



AUTOMATED TUB PALLETIZER

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RAYA 2024 Finalist Event



AGENDA

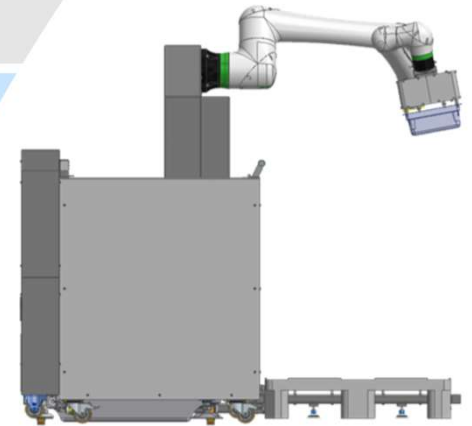
AUTOMATED TUB PALLETIZER

PROFILE

PROCESS

ATTRACTIVENESS & EFFECTIVENESS

SUMMARY



PROFILE

AUTOMATED TUB PALLETIZER



TASK

Picks up the tubs at the good outfeed of the filling machine and stacks them automatically on a pallet box.



TECHNOLOGY

The robot application is based on FANUC CRX-10iA/L integrated by ESSERT.



EFFICIENCY

Due to the high level of automation, the robot application can reduce the number of operators down to 1 per shift.



PROCESS

PROCESS DESCRIPTION



Operator

Fills the intermediate layer trolley, places an empty pallet box in the designated parking position, selects and starts the appropriate program.



FANUC

Scans the position of the tub with its camera, picks up the tub and places it in the correct position in the pallet box, once a tub is placed at the filling machine outfeed.



FANUC

Places two intermediate layers on top of the tubs, once all the tubs in a layer have been placed.



FANUC

Buffers up to 3 tubs to ensure smooth pallet changes when the box is full.



