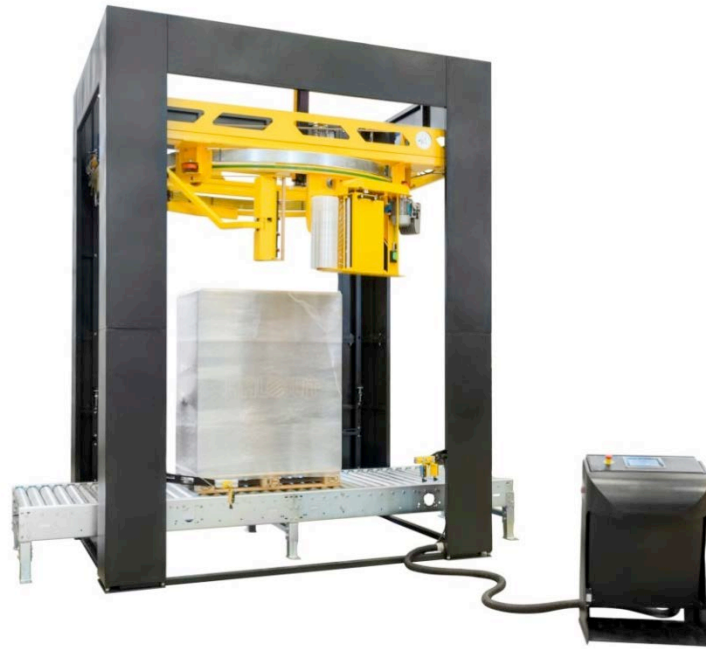


WrapBOX





WrapBOX - Innovation in a new category

WrapBOX represents a new kind of innovation from Haloila, bringing the superior ring technology to the low-end capacity automatic stretch wrapping machines.

The foundation of the design is the field proven high quality technology and over 30 years of manufacturing experience.

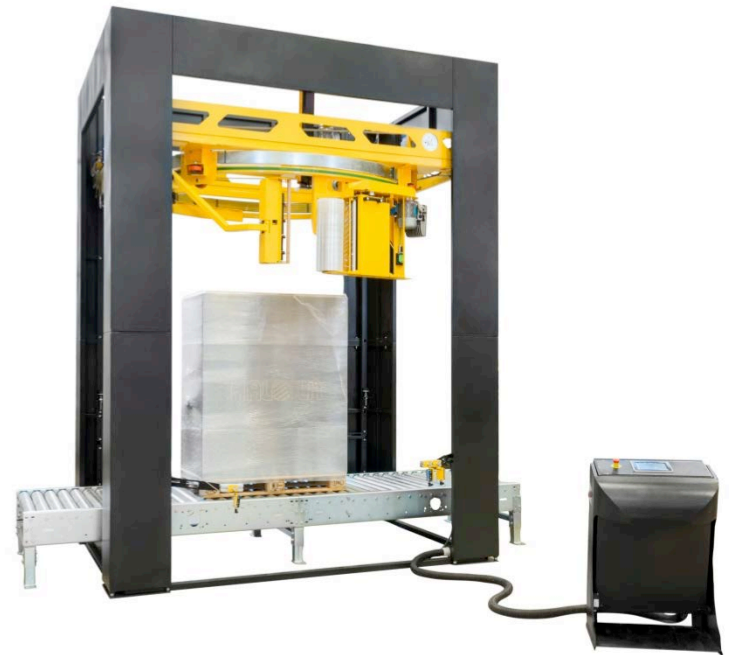
WrapBOX is targeted especially for the customers with low-end capacity packaging lines who have their focus on...

Total cost of ownership

- Cost-effective to acquire
- Reliable to operate
- Low maintenance demand

Improved packaging quality

- Pallet and products not moving while wrapping
- Adjustable wrapping programs
- Optimising for different size pallets and products
- Consistent Pre-stretch
- Adjustable film lay-on force





WrapBOX – Key benefits

SECURE INVESTMENT

- Based on Haloila know-how and quality
- Compact size fits any production line layout
- Economical to acquire and install

VERSATILE USABILITY

- Serves as a part of an automatic packaging line, following palletiser, strapper etc.
- Works as a single wrapping station on its' own
- Plug-and-Play wrapping machine to an existing conveyor line

OPERATING CONVENIENCE

- Large 7" touch screen HMI
- Visual and guiding functions
- 4 different wrapping programs
- Easy Load film carriage
- **PLC Lentze**

ECONOMICAL MAINTENANCE

- High reliability due to the simple structure
- Electronics only, no pneumatics
- Motors attached to the ring which can be lowered for maintenance
- Lifting belts used instead of chains

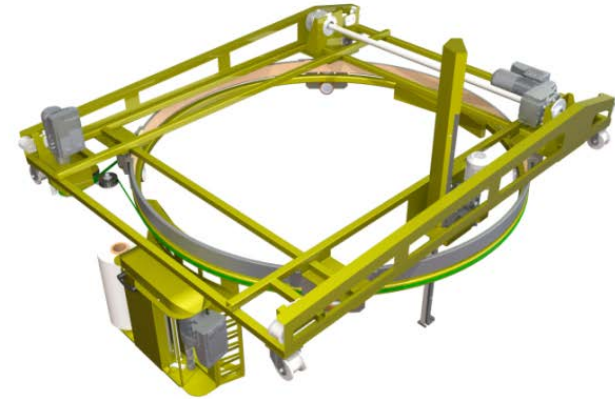




Ring technology

Diversity

- Key feature of the ring technology is that many different packaging requirements can be met with one machine.
- Using different wrapping programs and optimising the wrapping cycles for different products, over-packaging is minimised, leading to cost savings.



Packaging quality

- Using the ring technology, packages are stationary on the pallet during wrapping. There is no impact of centrifugal forces and therefore there will not be gaps between the packages on the pallet. This means improved transport stability, less damaged products and less reclamations.
- Lay-on force control of the film improves when the pallet is not rotated, as the product corners are not "pulling" the film.

