

Retail Order Preparation



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Retail Order Preparation

At PEC we understand the needs of retailers, banks and cash processors. We deliver end-to-end solutions for optimizing the whole cash cycle including the handling of cash deposits and payouts.

The real cost of cash is a determining factor in the further automation of the processes at POS, cash handling and processing. PEC is working with banks worldwide to optimize these costs and achieve a zero-touch cash cycle, controlled by an end-to-end web based Cash Management System.

PEC's offerings include Cash Containers, Standardized Cash Packs, Vault Automation, Automated Pre and Post Processing, Automated Receiving and Payout, Automated Sorting and Boxing and a Cash Management System to control the entire operations of the automated cash cycle.

As part of our solutions for retail cash processors, PEC offers an automated Retail Order Preparation system (ROP). Retail level cash orders are typically combinations of smaller, mixed quantities of banknote straps, loose banknotes and coin rolls. At the same time these orders need to be completed precisely, in a secure and cost effective way.

Our Retail Order Preparation (ROP) machine fulfills these demands and offers a scalable, compact and reliable solution for Cash Centers. Our solution can operate as standalone equipment or as part of a complete cash processing and payout system.



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How ROP works

The Retail Order Preparation machine collects coin rolls, loose banknotes, straps of banknotes into a plastic bag according to the order received from the client.

The forming of the plastic bag from overlaminated film and the dispensing of the correct amount of coin rolls and banknotes into the bag are fully automated and monitored. After the bag is sealed, the weight is verified and the order information is printed on the label and applied to the bag. Optionally a carton box packing machine can be added which groups several orders (plastic bags) into a carton box.

Configuration and dimensions

The machine is scalable and configurable according to the needs of the customer.

The layout and dimension of the machine depends on the type of cash (coin rolls, loose banknotes or strapped banknotes) and the number of different denominations of each type. As an example, the setup for 8 denominations of coins, 6 denominations of strapped banknotes and 4 denominations of loose banknotes occupies a floor space of 9 x 6 m.

Operating principle

The machine consists of the following modules:

Coin dispensing module

The coin dispensing module is responsible for all coin related operations. It contains storage hoppers for bulk coins, coin wrapping machines, coin roll dispensers and a conveyor for collecting and feeding the dispensed coin rolls into the plastic bag.

The hoppers, wrapping machines and roll dispensers are placed along the central coin roll conveyor. This layout results in an easily configurable and expandable module.

Banknote dispensing module

The banknote dispensing module is responsible for picking banknote straps and loose banknotes according to the order quantities. Banknote straps are stored in vertical buffers and dispensed directly on the central banknote conveyor.

Loose banknotes are stored in an Automated Teller Machine (ATM). The ATM counts and dispenses the required amount of banknotes; the banknotes are grouped together and packed in a

separate sealed foil. This sealed package is then placed on the banknote conveyor. The central banknote conveyor collects and feeds the dispensed banknote straps and the loose note packages in the plastic bag.

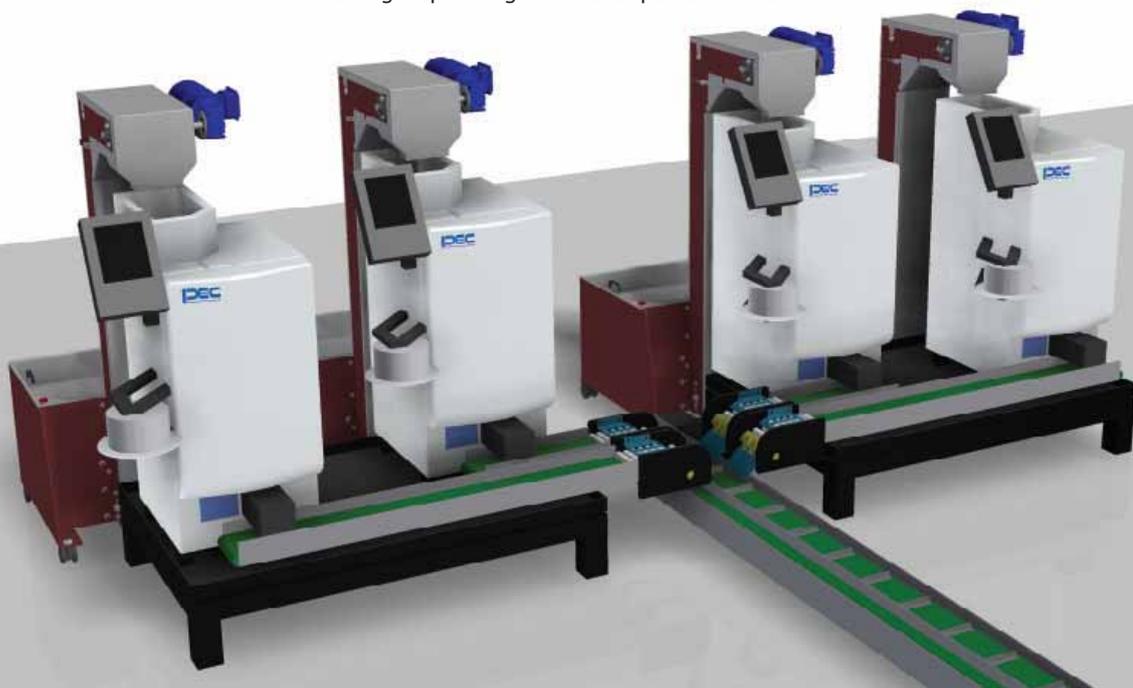
The strapped banknote buffer and dispenser have a modular design to support customer specific configurations. The capacity of the loose banknote picking can be expanded by simply adding a second ATM to the ROP machine.