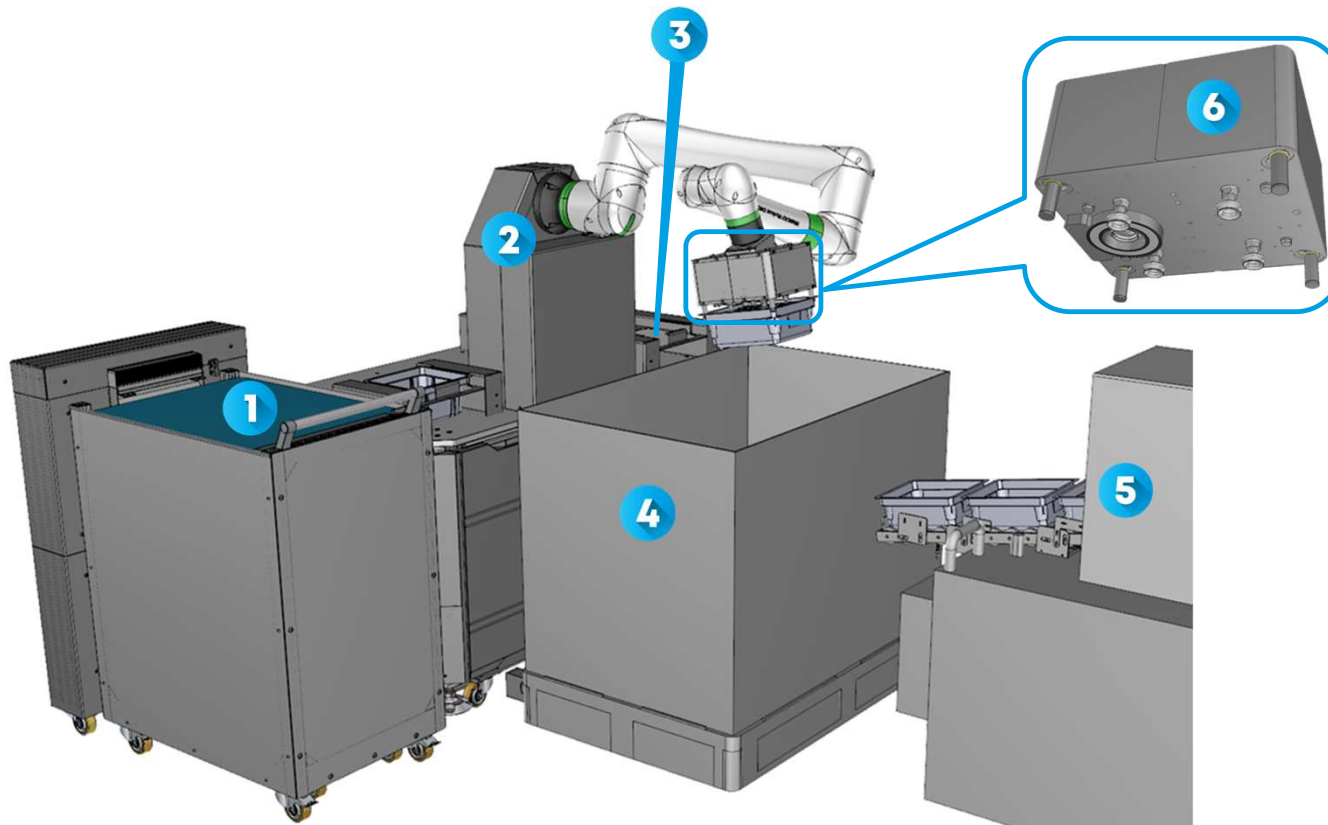
autonomy
~ 35 minutes



Operator

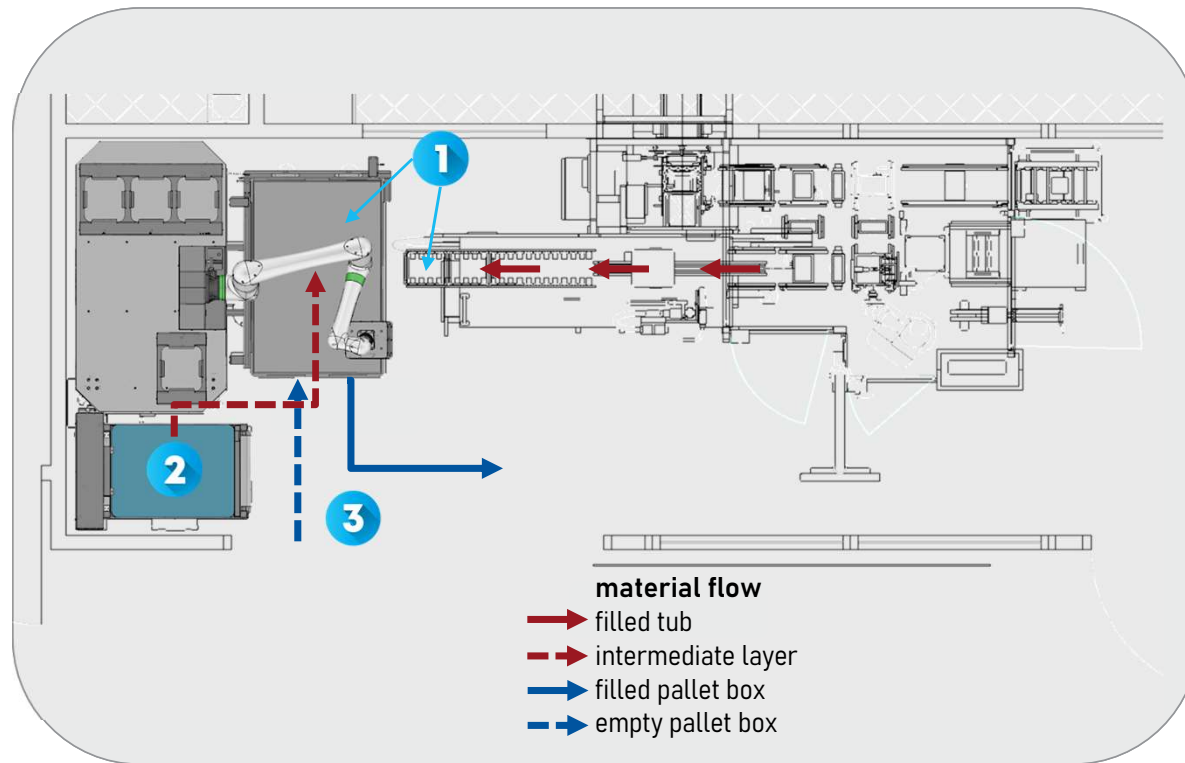
Removes the full pallet box and replaces it with an empty one.

PROCESS LAYOUT



- 1 Intermediate layer trolley
- 2 Main unit with robot
- 3 Buffer location with 3 tubs
- 4 Pallet box
- 5 Good outfeed of the filling machine
- 6 Multifunctional gripper

PROCESS LAYOUT



- 1 Gripping of the tub and placing it inside the pallet box
- 2 Putting down the two intermediate layers
- 3 Replacing the full pallet box with a new one

PROCESS

LOADING THE PALLET BOX



- 1** Scanning the position and gripping the tub
- 2** Placing the tub in the correct position in the pallet box
- 3** Putting down two intermediate layers