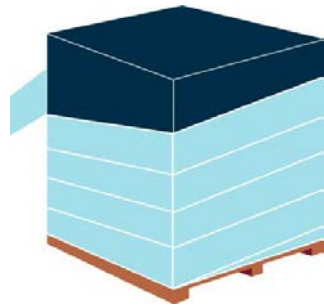
Effortless technology

- Ring technology causes significantly less mechanical stress to the parts of the machine compared to other technologies, reducing demand for maintenance.
- Ring structure provides an easy access for maintenance. The ring can be driven down and as all motors are attached to it there is no need to climb up at all.

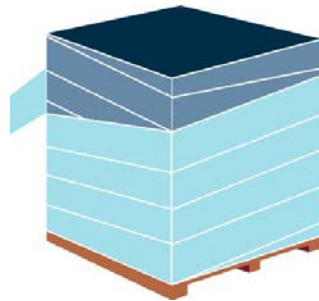


Ring technology

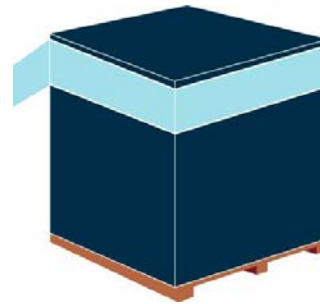
- Ring technology provides excellent flexibility as highly adjustable wrapping programs are available to match the various requirements of different sizes and shapes of loaded goods.
- Each program can be adjusted by operator to meet all demands for stability before and after the wrapping.



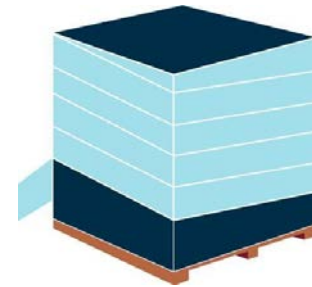
Single from bottom



Double from top



Banderol to any height



Single from top

Parameters to be defined for each program separately:

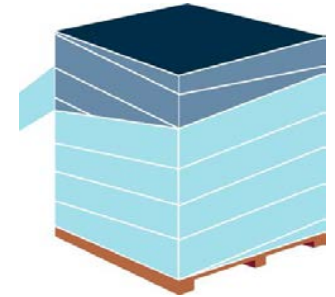
- Revolution top and bottom (separate parameters)
- Overlapping downwards/upwards
- Crossing the pallet top edge when wrapping upwards
- Starting position from top (only for banderol)



Capacity – Pallets per hour

Capacity calculation example

- Load height 1600 mm
- Conveyor speed 15 m/min
- Infeed and discharge of the pallets at the same time
- Film overlapping 25%



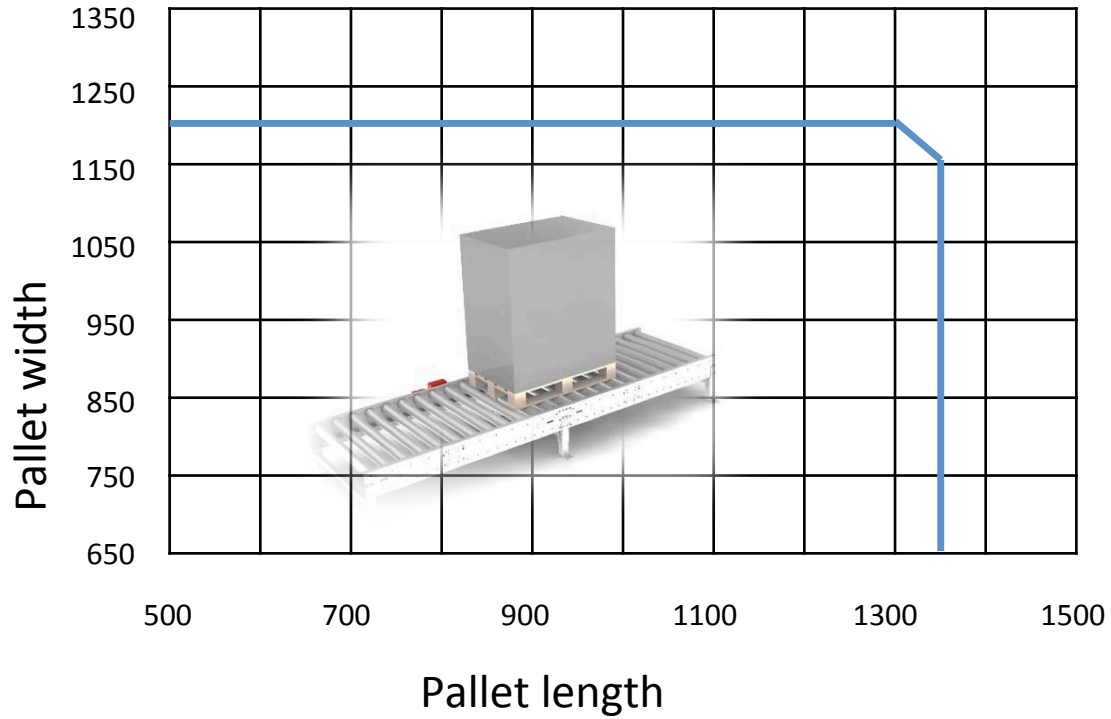
Wrapping program	Capacity pallets / hour
Single wrapping / 10 layers	50
Double wrapping / 15 layers	40

NOTE!

This calculation is strictly a guideline and the final result depends on the selected wrapping program, machine settings and the film quality. Changes in any of those will effect to the capacity calculation.



