DEVPROTEK, Inc.

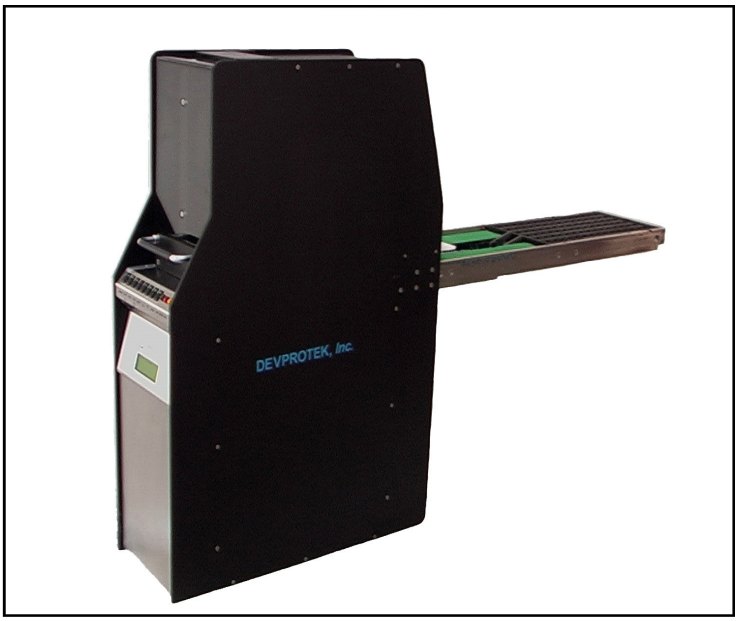
Self-adjusting, Automated Matrix Tray Feeders

FTF-21P

Devprotek's automated matrix tray feeder (FTF) supplies host machines with a wide assortment of size and shape variations of matrix trays. The FTF's unique conveyor with a repeatable, self-adjusting positioning system, presents the tray to the host machine's pick position. Offline magazine loading allows a second magazine to be filled with an exchange time of forty seconds. The unique Batch Overlap process allows component replenishment to the FTF while the host machine continues to process components in or out of the loaded tray. It is this Batch Overlap capability of the FTF that makes truly continuous operation a reality.

Automating the tray replenishment process allows the host machine to operate continuously, eliminating bottlenecks, which result in throughput maximization. As a result, electronics manufacturers can experience more than 30% improvement in machine utilization and flexibility. The exchange action is so smooth that even µBGA and small QFP parts remain stable during tray transfer.

The FTF is a remarkable self-adjusting, high throughput multi-tray feeder designed to integrate easily, maximizing floor space by mounting directly to the host machine's feeder bay. The tray feeder's unique self-adjusting feature allows the feeder to change tray configurations in a matter of seconds without the need for operator adjustments to the machine or tray feeder, thereby eliminating operator time and error.



FTF-21P
Tray Feeder Benefits

Random Access Capability
- On demand, multiple part number delivery to host machine.
- No pallets necessary- trays are placed directly in magazine.

Fast, Easy-Loading Changeover
- The FTF is ergonomically designed to facilitate fast, easy insertion and removal from host machine.
- The specially designed magazine guide allows easy access for magazine loading and removal.
- Tray magazines can easily be loaded on and off the machine to speed up the exchange process.

High Capacity Tray Exchange
- Trays are loaded directly into magazines.
- Tray magazine elevator holds a wide variety of thin and thick matrix trays.
- High-speed tray exchange in less than 7 seconds.

Flexibility
- Semiconductor vendors' thick and thin trays, such as Motorola, NEC, Mitsubishi, Sharp, Toshiba and Hitachi.
- JEDEC & IEC thick and thin matrix trays
- Microprocessor controlled
- Programmable conveyor speed

Batch Overlap Process
- Unique product system that allows non-stop operation of the host machine.

Host Communication
- Fully integrated to host machine software indicating "ready," "error" and "run" conditions or serial communication.

User Friendly Controls
- Intuitive push button controls allow precise tray motion and exchange cycles.
- Status indicator lights visually guide operators through the feeder set-up process.
- LCD displays system operation, setup parameters and error conditions.

The FTF-21P handles IEC and standard JEDEC thick and thin matrix trays, as well as semiconductor thick and thin trays from component manufacturers such as Motorola, NEC, Mitsubishi, Sharp, Toshiba and Hitachi. Trays are fed to the host along their longest length in a portrait type manner.

