



# Genesis Platform Solutions

The flexibility you want.  
The performance you need.

# redefine **productivity** with **Genesis**<sup>™</sup> Platform **solutions**

“Genesis will energize your high-performance assembly in any production environment”

**Now, more than ever, you need to be agile, in control of capability and capacity, responsive in a highly dynamic environment, and ready for technology challenges over time. But how do you plan for the unknown? What if you need to double output, or place new components? How can you best manage feeder allocations, or squeeze more productivity out of existing floorspace?**

**You'll find the answer in Genesis. The perfect foundation for today's diverse requirements with the security to meet tomorrow's uncertain challenges.**

**Genesis offers the best in modular performance, delivering the flexibility you want and the performance you need. Based on the platform philosophy originated by Universal Instruments, Genesis provides commonality and scalable performance with single, dual, and quad-beam models for maximum productivity at all volumes regardless of product mix.**

## **Throughput and performance built in**

Genesis was designed with all-out performance in mind. By leveraging technologies designed for speed, the Genesis portfolio boasts the fastest quad-gantry machine on the market with unbeatable throughput and cost performance. Patented VRM technology powers the positioning system and revolutionary Lightning<sup>®</sup> head – the fastest in the industry. Innovative spindle and feeder designs complement the core technologies for an even greater advantage. And, Genesis is able to maintain its outstanding performance through a wide range of components with no derate.





### Small part placement? Precisely.

What good is industry-leading speed without accuracy? Patented technologies and specific tools for precision placement give Genesis the outright lead in small part performance. Lightning head technology sets itself apart from the competition with high-accuracy individual direct-drive theta in the spindles, and closed-loop controls for X,Y, Z, Phi, valves and pick/place touchdown. Genesis also incorporates automated features to compensate for variability in components, feeders, and boards. Accuracy begins at the positioning system on Genesis with a thermally-stable VRM linear motor with dual-drive architecture for reduced settle times and no beam whip.

### True flexibility for optimal productivity

From prototyping to volume production, Genesis is the factory-wide solution you've been waiting for. One high-performance platform for all your manufacturing needs. Unsure of what you might be building tomorrow? No problem. Genesis handles high-mix easily with the largest board size capability and head technologies that address the broadest component range in the industry, requiring no hardware reconfiguration for product changes. Simply change the program, not the line or heads. Modify, reassign, and rebalance as required. Leverage chipshooter and flexible fine pitch capabilities on one future-proof machine and reap the benefits. This is true flexibility.