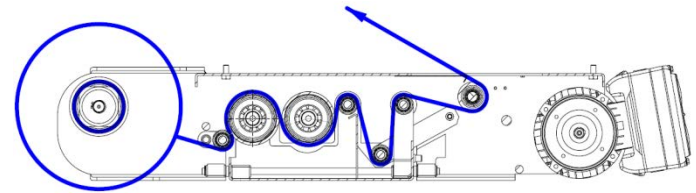
Capacity - Max. load dimensions





Operation - Easy Load S film carriage

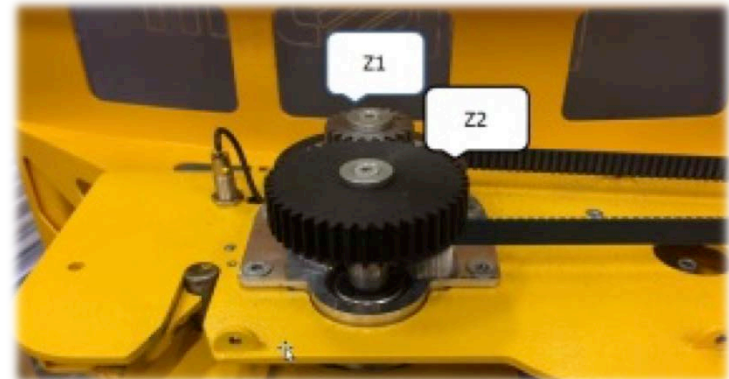
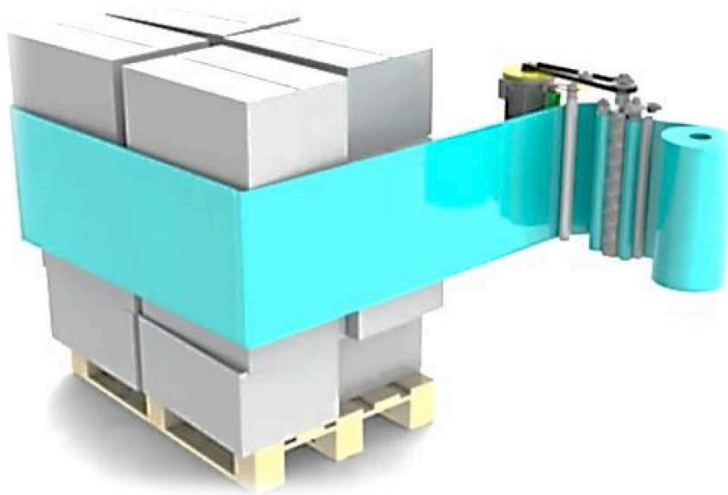
- WrapBOX is equipped with the patented Easy Load S-carriage, where the two pre-stretch rollers are very close to each other.
- Benefits of the S-technology are that the film does not lose its' effective width while being stretched, and it also provides better gripping performance compared to the alternative (W-carriage) technology
- For a smooth operation the pre-stretch rollers can be released for the film threading and reloading the carriage.





Operation - Controlled pre-stretch

- Main purpose of the pre-stretch level setting is to achieve optimum economy in the film consumption
- Pre-stretch ratio is set by two fixed gears, providing consistent film usage all the time.
- Pre-stretch level is not intended to be changed by the operators, but only by an authorised personnel and in an occasion when the film type is changed
- Standard delivery includes gear sets for 170% and 230% pre-stretch levels
- (200% pre-stretch equals film stretch from 1 m to 3 m)





Operation - Film specification

- LLDPE stretch film which is manufactured for the purpose, is to be used.
- Thickness of the stretch film depends on the film quality and the pre-stretch value used.

- Reel width: 500 mm
- Max. reel diameter: 300 mm
- Core diameter: 76 mm
- Core length: 500-515 mm
- Film thickness: 17-30 μm

- Recommended film types: MIMA UP and MIMA BH (different thicknesses)



RECYCLING AND ENVIRONMENT:

The raw material used to make the films produced by Mima Films is a polyethylen resin, wich is 100% recyclable. All products comply with the European standards and directives in relation to the management, recycling and disposal of waste. This major concern was integrated into the process as early as the design phase.

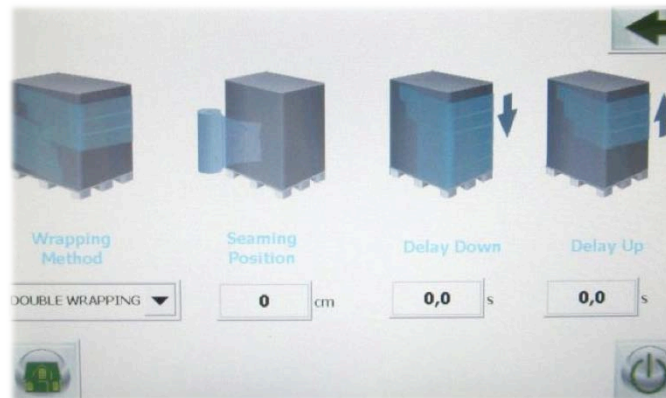
Objective: minimum packaging for maximum protection, while ensuring permanent control over added value and reducing waste & costs.





Operation – Visual HMI

- WrapBOX is equipped with a large 7” touch screen HMI.
- Main principle for the design has been to create a visual and easy-to-use HMI.
- Some of the features make WrapBOX HMI very advanced:
 - All 4 wrapping programs include separate film tension settings
 - Visual manual drive selection

