions. Flaps can be tucked in either straight or inverted.
The flaps are folded, closed, and adhered to one another for hot melt-closing (optional). A robust, dependable, and tamper-evident carton seal is produced when cartons are closed with glue.
To provide tamper evidence, tuck-in cartons can also be glued, as can cartons with three or four flaps.

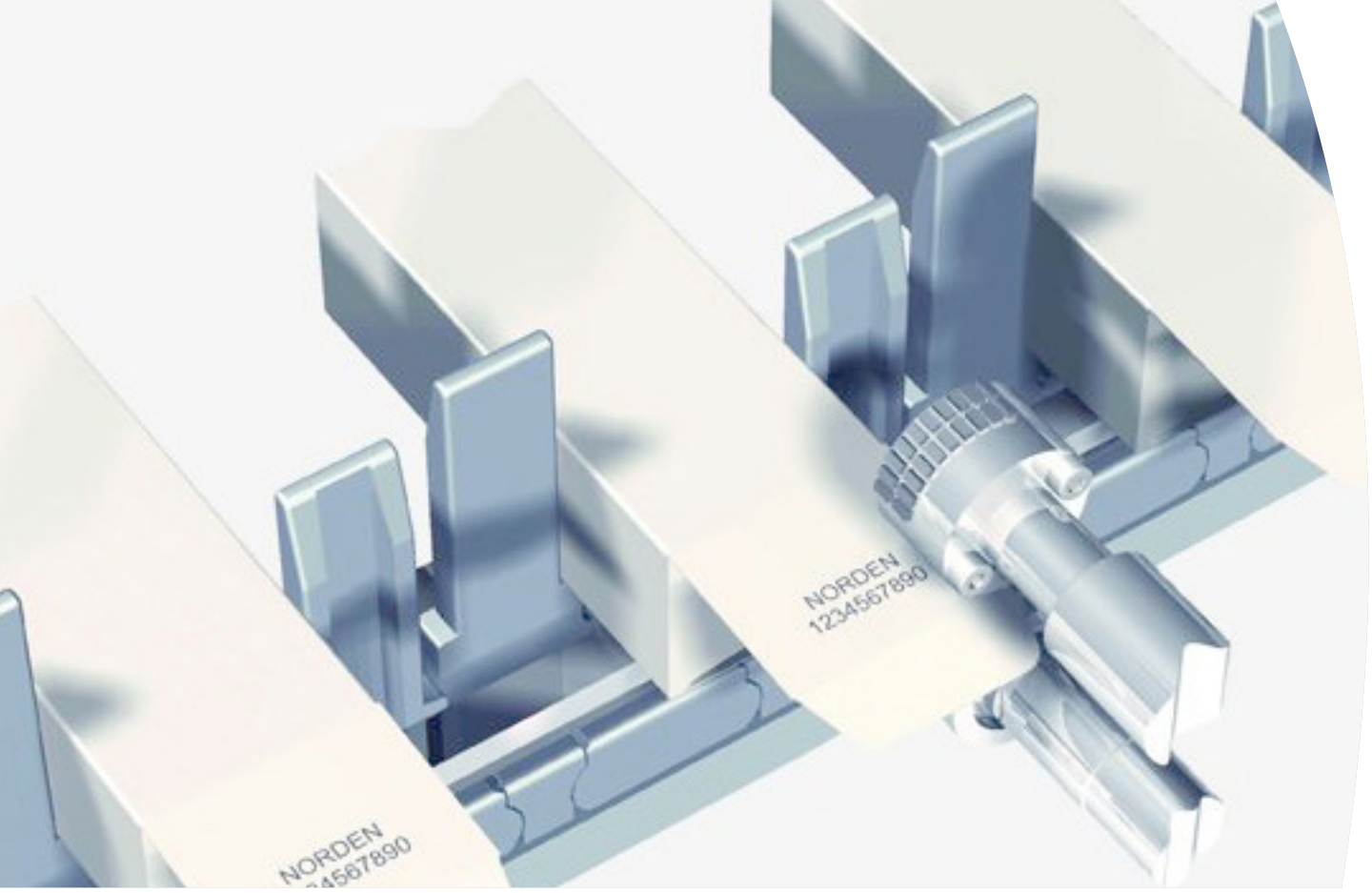
The design of a carton is important for several key reasons, combining functionality, marketing and sustainability.

