

ROBOTIC CELL FOR EXTRACTING WINE BOTTLES FROM CARDBOARD BOXES AND DEPOSE THEM IN SHUTTLES OF AUTOMATIC STORAGE

Goal of the project

Development of a robotic cell automatizing the storage process for later delivery by order through internet. The first application is loading sealed cardboard boxes with wine bottles, feed them one by one on a cutting line, cut the top of the box, extract the bottles one by one and put them on a rotary conveyor, then tilt the bottle in the last station, get it sideways with a vacuum gripper and lay it in a shuttle on cardboard supports previously inserted by the same robot.

Short description of the project

Wine bottle boxes are loaded, the top is cut, extracted bottles are put on rotary conveyor, tilted and laid in shuttle.

Project implemented by

SC Acord Exclusive SRL Timisoara

Implementation period

May-November 2017

Main activities

The wine bottle storage module has a storage capacity of $2 \times 12 = 24$ boxes with 6 wine bottles 750ml each, weighing $8\text{kg} \pm 10\%$ with the dimensions $170\text{mm} \times 250\text{mm} \times 310\text{mm}$.

The Top cutting line may be configured manually to cut cardboard boxes with 220mm up to 280mm length, 150mm up to 200mm width and $300\text{mm} \pm 10\%$ height.

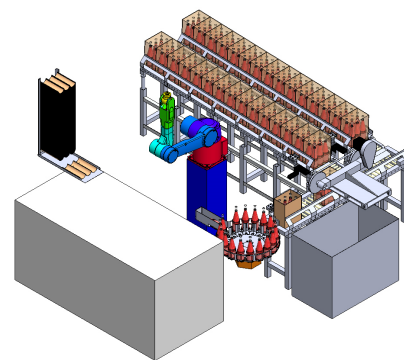
The rotary table storage module has 24 Positioning devices for a 0,75l wine bottles.

The Cardboard support storage and delivery module stores 48...54 supports to ensure the cell functioning for 30 minutes.

Results

The cell was developed with the technical assistance of the Research team and the financial support from the client.

The cell was tested on an experimental environment at the client's facility, and delivered to the end client



Applicability and transferability of the results

The cell may be further developed for other types of goods, as tetra packs, bottles of other dimensions, cans and other goods in food and beverage industry, as well as goods of other kind.

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Research team

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