

# APPLICATION

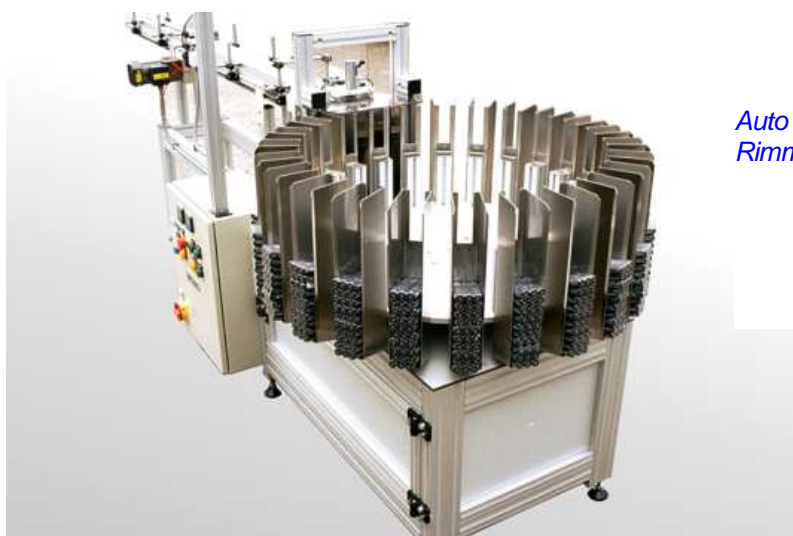
## Automatic Pack Stacking

# MONK

We specialise in production engineering solutions using automation machinery and conveyor systems. Our systems incorporate many standard modules that have been developed over the past twenty years, ranging from simple flat belt conveyors, pick and place units to sophisticated automatic assembly machines.

### Auto - Stacking Machine

The MONK AUTO-STACKER automatically stacks product packs into a manageable stack sizes so that they so that they can easily be transferred to another machine or placed directly into a carton.



*Auto stacking machine used for stacking Rimmel cosmetics.*

Standard automatic stacking machine from the Monk range. Each machine is tailored to suit the customer's specific requirements. Normally packs are fed at speed and drop a short distance onto the stack. A pick and place module can be used where more delicate packs are being stacked.

The packs are stored in magazines on an indexing carousel. The carousel can store up to 50 stacks so an operator is able to leave the line and pack adjacent lines in rotation.

The AUTO-STACKER is simple to install, it is free standing and only needs positioning at the end of the line so that packs are fed onto it's conveyor. The packs are then escaped into the carousel magazine until the pre-determined stack height is reached. The carousel then indexes one position.

Speeds of up to 120 packs per minute can be handled.

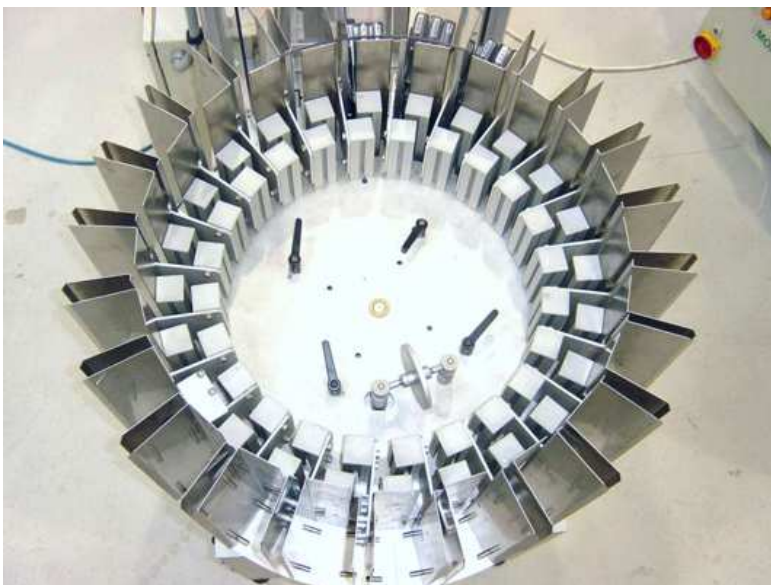
It can be used for any high volume product, an example is the cosmetics industry where great savings have been made packing lipsticks and mascaras, also the media industry for high speed collating of compact discs.