Choose your desired closing system

Straight tuck–in cartons

Reverse tuck–in cartons

Hot melt cartons



Coding on cartons

Inkjet as well as CO_2 laser

The cartoning machine may use embossed letters and/or numbers to code the carton end flaps. Continuous marking or drop-on-demand are used for inkjet printing or ink embossing. Regardless of the carton's material, the inkjet will function in the same manner and stick to surfaces that are colored or white.

We utilize a CO_2-laser for laser marking.The technology is named after the process of producing light, which involves heating CO_2 gas to produce light with a wave length that is visible to the human eye.

Character height, font, number of characters, and marking data are all things your Norden sales contact will need to know.

Vision

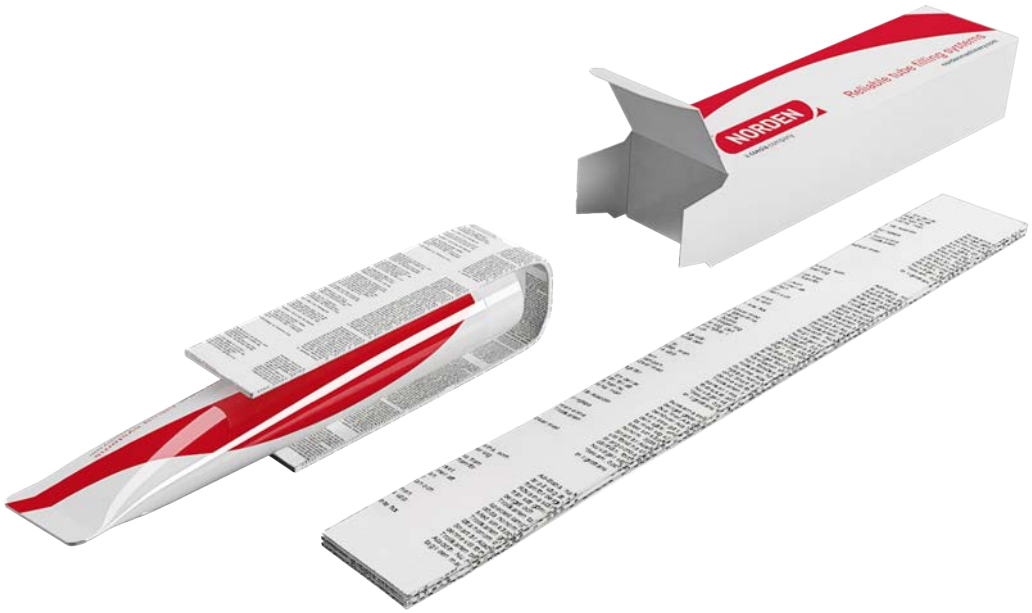
Monitoring production using OCR/OCV, Pattern recognition or 1D/2D barcode scanning.

In Norden machines, the printed characters can be evaluated against the expected text through an OCR/OCV application. Pattern recognition is utilized forimage comparisons, particularly when individual letters are not distinct, such as in Arabic and Hebrew, where the marking is processed as an image instead oftext.

Example of 1D Pharma code.

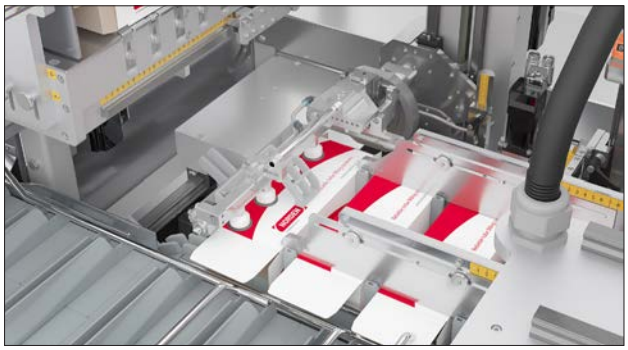
Leaflet insertion

The NC 100 cartoner can be fitted with leaflet insertion machinery to place instruction leaflets into cartons by incorporating an additional module onto the cartoner.
The leaflet is a lightweight paper sheet that contains safety information about the product and other essential details for the consumer. It is placed alongside the tube and carton, wrapping around the tube when it is put into the carton. The machine accommodates both unfolded and prefolded leaflets.



