



MIKRON POLYFEED™
A solution for complex geometry
components & multiple variants





COMPONENT FEEDING IS A MAJOR
FACTOR IN PRODUCT ASSEMBLY. WHEN
FACING **DIFFICULT PARTS** TO BE FED OR
MULTIPLE VARIANTS, MIKRON HAS THE
SOLUTION : POLYFEED

MIKRON POLYFEED™

A STANDARD FLEXIBLE FEEDING SOLUTION

With this third generation of Polyfeed, Mikron offers a flexible feeding system based on a unique patented vibration system coupled with industrial machine vision recognition and a 4-axis cartesian robot to feed virtually any part of various forms and dimensions. The Polyfeed is a perfect fit for Mikron's high performance assembly systems. Available in two versions, you can count on it for flexibility, short delivery time, reusability and speed.

The Polyfeed will be best used in applications where classical bulk feeding systems find limitations:

- Parts that are fragile or have a complex geometry
- Multiple variants requiring quick changeover
- Evolving component design

The feeding speed can reach 80 parts/min, depending on component design, with component sizes from 2 to 150 millimeters.

YOUR BENEFITS

Part changeover flexibility

- Exchangeable selection plate for pre-orientation of the parts
- Teachable vision system
- Auto calibration of the vibration parameters

Easy handling of variants

- Variants are stored by the controller
- Only 2 minutes to bring a new variant into production

Short delivery time

- Fully standard
- Available from stock

High reusability

- More than 95% reusable (less investment)
- Specific tooling reduced to the minimum

Fast implementation

- Standard platform
- Fully standalone

Small footprint

- One Polyfeed can replace multiple bowl feeders
- Layout flexibility

A proven track record

- More than 120 machines installed since 1998, across a full range of industries from medical to consumer goods.
- One dedicated team delivers the full solution

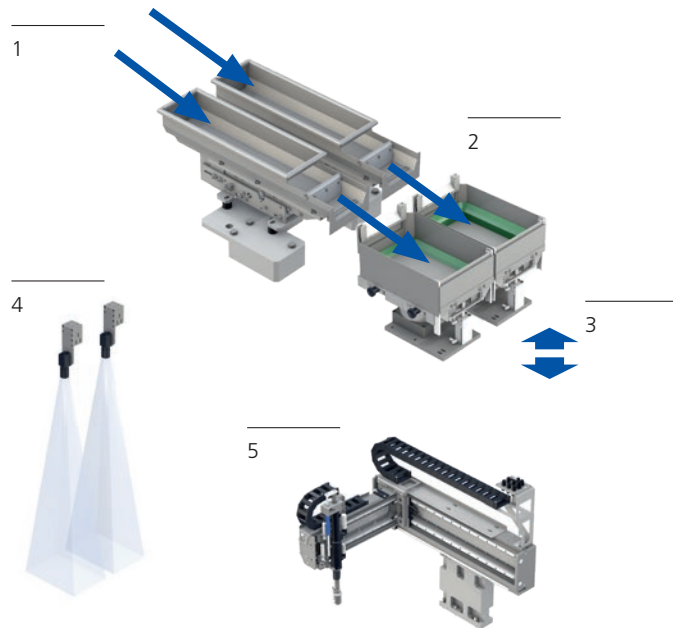


Mikron Polyfeed

5 REASONS TO WORK WITH MIKRON

1. Proven know-how – over 100 years of experience with precision machinery – close to 40 years in assembly
2. Reliable and technical production solutions with high added value – mastery of complex processes, standardized and proven automation platforms
3. Short delivery time – quicker time to market
4. Mikron worldwide organization is committed to your project success – from project fulfillment to 24/7 customer service
5. Long-term partnership – industry references

RELIABLE, INNOVATIVE AND STANDARD SOLUTION FOR THE AUTOMATED FEEDING OF COMPONENTS



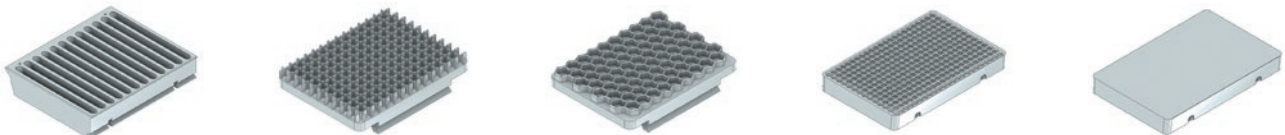
FROM CHAOS TO ORDER IN 5 STEPS

1. Two different parts can be loaded in bulk into the buffer
2. Parts drop by vibration from buffer onto a selection plate
3. The selection plate is vibrated at specific frequencies and amplitudes to agitate the components.
4. A vision system inspects the components on the selection plate and identifies which are laying in a position suitable for being picked. The coordinates are sent to the 4-axis robot.
5. The robot picks all identified components placing them in the proper orientation to a part nest.

Operations are repeated alternately on two selection plates to ensure a non stop feeding.

