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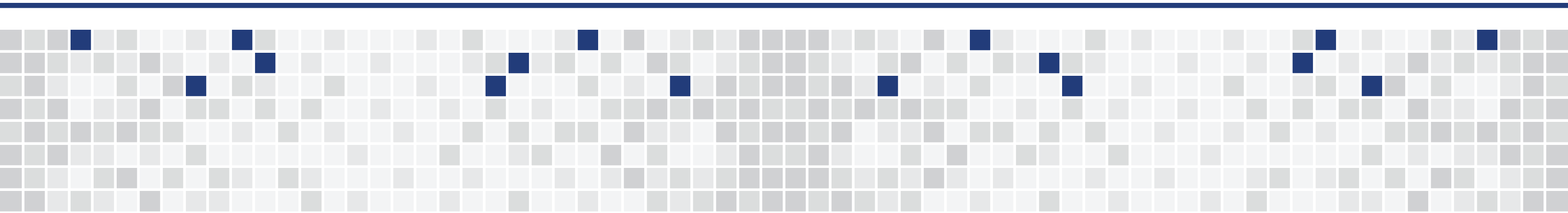
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## COMPREHENSIVE FEEDER PORTFOLIO



Robust component input solutions  
for virtually any application



# Feeding Solutions

## Versatile and reliable

component handling solutions  
from Universal Instruments

In the early 1990's, Universal Instruments developed the GSM Platform – a modular platform-based surface mount technology machine that quickly became the industry standard. Today that leadership continues with Universal's Fuzion® Platform.

A modular design enables Fuzion to handle a wide range of components and quickly respond to changing products and applications. A critical element of this flexibility is the ability to provide alternative methods of component presentation.

Universal's cost effective feeder solutions provide reliable pick performance for components in tape, tube, matrix tray, waffle, wafer and bulk packaging. These feeders improve component presentation, reduce feeder replenishment and changeover time, increase feeder capacity, and improve flexibility, tact time and throughput. Feeder support products provide additional benefits, such as offline feeder setup, storage and organization of idle feeders.

- Universal's assembly and automation platforms support the widest variety of input types in the industry
- From strip tape NPI and tube feeders to high-volume continuous-splice tape feeders, random-access matrix tray feeders, and odd-form feeders
- Extensive portfolio of standard tooling with custom design and implementation services to take on virtually any automated assembly challenge



## Solutions for every application

Our global customer base employs a wide range of processes and technologies to build the most advanced products in the world. Universal's years of experience and applications knowledge coupled with the industry's broadest technology portfolio enables us to provide solutions that help our customers *build better*.

### PRECISION AUTOMATION SOLUTIONS



Applications requiring high-accuracy alignment, flex handling, cutting and forming. May combine inspection, placement and bonding technologies.

- Large & high-part count PCB & SSD modules
- IoT, High-Reliability Industrial, Medical & Mil-Aero PCB & modules
- Mobility (Phone, Watch, Earbud) modules
- Automotive, Lighting & Sensing modules

### ADVANCED PACKAGING SOLUTIONS



2D, 2.5D and 3D semiconductor applications requiring high accuracy and efficient die handling. From direct die and flip chip to multi-die heterogeneous integration.

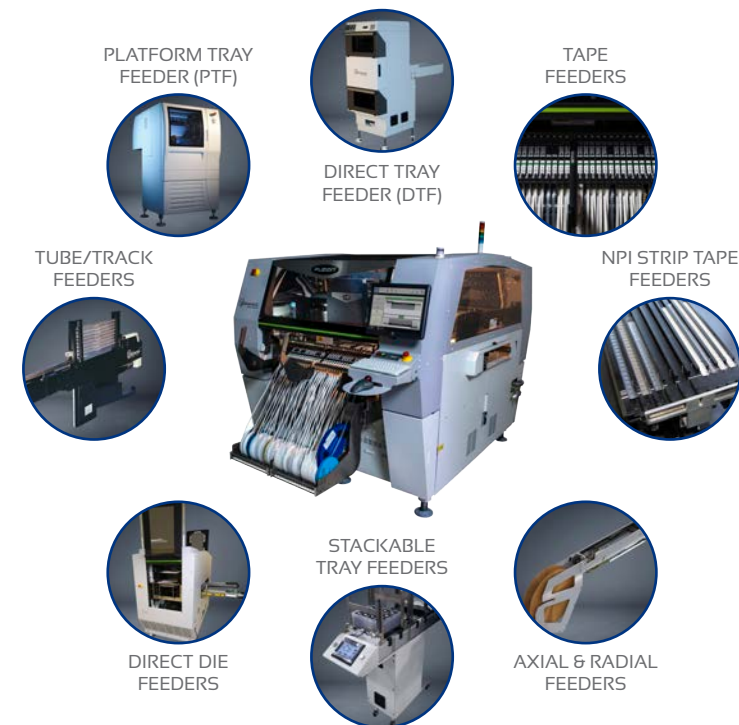
- Large & high-part count electronics
- IoT, Hi-Reliability Industrial, Medical & Mil-Aero modules
- Mobility (Phone, Watch, Earbud) modules
- Automotive modules