It is also used in the pharmaceutical industry where strict accountability of the product is vital throughout a complete production and testing process.

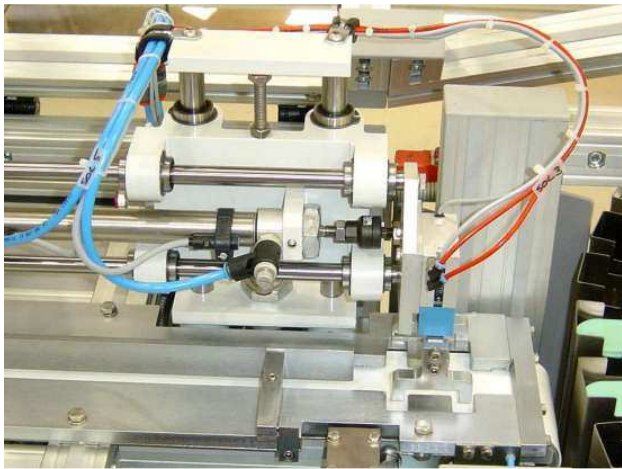
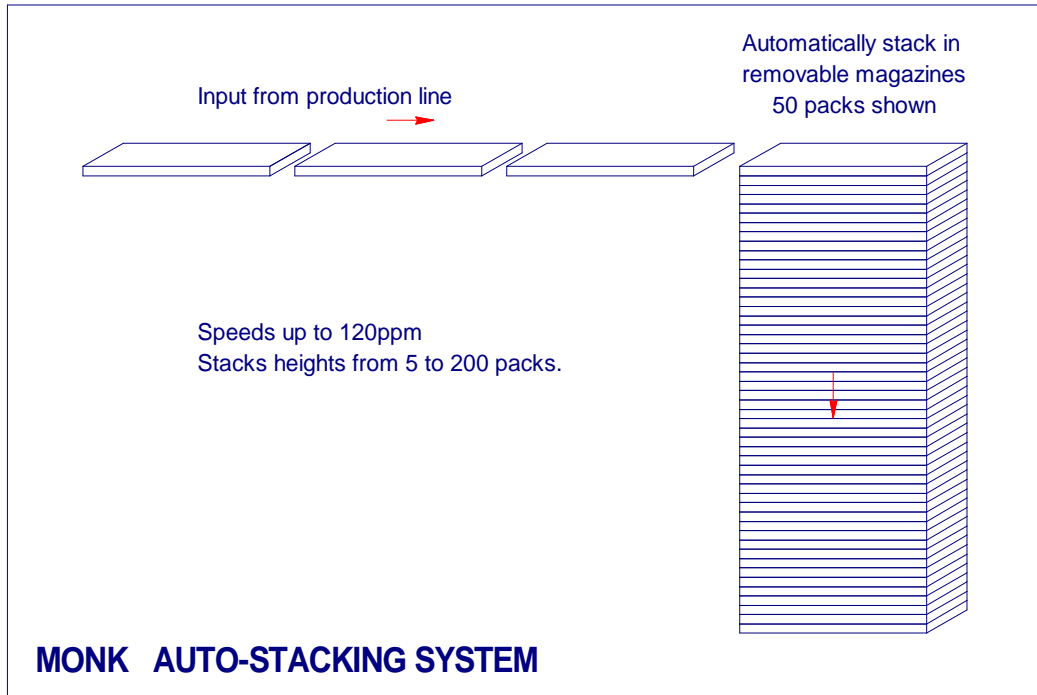


*The Monk automatic stacking machine adapted for packs with 50 removable magazines. The large capacity of the storage carousel means that operators do not need to visit the machine very often to unload finished assemblies.*

It can be supplied with an adjustable magazine carousel to cater for various pack widths. Magazines are simply adjusted to suit a pack width by rotating a hand wheel. The stack height can be programmed into the control panel.



*Adjustable magazine carousel. This one is used by EMI in for stacking compact disc packs.*



*M302 pick & place with 150mm horizontal stroke and 20mm vertical stroke. Equipped with Festop gripper jaws.*

If gentle handling of the pack is a critical factor, this can be achieved by using one of our standard feed systems comprising a controlled queue of packs on the flat belt conveyor transporting the packs up to an end stop with an integral sensor. Once the sensor detects that a device is in the correct position the gripper jaws gently close and the pack is transferred to the top of the stack in the magazine.

