

Empticon®

Unloading containers
– efficiently and ergonomically



Empticon® - takes the heavy work out of your hands



Using Empticon®, one man can unload a container full of cartons - without lifting as much as one carton himself!

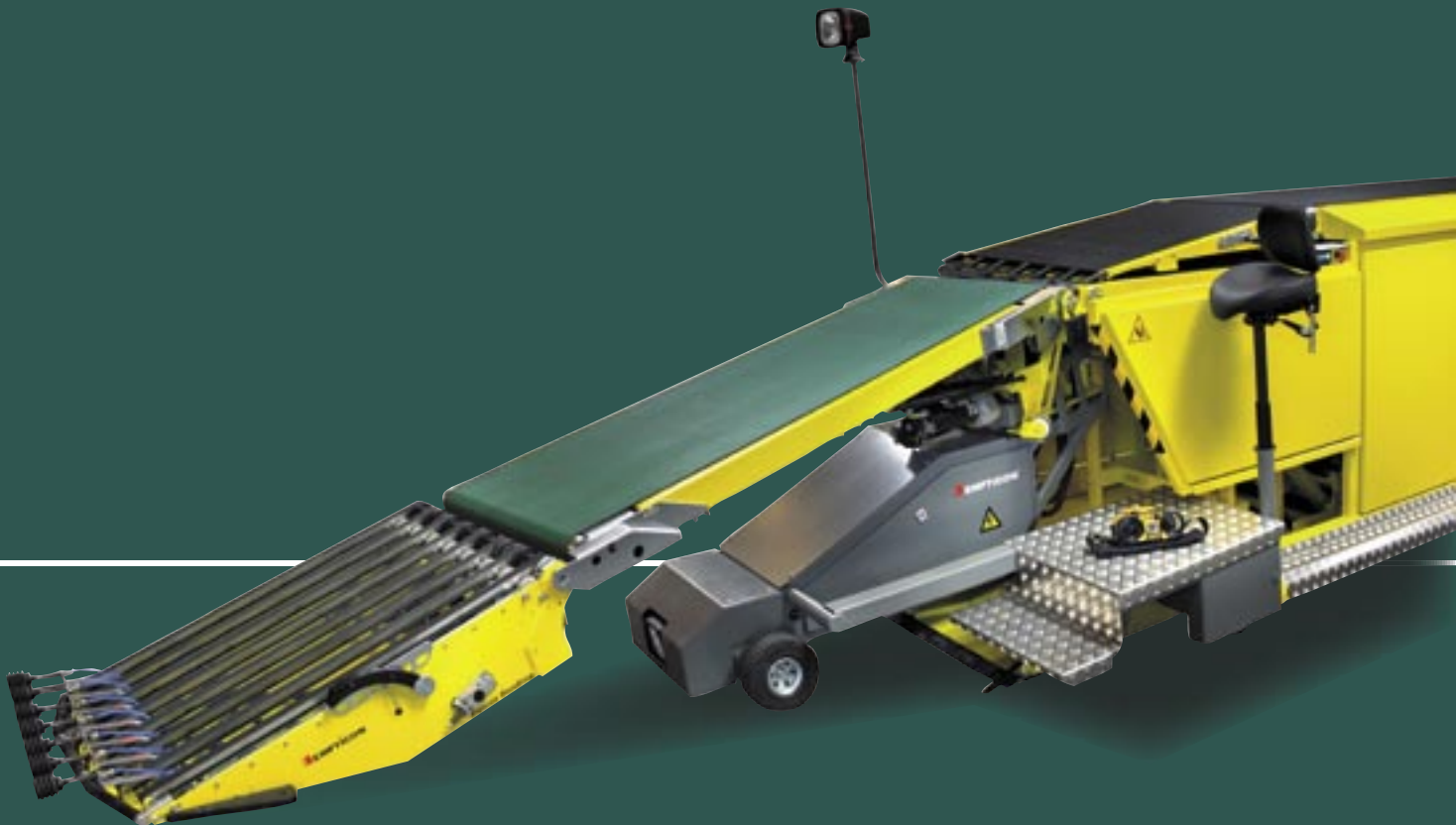
In cooperation with CPH Design, Univeyor has developed an alternative to the manual unloading of containers, making heavy and awkward lifts a thing of the past. Thanks to the Empticon, the operator doesn't have to do any lifting, and therefore he can attend to the emptying of freight containers the entire day without risk of upper limb disorders.

LOADING TOO

The Empticon can also be used for loading of freight containers, where an effective solution is needed.

EFFICIENT AND ECONOMIC

The machine has a high capacity and a short pay-back time. It is easily operated and requires only a minimum of maintenance.



The user-friendly Empticon can be used as a stand-alone machine or integrated with other automated equipment.

Ergonomically correct handling

The Empticon is easy to handle and can be operated by one person. The machine is operated from a wireless control desk using a joystick, eliminating many of the heavy and awkward lifts that have for many years been the traditional way of unloading freight containers.

FOCUS ON WORKING ENVIRONMENT

In many countries, including the EU, the Working Environment Authorities are focusing their attention on the health problems generated by manual handling and heavy lifts. Many countries now have regulations for the amount of lifts carried out and methods used to do this.