PRE-ORIENTATION OF THE COMPONENTS

The selection plate, designed to optimize the number of good pickable parts



TECHNICAL SPECIFICATIONS

Flexible part feeding system, vision auto-guided 4-axis robot

| | |
|-----------------------|--|
| Component size | Millimeters |
| Integration | Linked to assembly machine P&P via transfer conveyor or direct loading to pallets on main conveyor |
| Selection plate sizes | 2 selection plates per Polyfeed (mm) |
| Assembly Speed | Up to 80 cycles/min (max speed linked with components design) |
| Dimensions | Width x Depth x Height (mm) |
| Control System | Industrial PC, real time software |
| Vision System | 2x high resolution cameras, 4 standard lighting configuration, Cognex based vision algorithm |
| Cleanroom | Compatible for cleanroom ISO 7 (class 10,000) |
| Handling system | Embedded 4-axis Cartesian Robot |
| Accuracy | Millimeters |

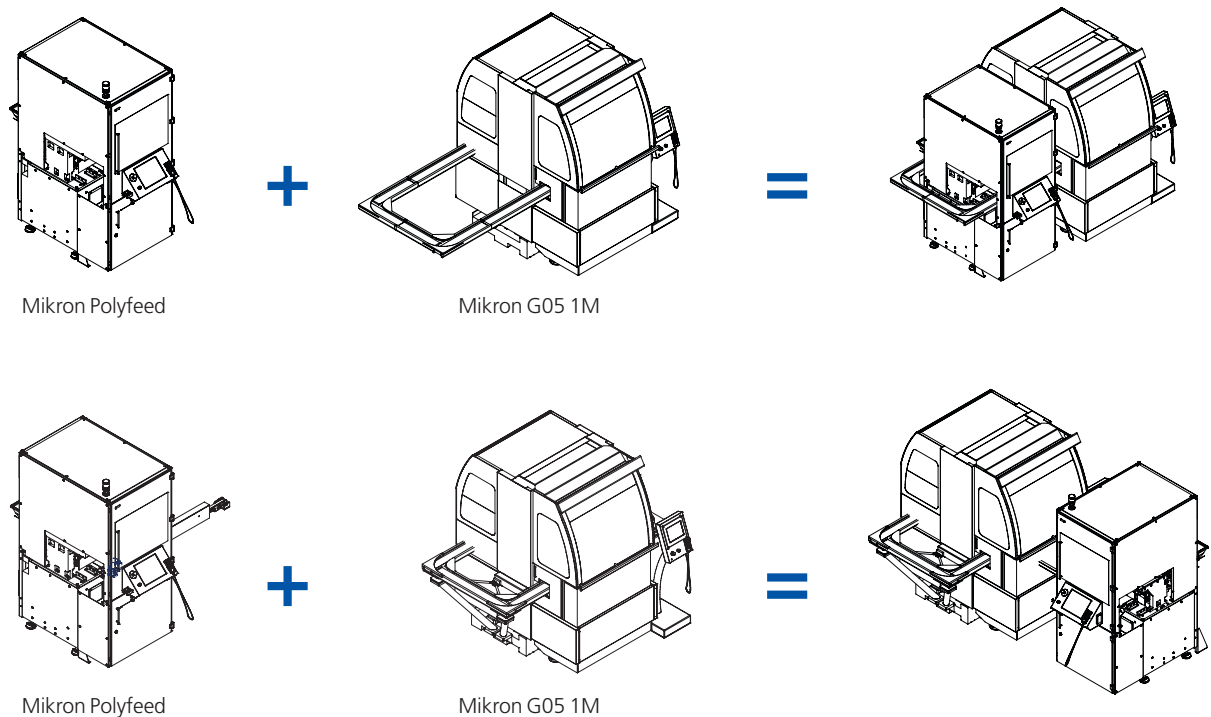
STANDARD PLATFORMS

| | 160 | 240 |
|-----------------------|-------------------|-------------------|
| Component size | 2 to 50 | 5 to 150 |
| Integration | ✓ | ✓ |
| Selection plate sizes | 160 x 240 | 240 x 320 |
| Assembly Speed | ✓ | ✓ |
| Dimensions | 735 x 1720 x 2424 | 926 x 1900 x 2424 |
| Control System | ✓ | ✓ |
| Vision System | ✓ | ✓ |
| Cleanroom | ✓ | ✓ |
| Handling system | ✓ | ✓ |
| Accuracy | +/- 0.1 | +/- 0.2 |

POSSIBLE CONFIGURATIONS

The Polyfeed Standalone can be integrated to an assembly line in two ways :

- Picked components are placed or assembled directly onto the assembly pallet that is indexed within the Polyfeed.
- Picked components are placed onto indexed pucks travelling on Mikron link system, which transfers the components to a station within the assembly cell for loading to the pallet.



COMPONENTS THAT CAN BE PICKED WITH A POLYFEED

A single Polyfeed can handle multiple variants of a component or feed components with complex geometry

Multiple variants



Multiple variants



Multiple variants



Multiple variants



Complex geometry



ABOUT US

To date, Mikron Automation has installed more than 3,800 assembly and testing systems worldwide. Its international customers operate in the following markets: pharmaceutical, medtech, automotive, electrical/electronics, consumer goods and construction/building. Mikron Automation currently employs around 620 people and is headquartered in Boudry (Neuchâtel), a region that is regarded as the heart of the Swiss watchmaking industry. It also has sites in Denver (USA), Singapore, Shanghai (China) and Kaunas (Lithuania).

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