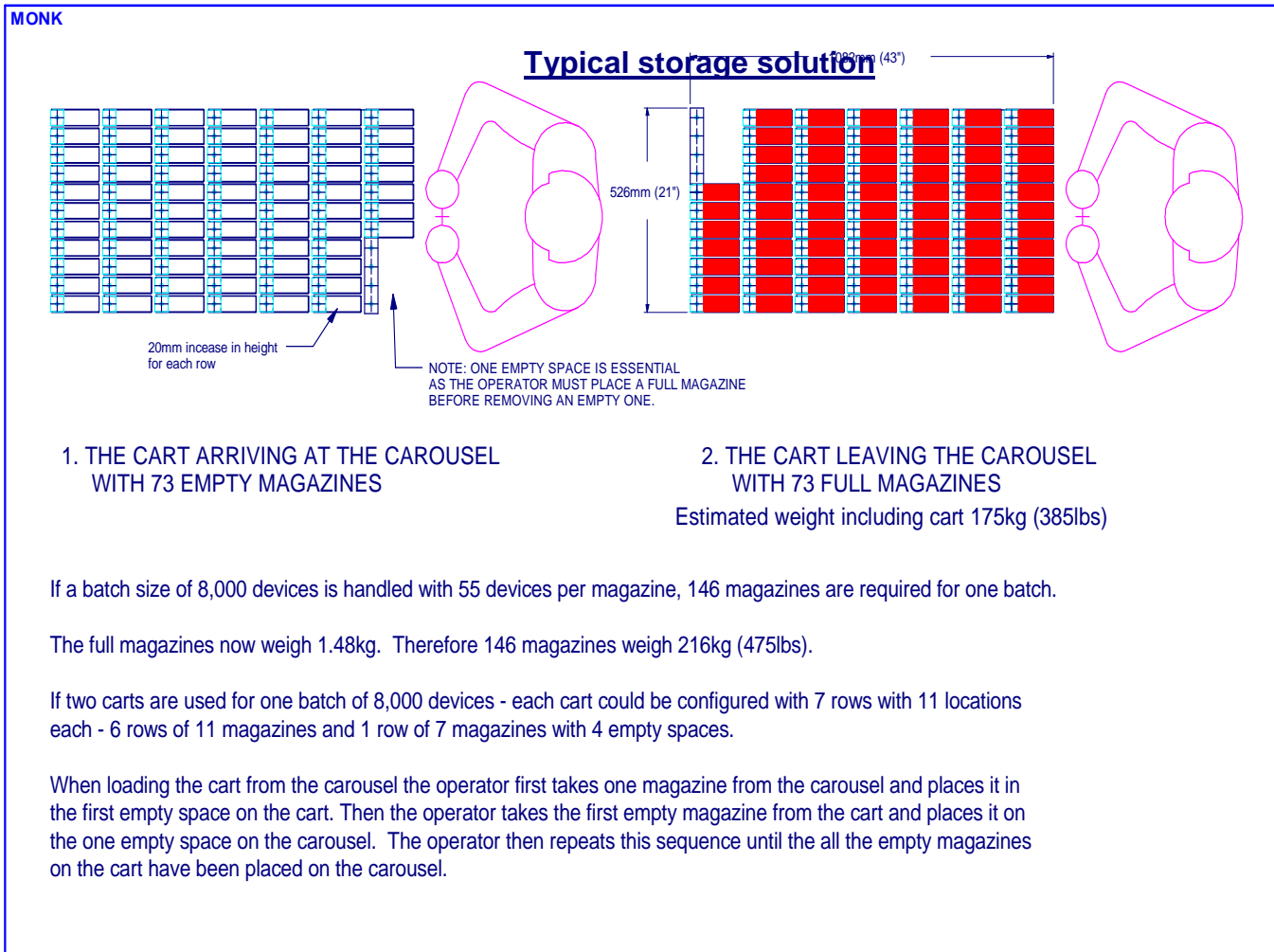
The operating speed when using a pick & place load is 40ppm.

Much thought is put into the design of the magazines, they not only needed to store the packs safely, but sometimes also to allow them to be dispensed from the bottom of the stack so that they are

handled in first in first out sequence. The magazines will also be handled by the operators on a regular basis so are designed to be as “operator friendly” as possible.

