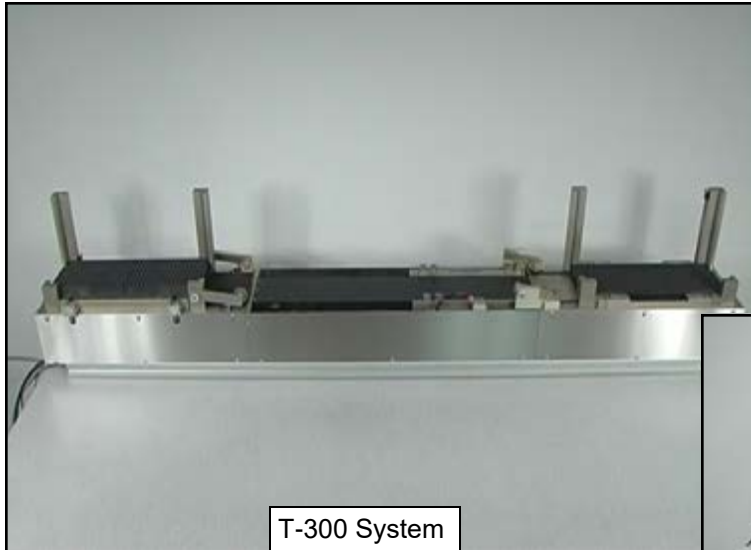# T-300 Tray Indexing System

Smooth, Precise Handling of JEDEC Trays
for Machine Builders and Systems Integrators

A video of the T-300 in operation is available on The APT web site.

T-300 System

Un-stacker Internal

The APT Advantages

- Lower Cost
- Fast to Market
- Reduced Design Risk

- Easy Integration
- Advanced Features
- No Special Software

The Handling Process

A stack of trays is placed on the topside of the input station. Each tray is automatically re-moved from the bottom of the stack, and transferred onto an indexer carriage, clamped in xyz axis and indexed to an initial position for processing. When a row, or group of rows has been processed, the carriage advances to the next pre-programmed position.
When all of the rows have been processed, the clamps release and the tray advances to an output station, where it is stacked. As the tray is being stacked, the carriage returns to the input station to receive another tray, and the process repeats.

Trays may be added or removed at any time without process interruption. Sensors , coupled to an internal controller, monitor the process and alert the user to any fault conditions.

APT Automation LLC

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T-300 Tray Indexing System

Features

- Top loading and un-loading allows trays to be added or removed from the system at any time without process interruption.

- The "next" tray is staged on the un-stacker for immediate loading when the indexer carriage returns. This optimizes throughput.

- The user is automatically signaled if the input stack is low or output stack is full. This is in addition to seven "fault condition" alerts that stop the process and warn the user.

- A "soft stop" feature prevents component shift or upset during tray moves.

- An initialization routine performs a system self-check at each power up.

- An internal controller automatically directs all motions, identifies fault conditions and provides alerts to the user.

- Trays are accurately clamped in position (x, y and z) axis during processing.

- The user's interface with the T-300 only requires a few simple signals (contact closures). No special user software is required, making integration quick and easy.

- A diagnostics mode can be entered with a simple switch closure. This allows the user to manually check all sensors and actuators for proper operation.

- Engineered for high reliability and long operation life at high production levels.

Typical Applications

- Laser Marking
- Assembly In-feed
- Tape & Reel

- Vision Inspection
- IC Programming
- Die Handling

- Dispensing
- Singulation
- Media Transfer

*Specifications

Tray types accommodated:	Thick & Thin JEDEC per Std. 95.1 & Thermoformed
Tray Matrix Storage:	16 matrix configurations can be stored internally
Tray stack capacity:	11 KG (25 lbs.)
Tray exchange time:	6-8 seconds typical
On-board controller:	Programmable Logic Controller (PLC)
Indexer repeatability:	+/- 0.02 mm (+/- 0.0008")
Indexer transport:	Micro stepper driven ball screw assembly
Fault Alerts:	6 fault conditions alerted automatically
User interface access:	Bottom or end entry
Surface finishing:	Exposed tooling— Nickel; Covers— SS
Services required:	24 VDC, 3 A, 60 - 80 PSI clean air
Footprint dimensions:	1445 x 204 mm (56.9 x 8") [3 module system]

*Specifications subject to change

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