PROCESS

LOADING THE PALLET BOX



- 1 Scanning the position and gripping the tub
- 2 Placing the tub in the correct position in the pallet box**
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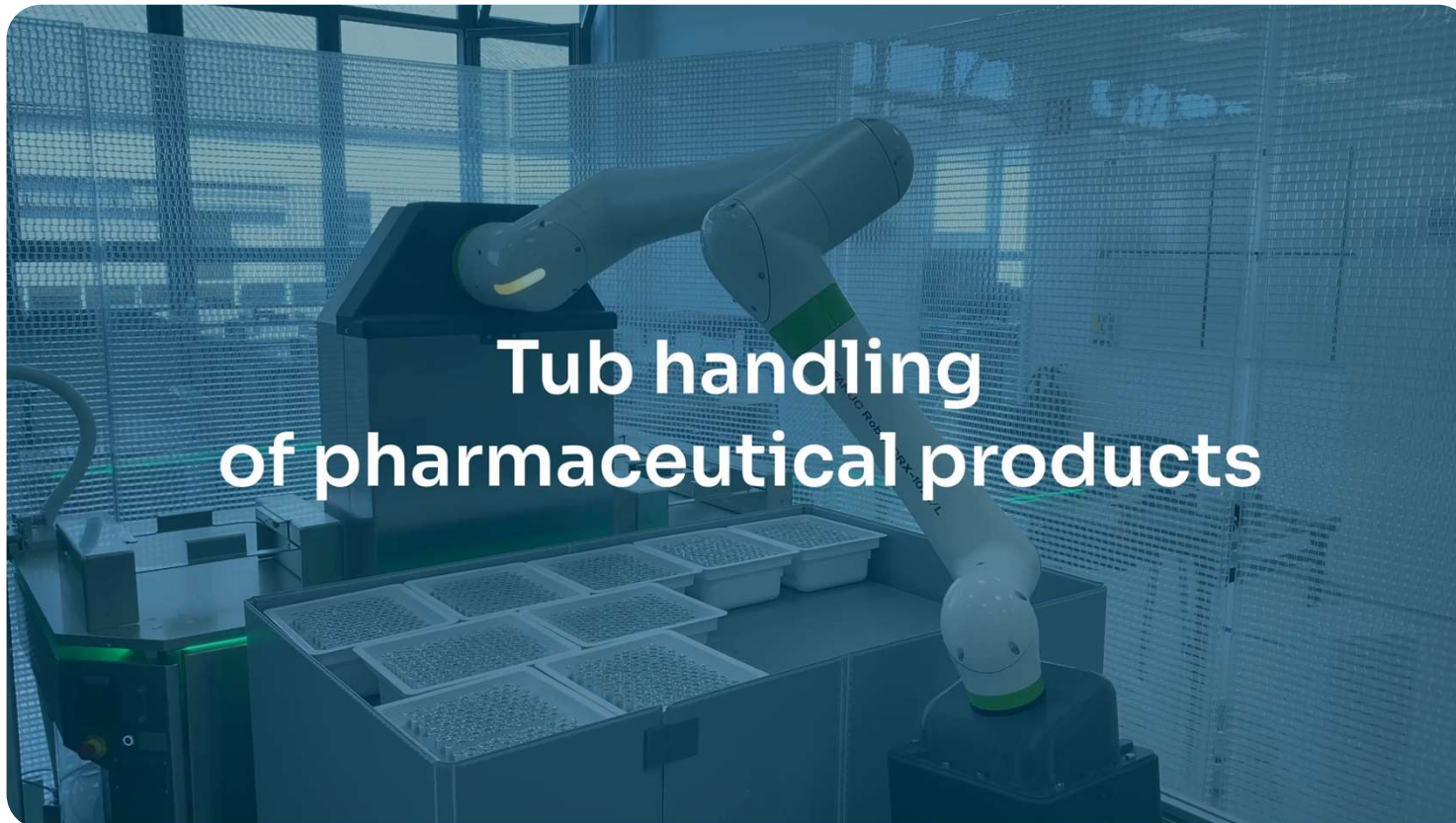
PROCESS

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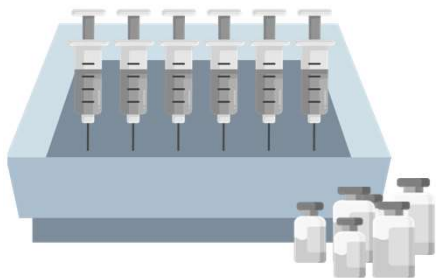
PROCESS VIDEO



Tub handling of pharmaceutical products

ATTRACTIVENESS

APPLICATION ACROSS PHARMA



The Tub Palletizer is a versatile unit that can be employed in scenarios where unsealed tubs or similar containers require stacking on pallets. The system is capable of handling tubs of varying sizes, ranging between 3 and 5 inches.

With minor modifications, the system can also be utilized for pallet unpacking purposes, such as filling downstream machines in the value chain or placing the tubs on a conveyor belt.

ATTRACTIVENESS

FLEXIBILITY OF THE SYSTEM



Location

The system is very compact and can be moved to different positions.