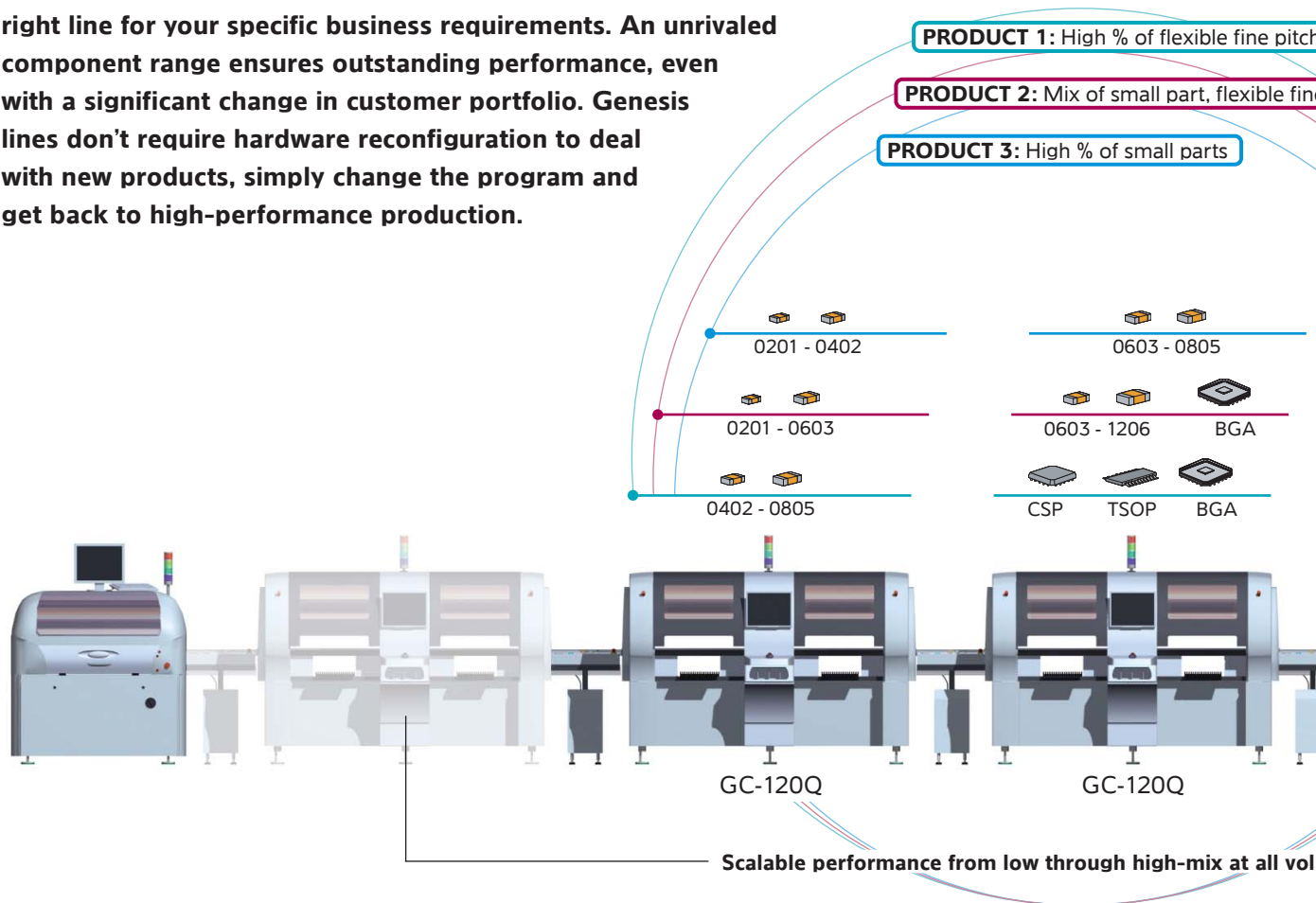


### Uptime by design

Productivity cannot be measured by a machine's performance metrics alone, but also on the percentage of time spent delivering on its promises. Ease of maintenance, minimal downtime, and low cost-of-ownership were priorities in the Genesis design from its very conception. Robust technologies with fewer moving parts and easy access assure that you spend your time building product and adding to your bottom line.

## Genesis – change the program, not the line

Genesis solutions give you the flexibility to configure exactly the right line for your specific business requirements. An unrivaled component range ensures outstanding performance, even with a significant change in customer portfolio. Genesis lines don't require hardware reconfiguration to deal with new products, simply change the program and get back to high-performance production.



### Lightning Head technology

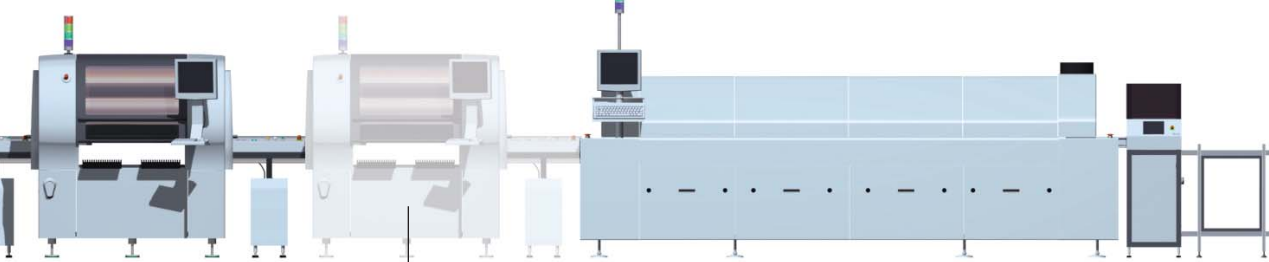
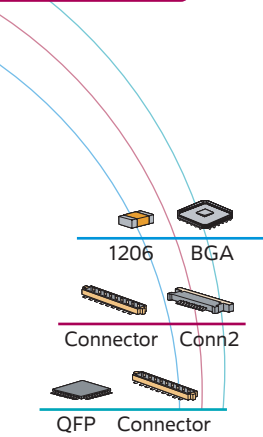
Universal's Lightning head takes the guess work out of configuring your factory for maximum flexibility and productivity. Lightning delivers performance in the form of the the industry's fastest tact rate. Its 01005 - 30mm square component range is without comparison, allowing you to be proactive rather than reacting to the next product you're asked to build. Lightning is speed without compromise.

## Scalable performance

What is modularity? It is the final element of complete factory-wide efficiency. Flexible, high-performance cells in scalable line configurations. Single, dual and quad-beam platform architectures allow you to easily adapt to changes in volume. Add modules for additional throughput or feeder capacity. Genesis is the only high-speed solution to satisfy all demands, regardless of product mix or production volumes.

n / 1 connector

e pitch, odd form



GX-11S

umes

## InLine7 Head technology

Our component range doesn't stop at Lightning's 30mm square maximum. The InLine7 Head quickly and accurately places components as small as 0201 up to 55mm square with single field-of-view inspection. This overlapping component range provides even greater flexibility in programming for maximum efficiency and utilization.



# Genesis Platform Overview

Genesis provides scalable performance with incremental units of capacity via single, dual, and quad-beam versions for maximum productivity at all volumes regardless of product mix.