The cartoning erecting arm picks the carton from the magazine.

The carton is erected.



The erected carton is placed in the carton chain.

Tubes and leaflets (optional) are pushed into the cartons.

Carton flaps are folded to close the cartons.

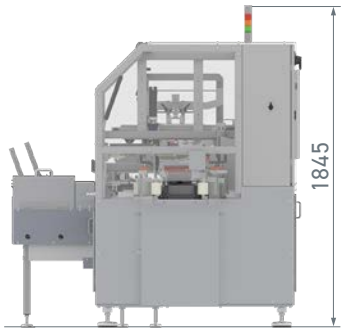
Control at the tips of your fingers

The NC 100 features a 10-inch color touch screen HMI. The operator panel features the Easy Ware II software provided by Norden. This control system is developed to maximize the machine's efficiency by continuously monitoring manufacturing statistics and equipment alerts.

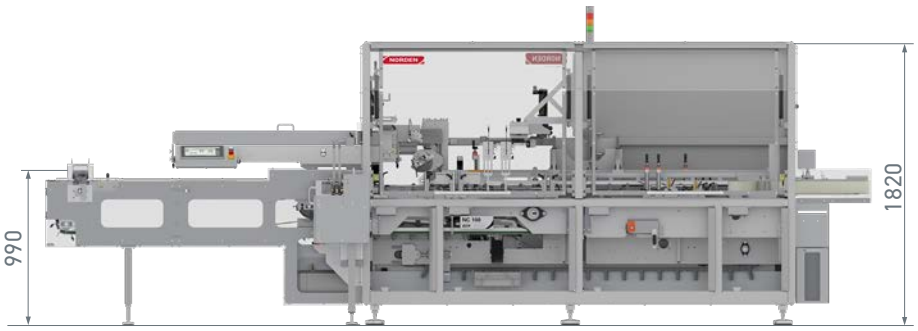
The contemporary interface can be managed with only a few clicks, making it a true game-changer for your manufacturing system. With Norden, you benefit from an enhanced lifecycle, providing the lowest cost per unit produced in yourtube filling system. The control system enables control of the manufacturing process, with features such as individual logins and Audit Trail.

Machine layout

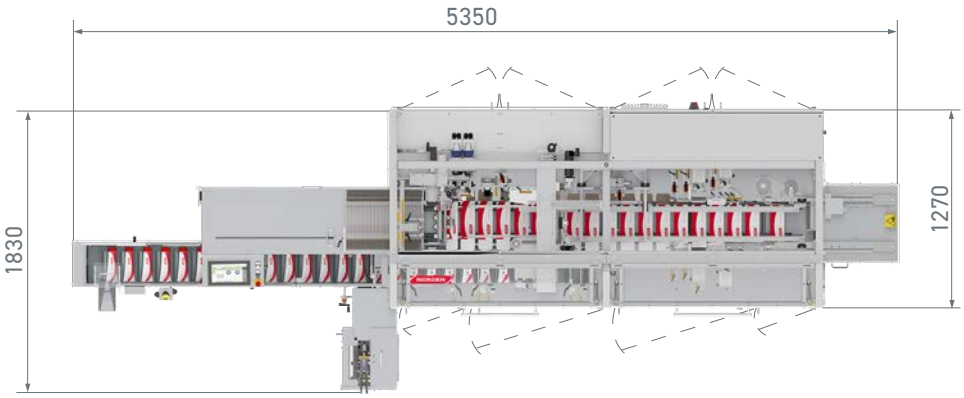
Side view of NC 100 (mm)



Front view of NC 100 (mm)