Control Cabinet

The control cabinet is installed inside the machine.



Vacuum

The vacuum required for the grippers is generated in the machine itself.



ATTRACTIVENESS

FLEXIBILITY OF THE SYSTEM



Mobility

The systems allows easy mobility due to its roller-based substructure.



Format

The necessary tub-specific programs can be created in advance. These can be called up flexibly as required.



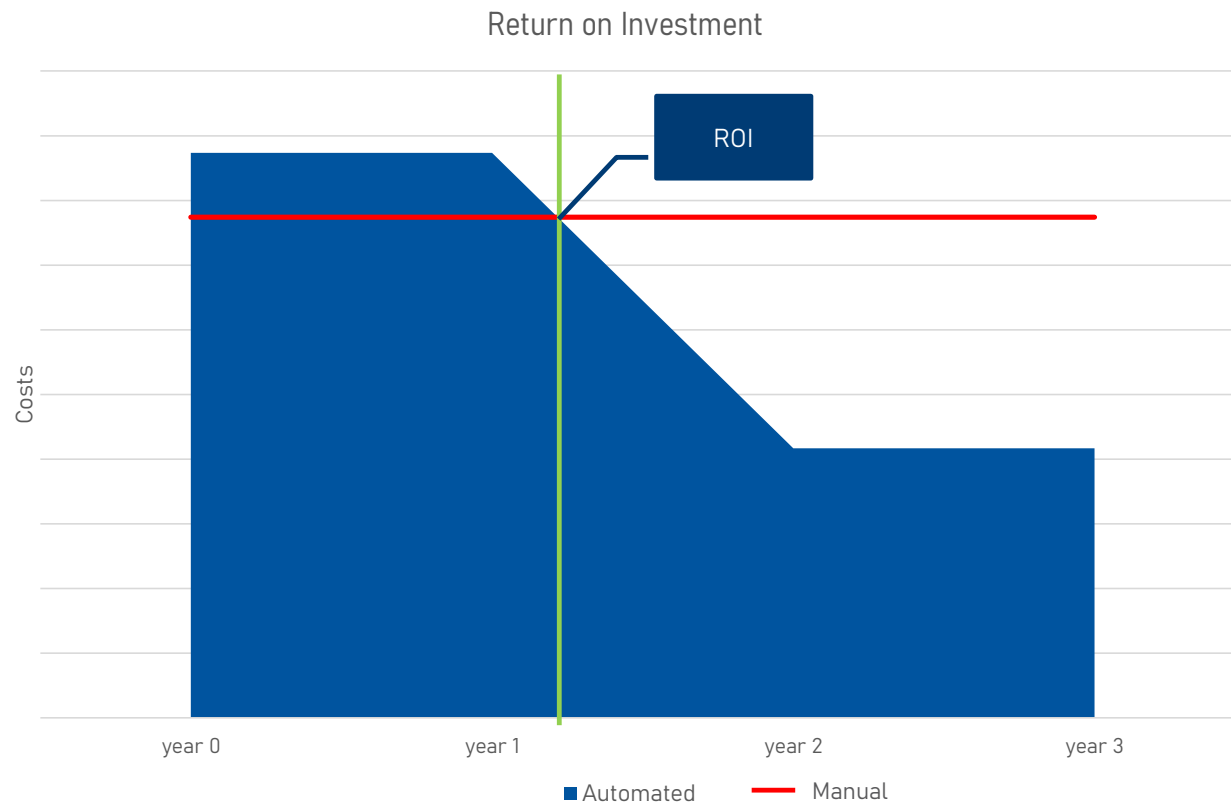
Integration

The system is highly adaptable to machines from different suppliers, where tubs or other types of containers are released at different positions and heights.



EFFECTIVENESS

RETURN ON INVESTMENT



EFFICIENCY AND RETURN ON INVESTMENT

Due to the high level of automation, one Tub Palletizer can **reduce the number of operators down to 1**. For this reason, the system has already paid for itself after 1.2 years.

SUMMARY

AUTOMATED TUB PALLETIZER



TECHNOLOGY

The robotic application with its six-axis movement replaces tiring and monotonous tasks.



EFFECTIVENESS

Reproducibility is increased since manual handling is replaced, leading to an improvement of the process quality.



EFFICIENCY AND RETURN ON INVESTMENT

With the robotic application only 1 operator is needed, and the system has a ROI time of only 1.2 years.



SUMMARY

AUTOMATED TUB PALLETIZER



ADDITIONAL SYSTEM

The robotic application was so attractive and efficient that Vetter has purchased 5 systems so far.

The Tub Palletizer should win because it has...

- ...a small footprint.
- ...a collaborative mode that supports a secure human-machine interaction.
- ...a wide range of uses.





THANK YOU FOR YOUR

ATTENTION!

ISPE SIG Robotics