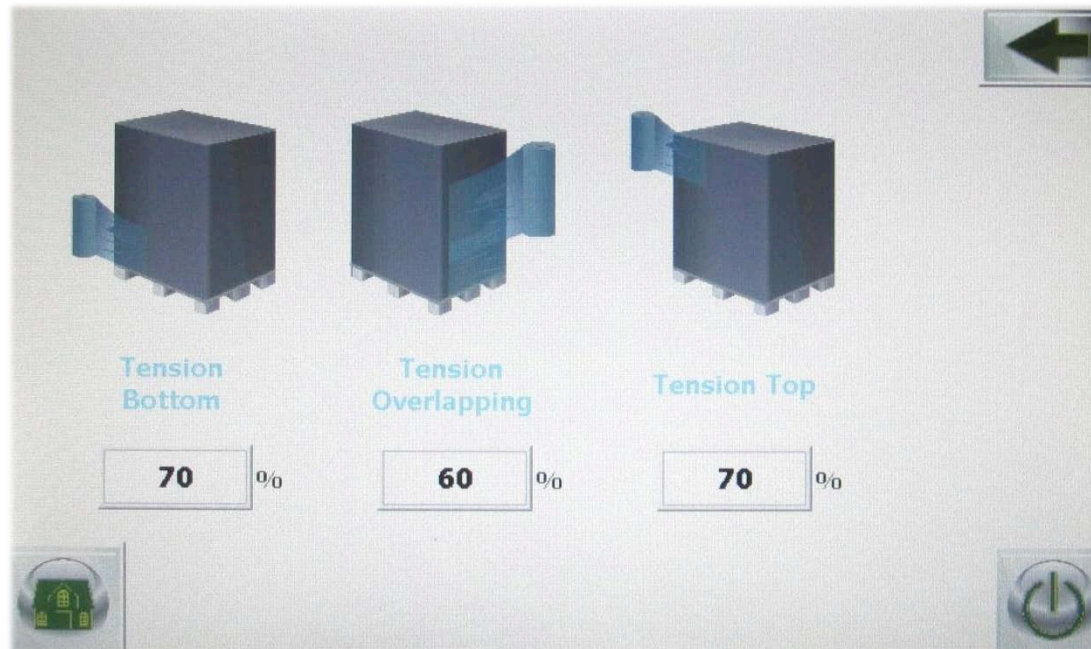




Operation - Film lay-on force control

Advanced film tension setting by touch screen + wireless communication:

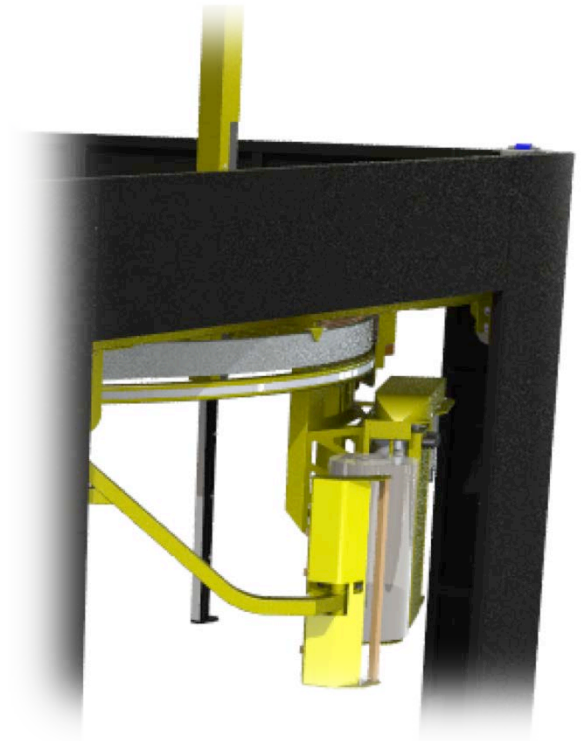
- Each 4 wrapping programs have an independent film tension setting. Settings are made by using the touch screen on the HMI
- Setting data is sent to the film carriage using wireless technology. This improves reliability as it is not sensitive for dust.
- Separate start and end tensions ensure high quality and reliability regardless of the product specific film tension setting.





Operation – Touch and Cut film seaming

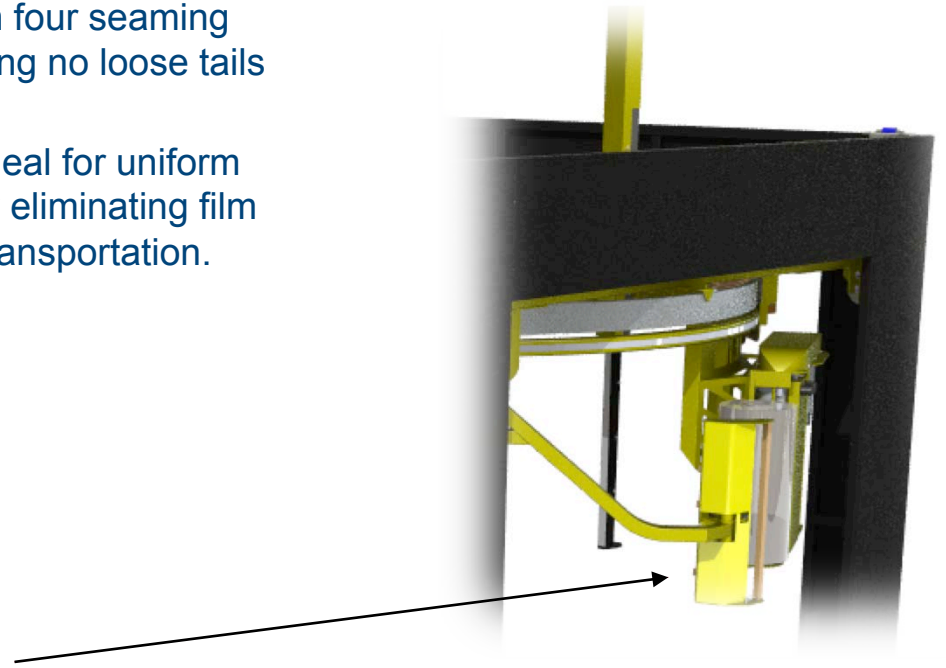
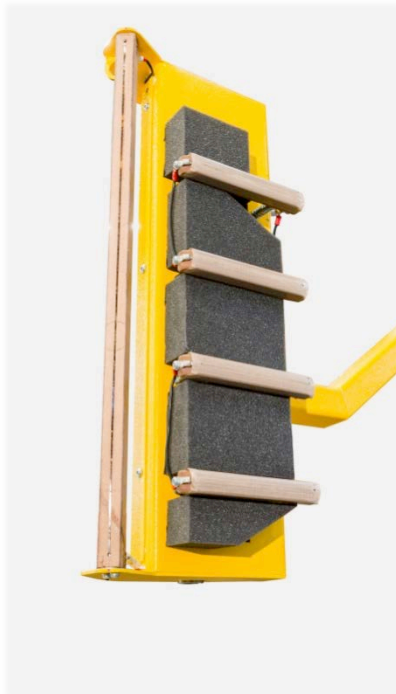
- At the end of the wrapping cycle the tail of the film is seamed by pressing it against the wrapping with a padded arm and then cut by an impulse hot wire.
- This type of seaming is equivalent or better compared to the traditional “brush and wipe down” technology which has been used in this category machines.
- In ring technology wrapping machine the film seaming can be done at any height of the load, leaving no film tails hanging on the floor.