FTF-21P
Tray Feeder Specifications:

Magazine Capacity
- 21 Trays Single Pitch
- 10 Trays Double Pitch

Number of Magazines: 1

Tray Exchange Time
- 6 – 10 seconds (based on device and conveyor length)

Pick Location Repeatability
- ± 0.125mm

Magazine Weight
- 6.3 kg

Pitch
- 12 mm (Single Pitch) or 24 (Double Pitch)

Maximum Tray Size
- 334 x 180mm

Minimum Tray Size
- 312 x 122mm

Maximum Tray Height
- 8mm (half pitch) or 18mm (full pitch)

Minimum Tray Height
- 5.5mm

Maximum Tray Weight
- .36 Kg

Maximum Tray Warpage
- **<.5%**

Tray Aspect Ratio
Trays feed along their longest length (portrait)

Tray Size Alignment
- Automated, Self-Adjusting
- Some trays need programmable setup adjustments

Electrical Requirements
- 24 VDC or 42 VDC @ 3 A Peak, 1.5 A Rest

Communication Signals
- Input driven by I/O or RS-232 serial communication (optional RS-485)
- 0 V is logic low
- 24 VDC is logic high
- Outputs are open collectors or are configurable to source 24VDC

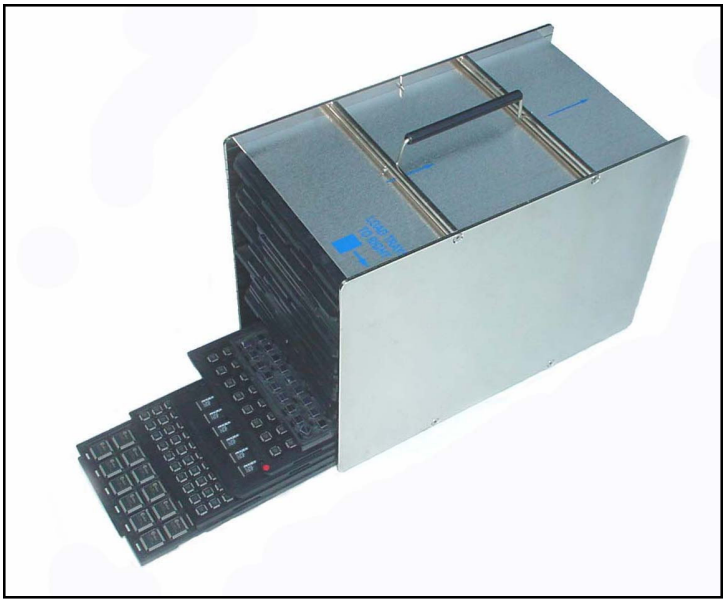
Ports
- One Program, One Serial

Temperature Range
- 10-35 C°

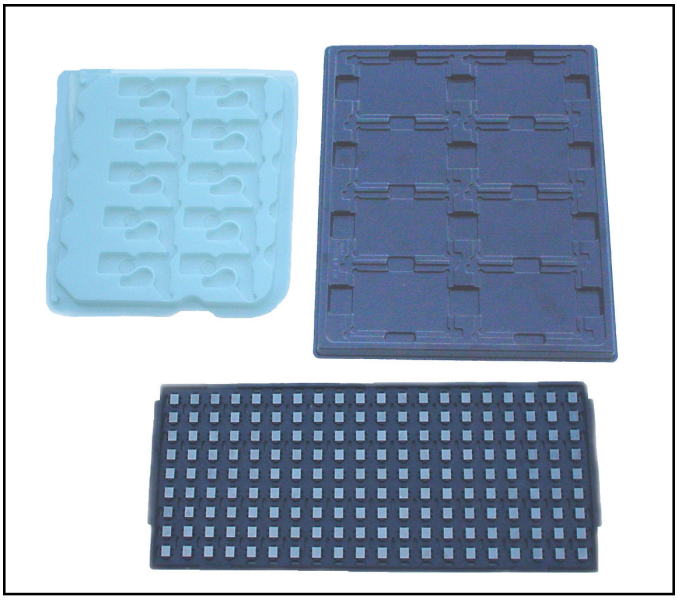
Mass (without magazine)
- 40 Kg.

Physical Dimensions:
Length: 1166 mm
Height:: 781 mm
Width: 205.6 mm

Statutory Compliance
- CE conformance, Semi-S2 and Semi-S8



Sample magazine with various size trays.



Specially designed feeders available for custom trays (Odd Form).



Push button controls with LCD user interface and status indicator lights.

DEVPROTEK, Inc.

4 Clinton Drive
Hollis, NH 03049
Tel (603) 577-5557
Fax (603) 577-8788
www.devprotek.com