

Speed. Accuracy. Efficiency.

**THROUGHPUT SPEED**

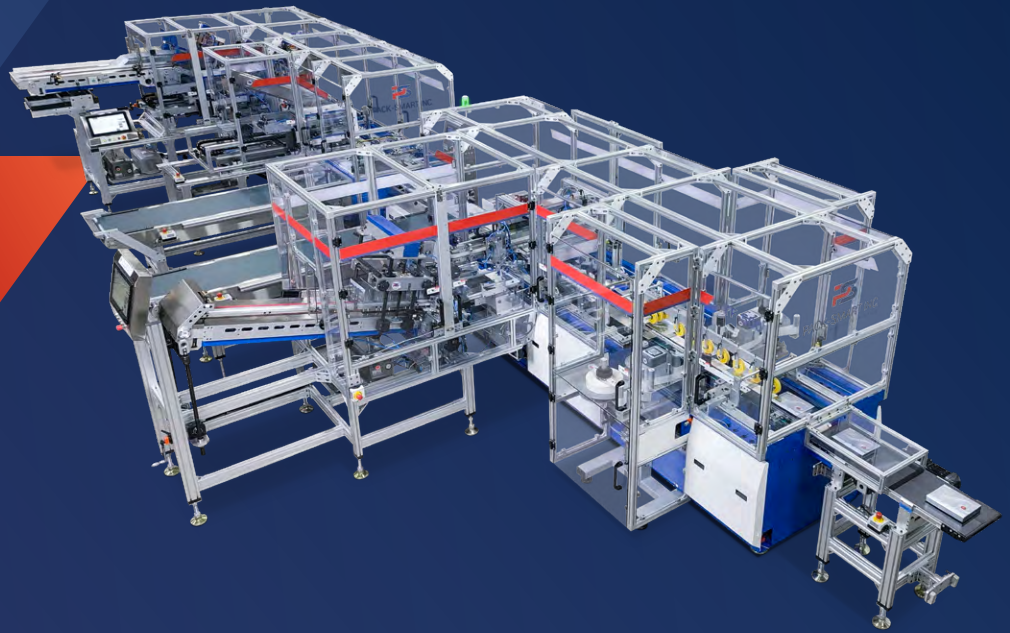
3,500 PPH

**CHANGEOVER REQUIREMENTS**

2 hours & 2 people

**SUPPORTED TRAY SIZES**

50–250 mm



TF-3500

# Tray Forming and Fulfillment System

Pack-Smart's TF-3500 tray forming and filling system is the ultimate solution for improving speed, quality, and reliability in a tray forming line.

Designed specifically with the food industry in mind, the TF-3500 fully automates the tray forming and filling process from start to finish. Its modular design allows for flexibility in designing a system for diverse product sizes.

With a product placement accuracy of  $\pm 0.4$  mm, the system ensures that each package fits precisely, every time—while maintaining a high throughput speed of 3,500 pieces per hour.

Governed by Delta-X software, TF-3500 allows real-time control of production data while mitigating quality assurance risks with End-to-End Reporting.

Every item is validated by an in-line weighing system, ensuring that production meets global regulations around weighing and labelling. Non-conforming products are diverted on the fly—no downtime required.



# Food-Grade Performance

## BUILT TO IP-65 STANDARDS

- › **Hygienic:** Withstands regular cleaning without affecting functionality
- › **Durable:** Guard against leaks, spills, and particulates