Optional – Film heat seaming

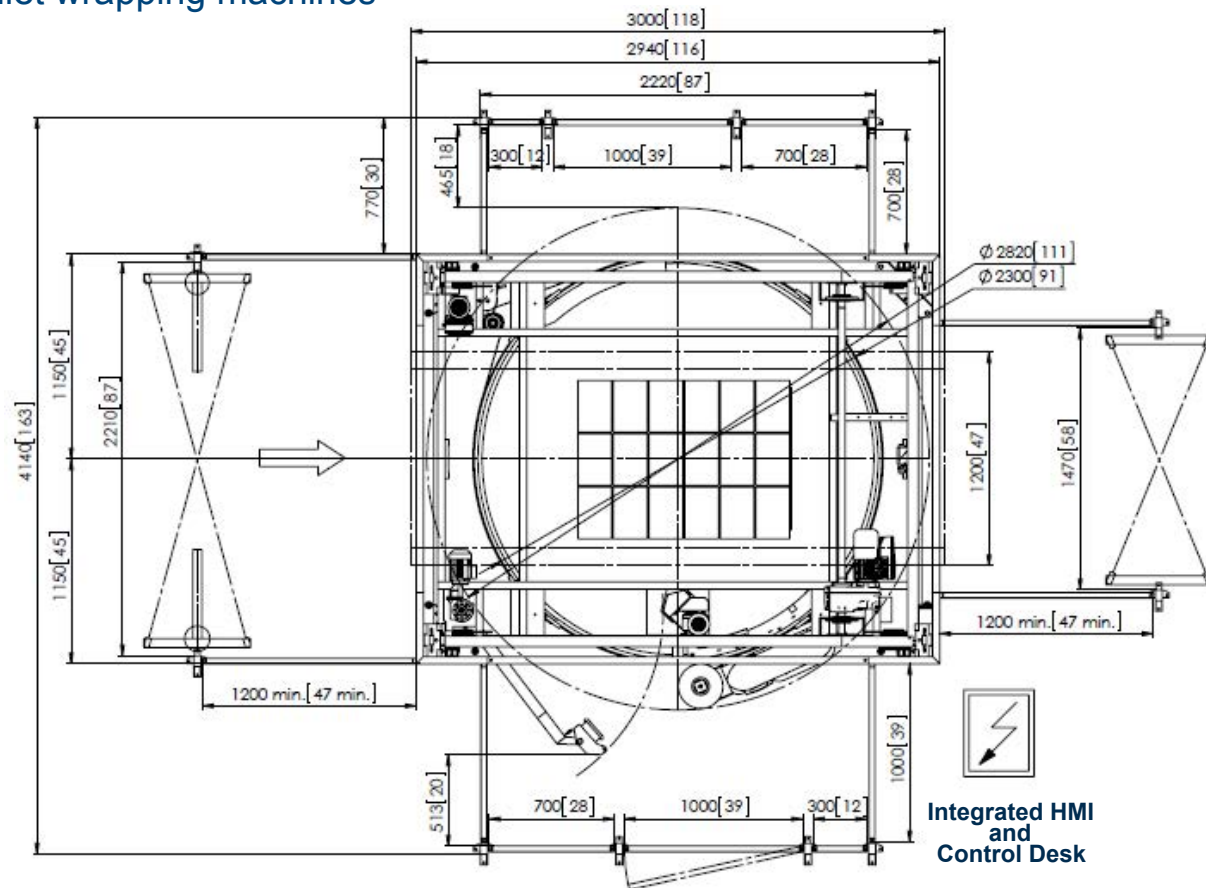
- Heat seaming functionality is an optional feature for WrapBOX. It provides a heat pad with four seaming elements which will seal the film leaving no loose tails to the pallet.
- This type of heat seaming device is ideal for uniform loads, improving packaging quality by eliminating film tails and potential unwinding during transportation.





Installation – Basic layout

- Small footprint with optional integrated polycarbonate safety walls or meshed panels
- Standard length of the wrapping conveyor inside WrapBOX is 3000 mm.
- Safety walls and light guarding are compliant with EN415-6, Safety of packaging machines. Part 6: Pallet wrapping machines