### PCB ASSEMBLY SOLUTIONS



Traditional printed circuit board assembly, including standard surface mount placement and through-hole component insertion.

- Large & high-part count PCBA
- IoT, Hi-Reliability Industrial, Medical & Mil-Aero PCBA
- Mobility (Phone, Watch, Earbud) PCBA
- Automotive, Lighting



## Productivity enablers

Our comprehensive feeder portfolio features capabilities that maximize utilization and production efficiency.

- Dynamic feeder exchange with quick-change banks
- Splice detection and feeder hot swap
- Automatic feeder and reel marriage via barcode scanning
- Offline Feeder Setup Station enables parallel setup
- Consumption tracking and integrated auto-replenishment
- Automated tray feeders with non-stop replenishment and automatic exchange

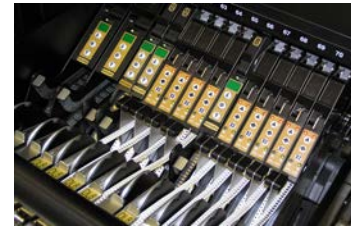


## HIGH-PERFORMANCE TAPE FEEDERS

### ion Feeders

#### Flagship tape feeder performance

- Precision accuracy (27µm @ Cpk>1)
- Easy/fast loading
- 4mm tape compatibility
- 4/8mm dual-lane and 12/16mm single-slot
- Dual-lane 8mm doubles capacity, up to 144 inputs per machine (288 on FuzionXC)
- Load-in-place on feeder bank reduces handling time
- Operator-friendly ergonomics (size, weight, latching)
- Flexible reel management (baskets or optional reel holders)
- Strip-tape-friendly
- Three-point location for high accuracy and repeatability
- Standard high-performance O1005 capability
- Multi-pitch (SL/DL), independent pitch and index speed (DL)
- Latch sensor enables safe hot swapping
- High-utilization continuous production with splice detection



### Gold Plus Feeders

#### Value-driven tape feeding

- 8-104mm tape widths, multi-pitch
- Common 8mm feeder for paper or embossed media packaging
- Single feeder supports a variety of pitches
- Load times of less than 30 seconds
- Integrated reel holders
- Continuous-splice and hot swap replenishment capability
- Precision locating features (8/12mm) for improved chip performance
- Intelligent/smart feeder technology
- Unique feeder ID and reel detection sensor, compatible with PSV
- Highly reliable design with low maintenance requirements



### NPI Strip Tape Feeder

#### High-mix tape feeding

- Single-lane, single-slot
- Multi-lane, multi-slot, matrix tray style



## RANDOM-ACCESS TRAY FEEDERS

### Direct Tray Feeder (DTF)

#### High-performance tray feeding

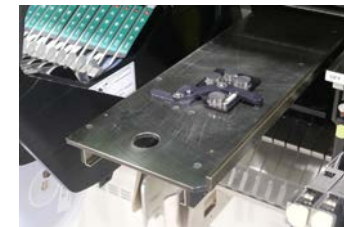
- Components picked directly from tray (supports odd-form)
- Up to 58 different part numbers
- JEDEC or non-standard vacuum formed matrix trays
- Operates in 3 modes: Exchange (no downtime for replenishment), Concurrent (combined for maximum capacity), and Job Changeover (zero setup time)



### Platform Tray Feeder (PTF)

#### Multi-part tray feeding efficiency

- No base machine feeder capacity consumed
- Up to 58 different part numbers
- Parts are pre-oriented, allowing for gang pick
- Stackable functionality accommodates higher-volume parts
- Automatic empty tray removal