## Magazine Storage Carts.

An operator visits each of the stacking machine carousels in turn and transfers the full magazines to a special storage cart. The carts are then pushed to the next stage in the production which may be aging of medical devices, blister packing etc. All companies have their own specific requirements – a typical solution is shown below.



## Automatic Dispensing Machine

This machine dispenses packs at a rate of up to 100 packs per minute onto a belt conveyor that transports them into a blister pack machine.

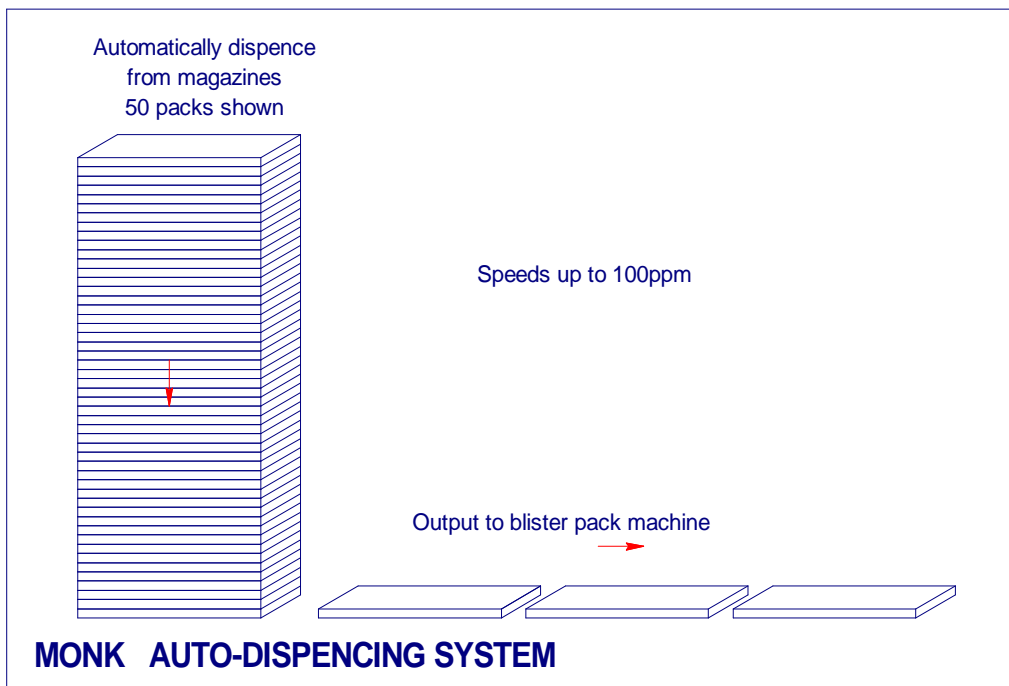


*Dispensing machine showing output conveyor.*

On exiting the blister pack machine they are transported on another conveyor into a carton filling machine, where they are automatically loaded into cartons in batches of 25. A pneumatically operated mechanism dispenses the packs one at a time onto a narrow belt conveyor which transports them to the blister packing machine.

Once a magazine has been emptied the escapement withdraws allowing the turret to index the next full magazine into position.

The guarding of the dispensing machine is arranged so that the dispensing operation does not stop while the reloading of the machine is carried out. Empty magazines are removed and full magazines are transferred from the storage carts onto locations on a twelve station rotary index table by an operator.



## Automatic Stacking and Carton Filling Machine

At the end of a production line packs are can be automatically placed into cartons.

A flat belt conveyor transports the packs into a pre-stack unit with a variable capacity of up to 5 packs.

Below this two vertical magazines are mounted on a horizontal cross slide so that as one is being filled the other one is loading a stack of 25 packs into a carton.