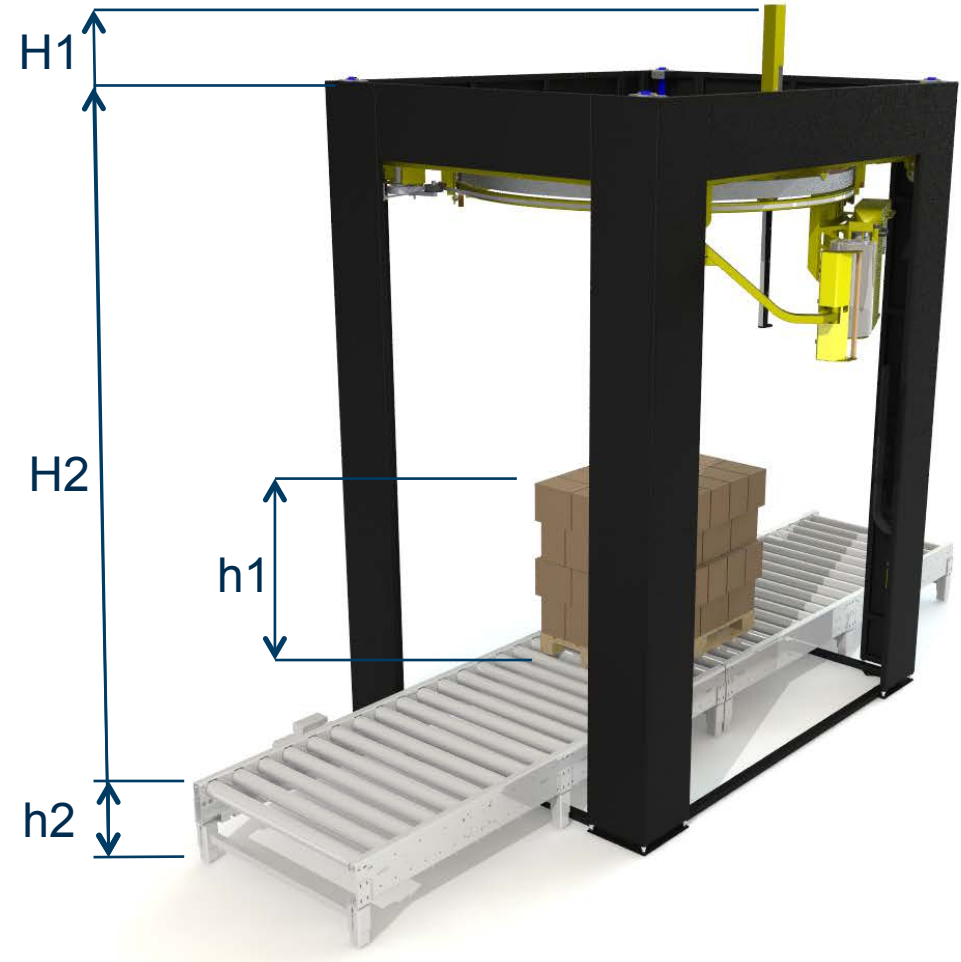


Installation - Height dimensions

Machine, frame and load dimensions:

- H1 = machine height = 4320 mm
- H2 = frame height = 3900 mm
- h1 = pallet height
- h2 = top of roller height (0...1000 mm)

- $h1 + h2 < 3000$ mm
- NOTE. Minimum pallet height 500 mm

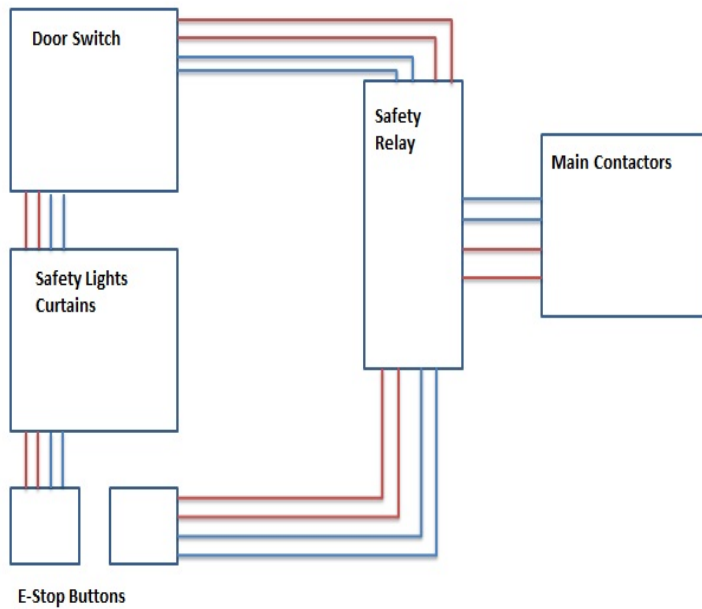




Installation – Safety

WrapBOX machine is equipped with a Safety relay.

- Safety switch on the safety fence door, Emergency Stop, light guarding and other necessary equipment are connected to the Safety relay, which is monitoring the connected equipment and controlling the main contactors.
- There are free terminals available for external equipment like 3rd party E-Stop circuit, door switches, light guarding etc.
- WrapBOX supports one Safety Zone.



Performance level d (cat 3)

- Each safety equipment connected to circuit is equipped with dual contacts.
- Dual main contactors are controlled by a safety relay.
- Any External system connected to WrapBOX safety circuit has also to be equipped with dual contacts.



Installation – Electrical connections

- Power supply: 3 x 380/400/415 VAC / 50 Hz + 0 + ground (PE) (EU-model PSU)
- Max power requirement: 3 kW (supply to be protected with 3x16A fuses)
- **NOTE. No pneumatics/ compressed air supply needed!**



Installation - Interface signals

WrapBOX-machines are equipped with potential free contact signals:

- **Interlock signals for conveyor system**
 - NOTE! WrapBOX does not have any conveyor controls

- **General fault signal, potential free contact**

- **E-Stop**
 - Contacts (2 pcs NC) from WrapBOX E-stop, for external E-stop circuit use

 - Free terminals in WrapBOX safety circuit (two channels) for external equipment like another E-stop circuit, door switches, light guarding etc.



Installation - Interface signals

Interlock signals between WrapBOX and the conveyor system

- From WrapBOX, signal S1: The conveyor inside WrapBOX may run
- From WrapBOX, signal S2: Wrapping cycle is ready
- From WrapBOX, signal S3: Pallet is in the middle of the machine
- To WrapBOX, signal S4: Wrapping request (to be ON during the whole cycle)
- To WrapBOX, signal S5: The conveyor inside WrapBOX is running