HEAVY LIFTS ARE COSTLY

- In general, the Danish Working Environment Authority considers the lifting of a 3kg weight as a potential health risk, if the lift takes place at a distance (reach) of 3/4 arms length, above shoulder height or below the middle of the thigh. If this is the case the overall acceptable daily lifting quantity equals to approx. 3T.
- For example; a typical 40ft container holds 1000 cartons, weighing between 10 – 15kgs each. If 3 employees work for 2 – 3 hours each, unloading this container, then they would actually exceed the limit of lifts for the day, as outlined by the Working Environment Authority.



Via a wireless control desk, cartons are pulled onto the belt by means of a vacuum (with suction cups), the belt then transfers the cartons out of the container.

Using Empticon, one man can unload an entire container without lifting as much as one carton himself. Instruction and training can be given over just a few hours.

The workplace is completely ergonomic. The operator can work either standing or seated, the seat and backrest being fully adjustable.



No more heavy lifting. Using a vacuum, cartons are lifted by the gripper unit and placed onto the belt.



The flexible and ergonomically correct design of the Emticon also allows for working in high-cube containers.



Having gained some practice, the operator easily reaches a capacity of more than 600 cartons per hour picking one box at a time.

How to operate the Empticon®

WIRELESS OPERATION

Once the container has been docked at the loading bay door, the operator can start the Empticon. Using two joysticks, the operator controls all functions of the Empticon. The gripper unit is directed towards the first cartons to be removed, starting from the centre of the top row and working from there to each side. The gripper unit is equipped with seven suction cups, using the vacuum to pull cartons onto the belt.

EASIER THAN EVER

One joystick controls the carriage in its forward and backwards motions and activates or de-activates the gripper function. The other joystick controls the upward, downward, left-hand and right-hand motions of the belt.

600 CARTONS PER HOUR

Following a short training program, the operator will be able to unload more than 600 cartons per hour. When handling smaller cartons, the gripper unit can take 2-3 cartons at a time, so the capacity will be substantially higher.

LOTS OF POSSIBILITIES

The Empticon has six belt modules, folding or unfolding from the module magazine as required. This way, the Empticon can work as a conveyor of up to 24 m. The Empticon can be used to unload 20 to 45 ft containers and trailers as well as high-cube containers, and for instance it can be used in conjunction with robot palletisers, sorters, miniload stores or other fully automated storage equipment.



Before Empticon, each carton had to be unloaded by hand – now Empticon takes away the hard work.



The compact design of the Empticon takes into account all requirements to make this an ergonomically superior workstation.



Easy maintenance and high level of safety



The Empticon is built of the strongest materials available, but daily maintenance is still important. Vacuuming of the gripper casing, removal of tape residues, cardboard, straps and the like, are sufficient to keep the Empticon working at a high level of efficiency.

NO HIGH VOLTAGE

All electrical components in the machine use 24V. This gives a higher level of safety for the operator whilst working inside the container.



Electrical panels on the carriage and in the module magazine quickly open to provide easy access to all components.




Cooperation with users and CPH Design

The Empticon was developed in cooperation with CPH Design, who has been involved in numerous projects that have contributed to substantial breakthroughs in the working environment. As well as CPH, five large Danish distribution centres each receiving and unloading many containers every day, participated in the project. As users of Empticon they have made a huge contribution to the specification of the machine, identifying what they wanted the machine to do. The outcome is that the Empticon is capable of handling the majority of cartons arriving in freight containers from the Far East.



Empticon developed in cooperation with:

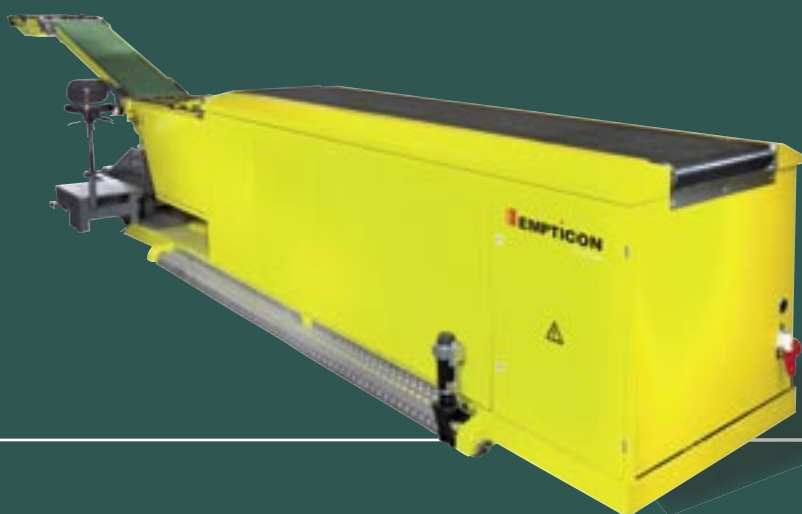
CPH DESIGN



WINNER OF THE DANISH DESIGN PRIZE 2007
The jury says, "Never seen before, strong functional aspects, thorough design work, innovative, good solution for difficult task, easy to operate, good ergonomics and very efficient."



Winner of the
Danish Design Prize 2007



Data		
Empticon		Power-operated
Empticon dimensions	(LxWxH)	6 m x 2.1 m x 3.6 m
Outlet height		1.45 m
Full length		24.4 m
Carton dimensions	min	(LxWxH) 150 mm x 150 mm x 150 mm
	max	(LxWxH) 1000 mm x 800 mm x 800 mm
Carton weight	max	40 kg

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