## NET QUANTITY STANDARDS

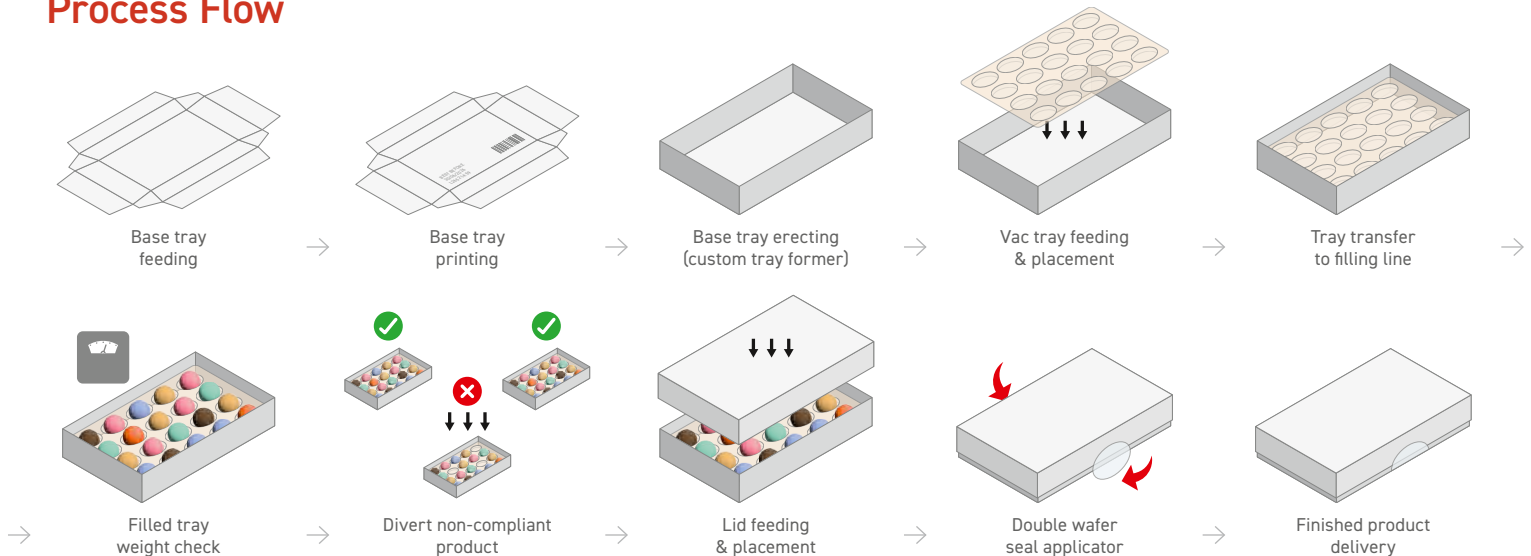
- › **Validation:** In-line weighing system ensures the product complies with international food packaging net quantity and labeling standards
- › **Quality:** Diverting module removes non-compliant products

## FOOD-GRADE COMPONENTS

- › **Food-safe:** Surfaces in contact with packaging are non-reactive 316 stainless steel
- › **Filtered Air System:** Eliminates potential contamination with particulates



## Process Flow



## Key Technologies

### ROTARY PICK AND PLACE

- › Smooth tray feeding with gentle planetary motion design. Grease-free timing belt design and food grade suction cups makes this module ideal for cleanliness and food security.

### FOUR CORNER FOLDING TOOLING

- › Supports tray sizes from 50 to 250 mm and board thicknesses from 10 to 40 pt, providing flexibility for various packaging requirements. Precision four-corner folding ensures consistent tray geometry. On-site forming improves OEE and reduces costs by eliminating the need to ship and store pre-formed trays.

### LABELLING

- › Apply all varieties of pressure-sensitive labels and secure wafers at line speeds up to 660 ft/min (400 labels per minute) and placement accuracy of  $\pm 0.4$  mm.

Zero downtime configuration allows for on-the-fly roll changes.

### WEIGHING

- › Add another element of quality control with the in-built weighing system. The scale weighs items in increments of 0.1 g, ensuring that production meets global net quantity and food labeling regulations, including EU, US FDA, and Codex standards.

### SORTING & DIVERTING

- › Maintain production integrity by diverting non-conforming products in line. Reduce manpower in manual handling and quality control processes with on-the-fly box reject.

### DOD INKJET PRINTING FOR BARCODES

- › Print high-resolution, variable product data at 600 DPI and speeds up to 500 ft/min using

a field-replaceable piezo drop-on-demand print head with 3.5 pL drop volume and 75 mm print width. The system supports traceability and regulatory compliance by printing critical data such as best-before dates, lot codes, production timestamps, and GS1 barcodes directly on the packaging line.

### AUTOLOADER

- › Extend loading capacity and reduce loading frequency with the high capacity AL-300 Autoloader. Its TPU Round Belts are resistant to food spillage and Fibre Optic sensors operate with high precision in a variety of temperatures.

### HUMAN MACHINE INTERFACE

- › Graphic HMI touchscreen connects the operator with the machine. Pack-Smart's HMI combines PLC and HMI into one single, easy to use package.



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ENGINEERING THE IMPOSSIBLE