NOTE. All conveyors are to be controlled by an external system

WrapBOX=> Conveyor system

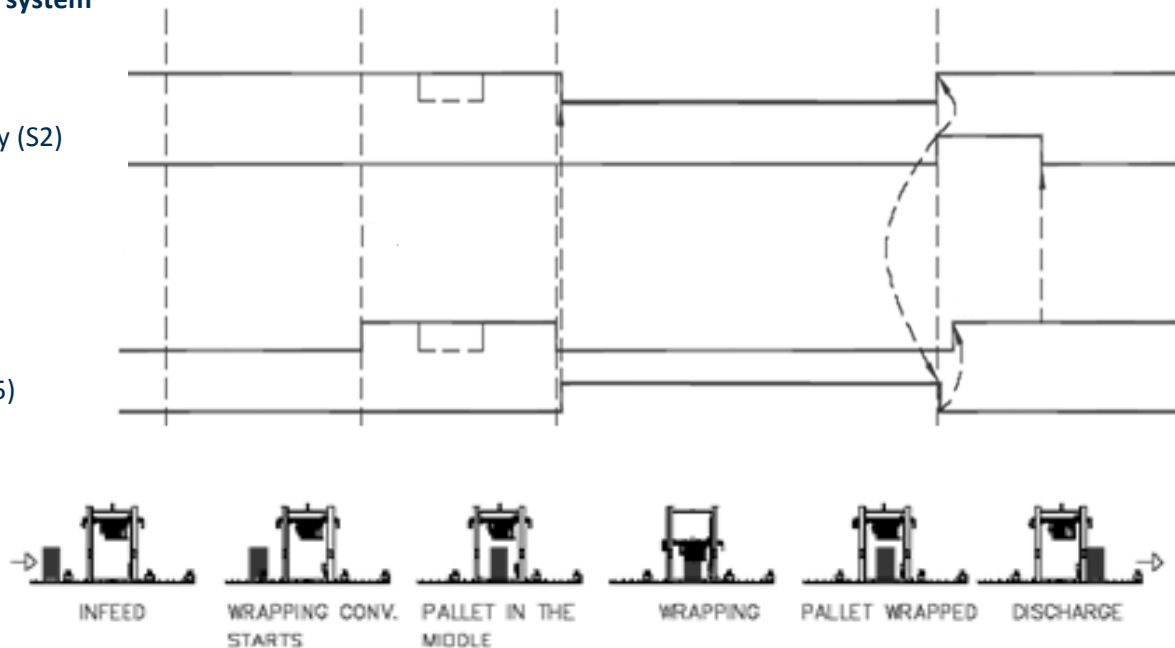
Conveyor may run (S1)

Wrapping cycle is ready (S2)

Conveyor system => WrapBOX

Conveyor is running (S5)

Pallet in position (S4)





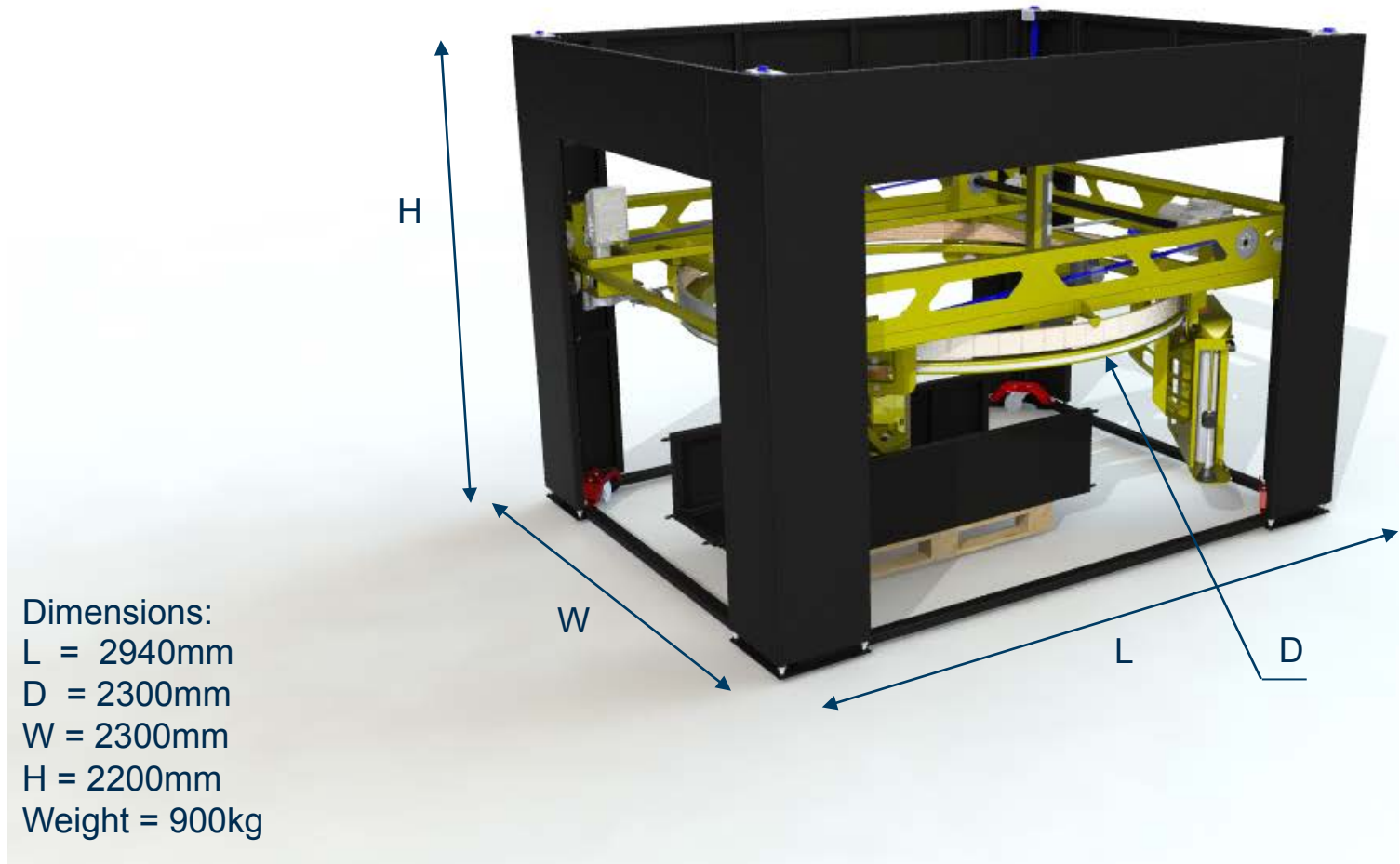
Transportation – Truck transport

- WrapBOX is designed to be cost effective to transport either on the road or by the sea.
- 4 WrapBOX machines fit into a standard truck or a 40' container