## S-Series (single-beam) Genesis

### S-Series Genesis

- Single-beam, dual-drive overhead gantry system
- Patented VRM<sup>®</sup> linear motor positioning system
- High-mix / low-volume environments

### Genesis GC-30S

- One 30-spindle rotary Lightning placement heads
- Dual on-the-head camera optics
- Spec Speed: 0.11 sec (32,000 cph)
- Range: 0402mm (01005) - 30mm x 30mm
- Vision capable of 217µm pitch bumped devices
- Max PCB Size: W610mm x L635mm (24" x 25")
- Feeder inputs: 136 (dual-lane 8mm tape)
- Feeder types: tape

### Genesis GX-11S

- Mixed-head / dual-head configuration
- Upward-looking camera optics
- Spec Speed: 0.24 sec (15,300 cph)
- Accuracy: +/-45µm @ 1.33 Cpk
- Range: 1005mm (0402) - 55mm x 55mm SFoV
- Max PCB Size: W610mm x L813mm (24" x 32")
- Feeder inputs: 120 - 132 (8mm tape)
- Feeder Types: wafer, waffle pak, gel pak, tape, tube, bowl

## D-Series (dual-beam) Genesis

### D-Series Genesis

- Dual-beam, dual-drive overhead gantry system
- Patented VRM<sup>®</sup> linear motor positioning system
- Medium-mix / medium-volume environments

### Genesis GC-60D

- Two 30-spindle rotary Lightning placement heads
- Dual on-the-head camera optics
- Spec Speed: 0.063 sec (57,000 cph)
- Range: 0402mm (01005) - 30mm x 30mm
- Vision capable of 217µm pitch bumped devices
- Max PCB Size: W508mm x L635mm (20" x 25")
- Feeder inputs: 136 (dual-lane 8mm tape)
- Feeder types: tape

### Genesis GI-14D

- Two 7-spindle FlexJet3 placement heads
- Upward-looking camera optics
- Spec speed: 0.12 sec (30,000 cph)
- Range: 0603mm(0201) - 55mm x 55mm SVoF
- Components up to 25mm tall
- Max PCB size: W610mm x L813mm (24" x 32")
- Feeder inputs: 120 - 144 (8mm tape)
- Feeder types: tape, tray, tube, component strips, bowl, odd form, wafer, waffle & gel pak

### Genesis GX-11D

- Mixed-head / dual-head configuration
- On-the-head and upward looking camera optics
- Spec speed: 0.2 sec (18,000 cph)
- Accuracy: +/-45µm @ 1.33 Cpk
- Range: 1005mm (0402) - 55mm x 55mm SFoV
- Max PCB Size: W610mm x L813mm (24" x 32")
- Feeder inputs: 120 - 132 (8mm tape)
- Feeder Types: wafer, waffle pak, gel pak, tape, tube, bowl



## Q-Series (quad-beam) Genesis

### Q-Series Genesis

- Quad-beam, dual-drive overhead gantry system
- Patented VRM<sup>®</sup> linear motor positioning system
- High-volume environments

### Genesis GC-120Q

- Four 30-spindle rotary Lightning placement heads
- Dual on-the-head camera optics
- Spec Speed: 0.03 sec (120,000 cph)
- Range: 0402mm (01005) - 30mm x 30mm
- Vision capable of 217µm pitch bumped devices
- Max PCB Size: W350mm x L350mm (13.8" x 13.8")
- Feeder inputs: 144 (dual-lane 8mm tape)
- Feeder types: tape



## Standard Features

- Dual-drive positioning system with patented VRM linear motor technology for higher accelerations and faster settle times
- Magellan digital upward-looking cameras with combination lighting and on-the-fly vision acquisition
- Two on-the-head cameras (high-magnification and large field-of-view) on Lightning head
- Real closed-loop control with X, Y and Z feedback during pick and place and 1-micron resolution encoders for superior accuracy and repeatability
- Broad component range, including chips, fine-pitch, BGA/CSP, semiconductors or odd form components
- Vacuum and gripper nozzles for odd-form and non-standard components
- Windows<sup>®</sup> Operating System and UPS+ platform software with an intuitive, customizable user interface with multiple language support. Tools include diagnostics, CAD import, programming, optimization, simulation, line balancing and performance monitoring.
- Multiple inspection algorithms for efficient component placement with minimum programming time
- Intelligent feeder interface
- Precision-machined frame – within 1 micron from corner to corner
- New Product Introduction (NPI) Software



## Options & Accessories

- Spliceable High-Performance Gold Tape Feeders (single and dual-lane)
- Family feeder setups with Dimensions Line Level Software to reduce changeover time
- Off-line Feeder Setup & Calibration Cart
- Off-line Feeder Setup Table
- Tube Feeder
- Odd Form Feeder
- Stationary Matrix Tray Feeder
- Direct Pick Tray Feeders (DPTF)
- Platform Tray Feeder (PTF)
- Wafer Feeders
- Strip Tape Feeder
- Tape Cutter
- Platform Setup Validation (PSV)
- Feeder Bank Change
- Tape Scrap Bin
- Automatic Nozzle Changers
- Large-Board Kits
- Dual-lane Board Handling
- SECII/GEM
- Belt Reject Conveyor
- Automatic and Manual Board Support

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