

Cartesian Robots

Maximize your Application's Throughput

Minimal Tracking Error

Flexible Design

Lowest Cost of Ownership

Configurable



Broad Product Line to Meet Your Needs

Aerotech supplies cartesian robots for many of the world's largest manufacturers. These systems are carefully engineered to provide superior performance in a variety of applications. With our extensive line of products, Aerotech can deliver the ideal gantry customized to meet your unique application requirements.

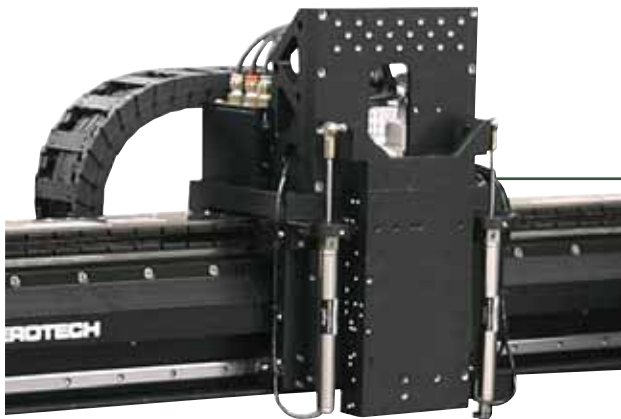
Cartesian Robot Comparison Table

Product Family	Cartesius-HD	Cartesius-LM	AGS1000	AGS10000	ASGS15000	AGS15000	ABG10000	
								
Relative Performance	Good	Good	Better	Better	Better	Best	Best	
Maximum Travel	1500 mm x 600 mm	1500 mm x 500 mm	500 mm x 500 mm	1500 mm x 1500 mm	800 mm x 800 mm	1500 mm x 1300 mm	1000 mm x 1000 mm	
Drive System	Ball Screw with Brushless Rotary Servomotor	Noncontact Linear Motor	Noncontact Linear Motor; Dual-Driven Lower Axis					
Maximum Resolution	To 0.1 μm	To 0.01 μm	To 1 nm				To 0.25 nm	
Maximum Travel Speed	1.4 m/s	2 m/s	2 m/s	3 m/s	2 m/s	3 m/s	1 m/s	
Maximum Acceleration	1 g (10 m/s^2)	3 g (30 m/s^2)	2 g (20 m/s^2)	3 g (30 m/s^2)	2 g (20 m/s^2)	5 g (50 m/s^2)	0.5 g (5 m/s^2)	
Finish	Black Anodized/Hard Coat Surfaces; ESD Optional							
Recommended Controller	Ensemble/Soloist		A3200/Ensemble		A3200			

Configurable Options Maximize Flexibility

Travel Length

Fully configurable and custom travel lengths up to 2000 mm x 1750 mm ensure each gantry is right-sized for its application, from compact to extended travel.

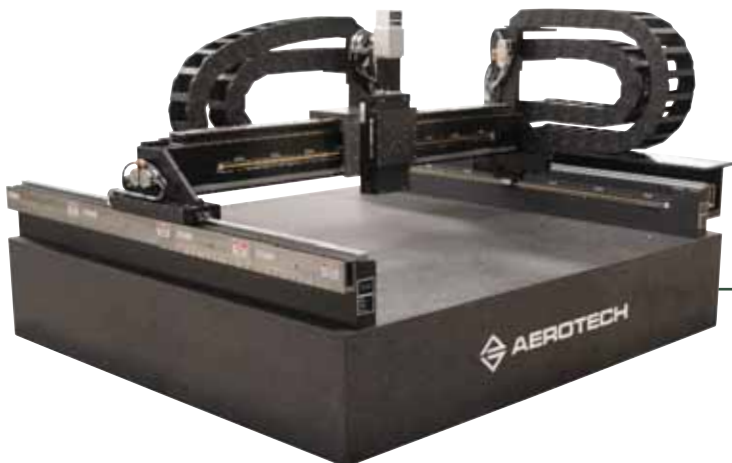


Z Axis

Linear motor or ball-screw vertical axis allows for component pick and place, tool height adjustment, and laser focus adjustment.

Riser Height

Configurable riser height permits seamless integration of conveyor systems, process equipment, or automated part handling equipment.