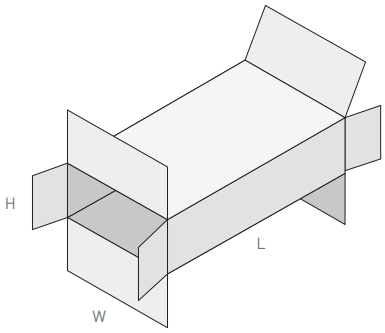


Top view of NC 100 (mm)



NC 100 format range

NC 100 Carton sizes (mm)	Lenght	Width	Height
Maximum	240 mm	90 mm	55 mm
Minimum with 3 carton chains	70 mm	20 mm	15 mm
(Minimum with 4 carton chains)	105 mm	20 mm	15 mm
Max product lenght	230 mm		



Production capacity[1] (max cartons/min)	100
Power consumption (max,kW)	3 kW
Air consumption:	30 Nm^3/h
Compressed Air pressure (bar)	4-6 bar

Shipping specifications	
Net weight, approx.	2600 kg
Gross weight (case), approx.	2750 kg
Volume, approx.	10 m^3

1. Depending on tube filler capacity (output varies with carton size, carton quality, carton design and product).

Standard configuration

Basic Machine

- NC 100 is an indexing cartoning machine working with 4,5 -inch pitch.
- The machine built on rigid substantial aluminum plates and painted steel profiles.
- Balcony type design for easy cleaning and access.
- Doors in polycarbonate (PC) on front and back side for easy access to the machine. Doors below machine table in polycarbonate (PC).
- Electrical cabinet is integrated onto the machine and is painted in RAL7042, stainless steel look.
- Carton magazine and machine table at ergonomic height.
- Main drives by servomotors, type Schneider Electric.
- Product pockets return part completely covered and supported by guides.
- Max production speed: 100 cartons/minute.

Standard equipment - Automatic servo motor

- Automatic servo motor adjustment of:
- Carton width - Product pocket - Tube and leaflet position
- Manual adjustment of carton length, with counter.
- Size parts position identified with numbered references.
- Electrical synchronization with tube filling machine.
- One set of size parts for one product and one carton size.
- One “first aid” spare parts kit.
- Adjustable carton magazine with 1.0 m loading area and low-level indication.
- Dual-arm carton pick and erect system with pre-break function.
- Carton detection system to identify missing and extra-cartons.
- Standard four-chain carton system.
- Product rejection system when the carton is missing.
- Pneumatic product pusher with overload clutch.
- Overload protection system with automatic machine stop.
- Reverse tuck-in carton closing system.
- Belt-driven carton discharge system.
- Digital machine manual on USB and access to MyNorden portal.
- CE-compliant machine accordingto Machinery Directive 2006/42-EU and EN 60204-1.

Control system standard function

- Norden EasyWare II, control system with Schneider Electric PacDrive 3.
- 10” color touch screen operator panel.
- Servo motion and logic controlled from the same system.
- All doors electrically interlocked.
- Emergency stop and overload supervision system.
- UPS back-up for main controller.
- Alarm system with buzzer and 3-color light:
- Red– Machine fault(stop)
- Green– Running /Jogging mode
- Yellow– Warning (low carton level)
- Jogging device (5 safety modes) for access with doors open.
- Electrical format changeovers from the operator panel.
- Customizable machine parameters from the operator panel.
- Production statistics (OEE) and line status overview.
- 50 programmable format tables.
- Minimum 16 programmable functions for input (XGP) and 16 for output (YGP).
- 7 operator panel logins with different access levels.
- Emergency stop, cycle stop and fault tracking.
- “No product– no carton” function.
- Machine stops when compressed air pressure is too low.

Coesia Group in the world

COESIA is a group of innovation-based industrial and packaging solutions companies operating globally, headquartered in Bologna, Italy.

Coesia's companies are leaders in the sectors of:

- **Advanced automated machinery**
- **Industrial process solutions**
- **High-performance transmissions**

Coesia's customers are leading players in a broad range of industries, including Consumer Goods, Tobacco, Healthcare, Aerospace, Racing & Automotive and Electronics.

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