Automated Mini-Cuke Packer

The increasing popularity of mini vegetables makes them attractive to growers although packaging can be labour intensive, impacting margins.

The new automated mini-cuke packer manufactured by CMP Automation (CMP) and designed by CMP in cooperation with Vineland Research and Innovation Centre (Vineland) benefits greenhouse suppliers by significantly reducing the amount of labour required in loading mini cukes on trays.
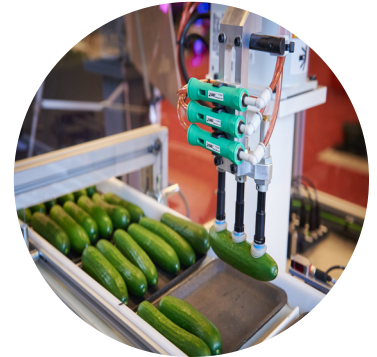
The unit harnesses modern and cost-effective technology including machine vision and pick-and-place robotics, to place mini-cukes on trays while ensuring consistent speed and quality.

Standard features
- #2S tray magazine with 150-tray capacity
- 300 (six-count) tray per hour per robot (throughput scales with additional robots)
- FDA food grade materials used where needed
- Easy access to internal components for tray loading/cleaning
- Industrial grade components for long life
- Minimal maintenance requirements
- Compact footprint - minimum 44" x 56". Actual size to be determined based on throughput and site requirements
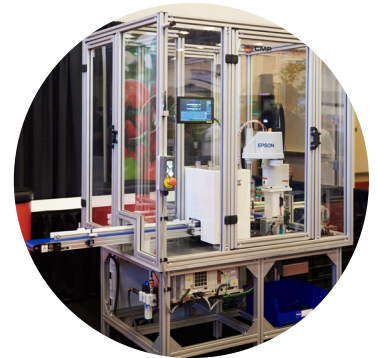- Minimal power and air requirements

Options
- Varying tray sizes or materials
- Higher throughput
- Bulk loader/hopper
- Machine vision analysis of length, width and stem/flower ends
- Mini-cuke reject based on user adjustable pass/fail criteria for length, width and curvature
- Touch screen for control and monitoring of vision system

View 1
Automated mini-cuke packer

View 2
Automated mini-cuke packer

Optional bulk loader/hopper

Increased scalability and quick payback

- Scalable in increments of 300 (six-count) trays per hour, the automated mini-cuke packer can be tailored to meet the needs of small to large operations
- Compared to a single, high throughput machine requiring a large initial capital investment, CMP's scalable solution allows for expansion over time
- Payback is typically two years, depending on options and capacity of the unit

Leverage existing grader or all-in-one solution

- For facilities with existing sorters/graders, the unit can be fitted to packing stations. Flexibility is maintained through a hybrid line for:
  - automatic loading of high-running tray sizes at some stations
  - manual hand-packaging of off-grade, low-running tray sizes, bags and boxes at other stations
- A bulk loader/hopper option is available for facilities without an existing grader, or requiring an intermediate accumulation stage. The bulk-loader facilitates dumping of mini-cukes into the hopper which then feed into the packing stage

Functionality

- The direction of curvature of each mini-cuke is identified using machine vision technology. The pick-and-place robot then rotates each cucumber prior to placing it on the tray. With the enhanced vision add-on option, mini-cukes are analyzed for length and diameter with the ability to reject those not meeting specifications
- For mini-cukes without curvature, the stem/flower end of each is identified and may be used to align the mini-cukes on the tray. An optional user-friendly touch screen allows for the setup of pass/fail dimensions and alignment mode and adds the ability to view/recall historical visual, dimensional and pass/fail data

Service and reliability

- Industrial grade components and FDA food grade materials (where necessary) are used in the construction of the unit to ensure a durable and reliable operation
- CMP visits each client facility to conduct an analysis of the packing area and workflow to generate an optimal solution. To ensure compliance with health and safety standards, a pre-start health and safety review (PSHSR) is conducted prior to leaving the factory with a report included on delivery

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