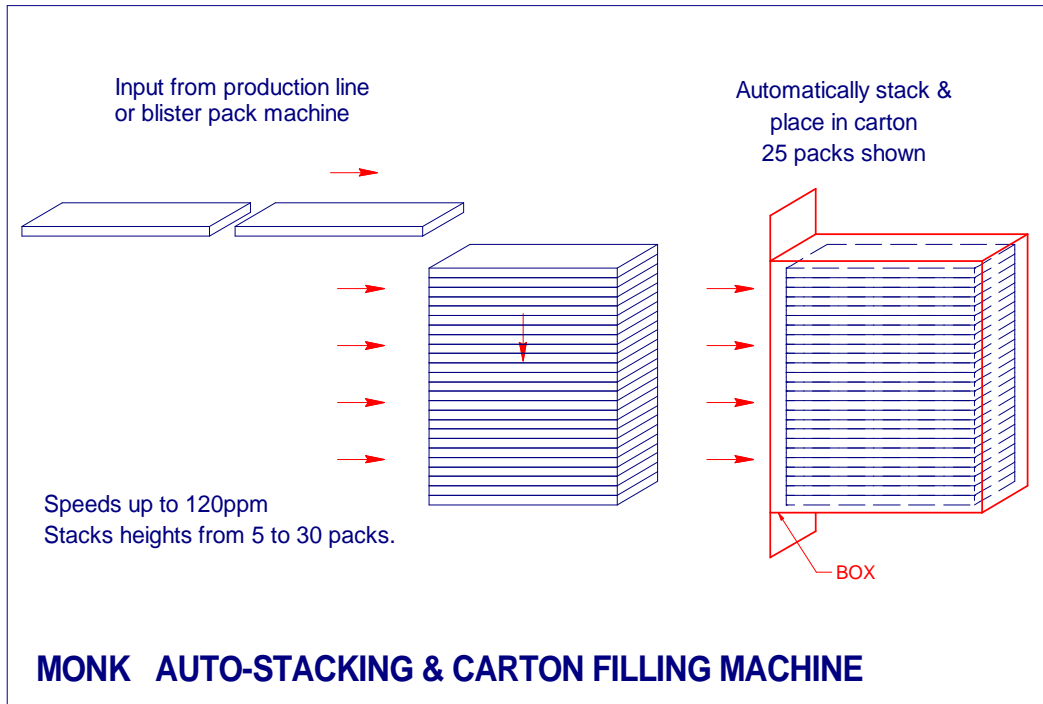


The operation of the machine is continuous at a rate of 55ppm with an operator erecting the cartons, placing them on to the machine and removing the full cartons.

*Carton filling machine viewed from the operator load and unload position.*

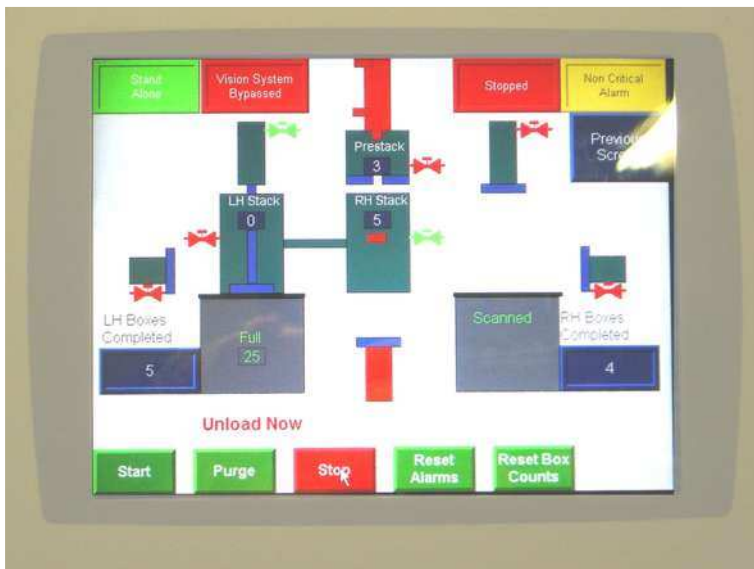
*View showing 'bomb door escapement'.  
Packs are stacked in fives and then released  
onto the top of the main stack in 0.3 seconds.*





## Control Systems

All the machines described above are controlled by a PLC based control system. A basic control system can be used or a sophisticated system with touch screen display and control with interfaces to feed information to a central computer.



*Optional touch screen control and display system.*

For more information concerning our range of products, please contact our sales department on 01483 791700 or E-mail [sales@monk-conveyors.co.uk](mailto:sales@monk-conveyors.co.uk) or visit our website at: [www.monk-conveyors.com](http://www.monk-conveyors.com).

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