### Stationary Matrix Tray Feeder

#### Single-part tray feeding

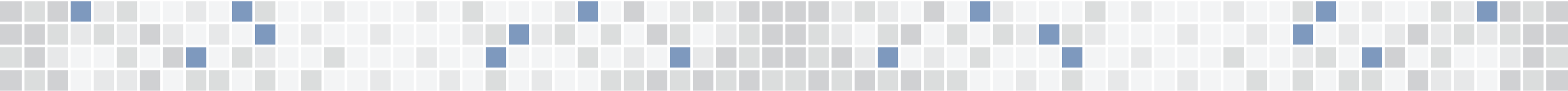
- Single-tray, single-part number tray feeder
- Adjustable tray and component height



### Stackable JEDEC (JTF) & Vacuum Tray Feeder (VTF)

#### Automated tray feeding for continuous production

- JTF provides JEDEC tray support
- VTF provides vacuum tray support
- Single part number, 40-tray capacity
- Occupies only 19 feeder slots to maximize the feeder capacity
- Non-stop 20-tray replenishment
- Less than 10 seconds replenishment time
- Less than 4 seconds automatic tray exchange time





## SPECIALTY FEEDERS

### DIMM Feeder

*High efficiency for challenging DIMM automation*

- Supports DIMM connector applications
- Dedicated trays or vacuum-form trays supported
- Auto-eject of trays
- Single or dual tracks supported



### Radion & RadionX Tape Feeders

*High-speed radial component feeding*

- Enables placement of escaps, LEDs, boxcaps, MOVs, other radial lead components
- RadionX offers precision lead forming and cutting
- Tape index of 12.7mm or 15mm; single, dual or triple-index capability
- Component bodies up to 20mm diameter and 30mm tall
- Supports ammo pack or radial reel packaging in the same holder; splice compatible



### Axial Feeder

*High-speed axial component feeding*

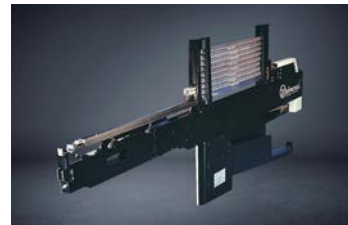
- Enables placement of high-density 5mm & 10mm axial-lead components
- Component bodies up to 8mm in diameter & 20mm long
- Lead pitches from 8mm to 30mm
- Supports ammo pack or axial reel packaging
- Splice compatible



### Track & Multi-Tube Feeders

*Versatile tube & track feeding*

- Adjustable track, multi-input track, single-input multi-tube
- Multiple-input track; tubes with parts up to 28mm tall
- Four-lane track feeder supports up to 4 part numbers
- Multi-tube, single-input ejects empty tubes while picking



### High-Speed Wafer Feeder (HSWF)

*The ultimate multi-die solution for heterogeneous integration*

- Maximum die size range & thinnest die; panels up to 635mm x 610mm (FuzionSC)
- 14 high-precision (sub-micron X,Y,Z) servo-driven pick heads
- High-precision (sub-micron X,Y,Z) servo-driven ejector
- Up to 16K cph with dual wafer tables
- Up to 52 unique wafers types at once; 100mm, 150mm, 200mm, 300mm



## FEEDER SUPPORT PRODUCTS

### Removable Feeder Banks

*Convenient feeder configuration*

- Quick-change option
- Products can be set-up offline
- Allows feeders to be pre-configured on all banks
- Ideal for easy and fast product changeovers

### Feeder Bank Change Cart

*Streamlined product changeover*

- Easy to maneuver
- Guides assist loading to machine
- Simple transportation from setup table to machine
- Enables full bank to/from machine exchange



### Offline Feeder Setup Station

*Efficient product setup*

- Production feeder setup
- Allows full-bank or single-feeder replenishment
- Reduces production changeovers
- All locations have power to assist in feeder setup
- Top-loading tape compliant



### Offline Feeder Setup Station for Radial & Axial Feeders

*Efficient product setup for through-hole components*

- Production feeder setup for through-hole components
- Reduces production changeovers
- All locations have power to assist in feeder setup



### Feeder Storage Rack

*Organized feeder storage*

- Store tape, track or tray feeders in one convenient location close to your line
- Streamline product changeovers
- Holds 141 x 8mm single input feeders
- Improve manufacturing efficiency