Transportation - Transport dimensions

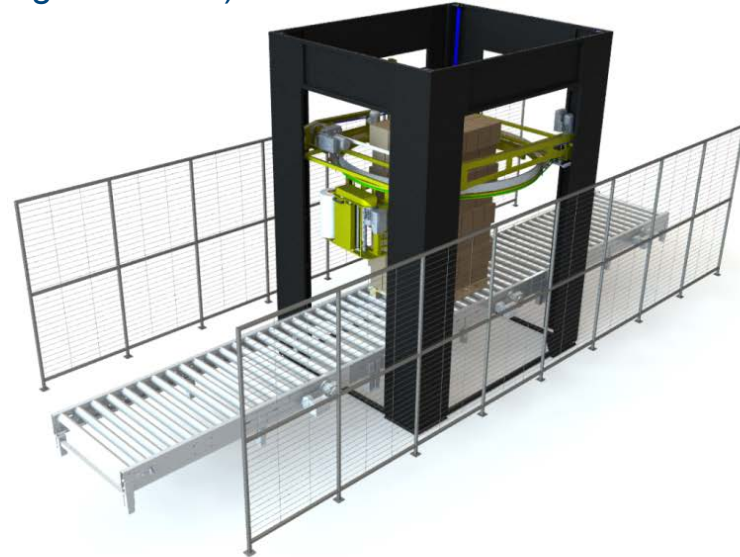
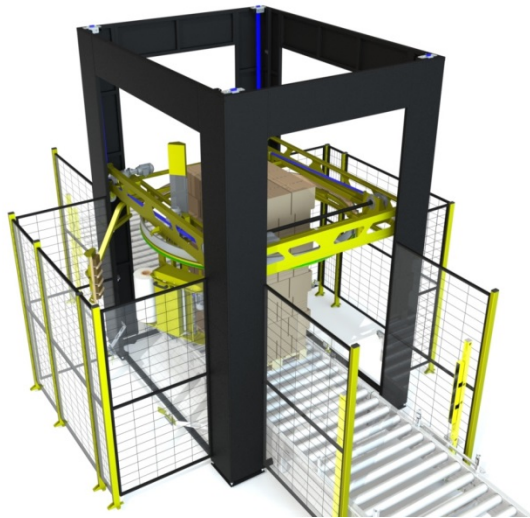
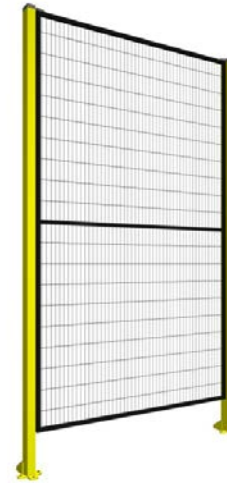




Optional – Meshed panel safety fences

Troax meshed panel safety fences

- Wire Ø: 3 mm
- Mesh size: 20x100 mm
- Fence height: 2050 mm
- Total height: 2200 mm
- Mesh colour: Black (RAL9005)
- Frame colour: Yellow (RAL1018)
- Smart-fix type of fixings
- Complies with EN415-6 (Safety of wrapping machines)

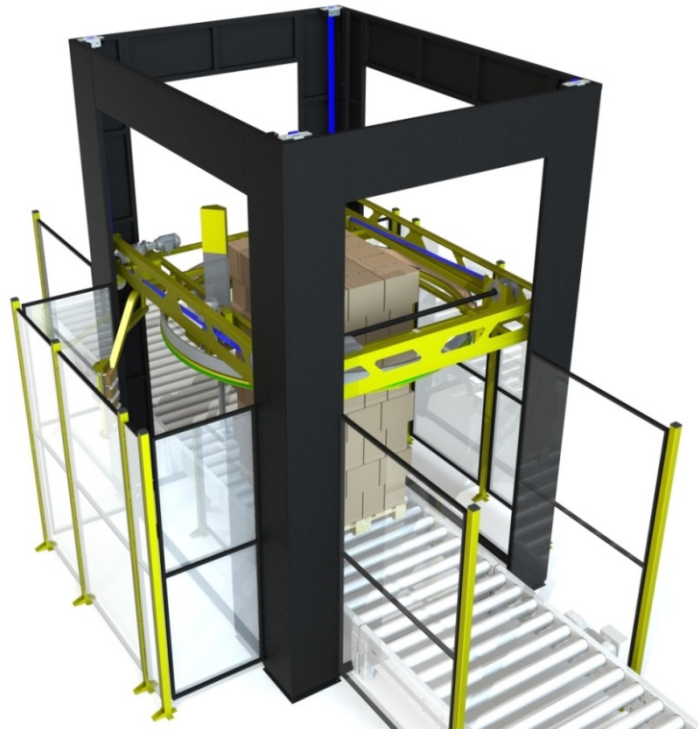




Optional – Polycarbonate safety walls

Integrated to the machine frame to form a compact footprint

- Fence height: 2050 mm
- Total height: 2200 mm
- Frame colour: Yellow (RAL1018)
- Smart-fix type of fixings
- Complies with EN415-6 (Safety of wrapping machines)





Optional - Safety light guarding system

Sick M4000-series with yellow (RAL1018) columns

- For infeed and/or discharge side
- Function as Emergency Stop
- Muting function for pallet loads by photocells
- Turning fence elements (2 pcs) on infeed side with safety switches
- Override function with monitoring.
- Two channels connected to WrapBOX E-Stop relay
- Min. distance from safety beam to any moving part of machine is 1200 mm.





Summary – Standard & Optional features

STANDARD FEATURES

- Painted WrapBOX steel frame with steel panels
- Wrapping unit including lifting and rotation motors
- Easy load S-Carriage
- Power Pre-stretch
- Wireless control of film lay-on force
- Integrated Control Desk with a visual 7” Touch screen HMI
- Touch and Cut film seaming

OPTIONAL FEATURES AND FUNCTIONALITY

- Film heat sealing
- Troax safety fence kit according to EN415-6
- Troax integrated polycarbonate safety walls according to EN415-6
- Sick M4000-series safety light guarding system according to EN415-6

LIMITATIONS/ NON-EXISTENT FEATURES

- Top film Dispenser
- Load stabilizer
- Conveyor controls

Juha Pihkanen
Product Manager
Oy M. Haloila Ab

Tel. +358 40 7711 637
Email juha.pihkanen@haloila.com

The logo for HALOILA features the word "HALOILA" in a bold, white, sans-serif font. The letter "O" is replaced by a white circle with diagonal black stripes. A thin white horizontal line is positioned below the text.

HALOILA

Machines & Service