Packing module

The packing module is the central component of the machine. It forms standardized plastic bags from overlaminated film. It feeds the dispensed coin rolls, banknotes straps and loose note packages into the bag and finally seals the bag.

Label and verification module

The output module is responsible for the final weight check and labeling of each bag with order specific information (order ID, customer details, order details per denomination, processing date and time, weight, etc.).





Performance

The ROP machine is able to deliver 360 bags per hour, based on an average order quantity of 5 coin rolls, 2 banknote straps and 40 loose banknotes. The standard bag dimensions are 400 x 500 mm, with a max cash weight of 20kg.

Cash Replenishment

The replenishment of the ROP requires the refilling of coin hoppers, strapped banknote dispensers, ATM(s) and packaging materials.

The machine is designed to minimize the down time during this process:

- The packing machine is equipped with two unwinders for fast switch over from one overlamine film roll to the other. The switch over process is semiautomatic.
- The coin hoppers can be refilled while the coin wrapping machines are in operation.
- The strapped banknote dispensers can be refilled while straps are dispensed.
- The ATM can store 4-6 banknote cassettes. The machine has to be stopped only during the exchange of the cassettes.

Integration with Cash Management System (CMS)

The Retail Order Preparation machine can be integrated in an automated cash processing and payout system:

- The machine receives order specific information directly from the Cash Management System (CMS).
- The machine sends order execution reports and status reports to the CMS.
- The CMS can organize just-in-time transportation of banknotes, coins and prepared orders based on the execution reports from the machine.

Traceability

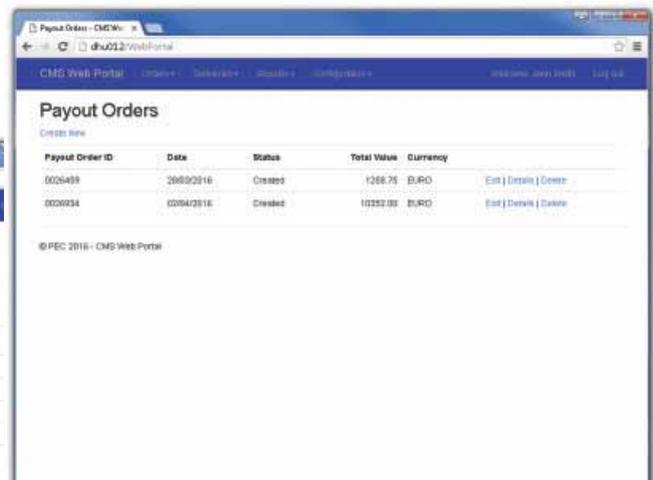
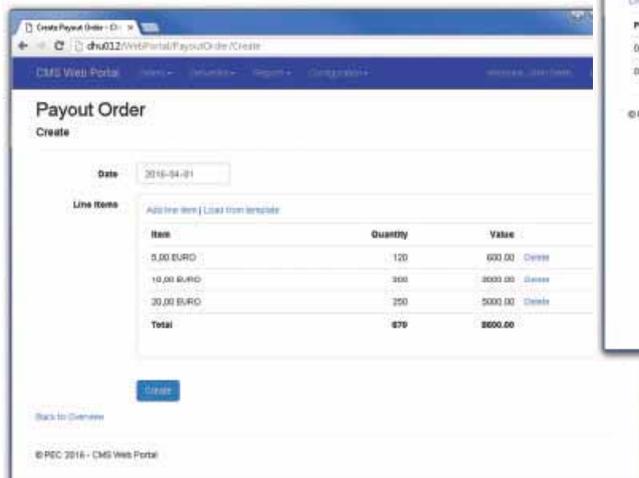
High performance cameras are placed above the coin- and banknote feeding locations of the packing machine. These cameras record images of the feeding processes for documenting the type and amount of cash conveyed in each bag.

The recorded images are linked to the order and bag data in the CMS database.

The CMS keeps information about the processing of each bag:

- Order information.
- Confirmation from the coin dispensing module about the amount of coins.
- Confirmation from the banknote dispensing module about the amount of banknote straps and packed loose banknotes.
- Confirmation from the label and verification module about the sealing and final weight of the bag.
- Link to recorded images of the coin- and banknote feeding.
- Operational information (operator ID, activity records, etc.)

All this information is time-stamped and can be retrieved later for auditing the content of any processed bags.



Benefits

The ROP machine offers many benefits:

- **Scalable solution:**
 - Up to 8 coin denominations
 - Up to 12 strapped banknote denominations
 - Up to 12 loose banknote denominations
- Low-cost consumables
- High productivity: up to 720.000 coins and 144.000 banknotes per hour
- Guaranteed order quality
- Minimum downtime
- Easy operation
- Increased security.



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