Cable Management Systems

Integration of customer cables, including signals for sensors, vision, autofocus height sensors, or fiber laser beam delivery simplify final assembly.

"T" Style Cartesian Robots

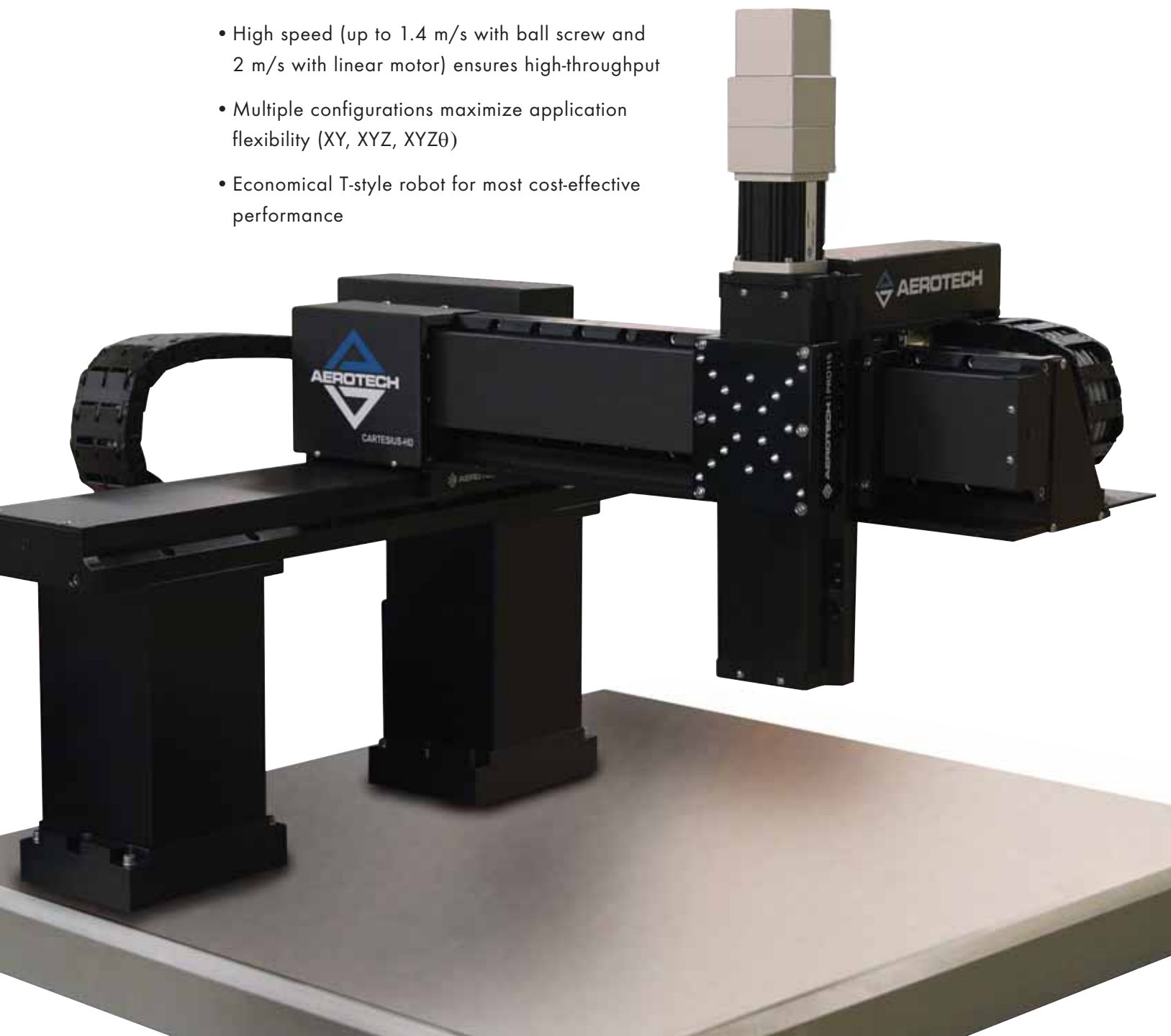
Cartesius-HD and Cartesius-LM Series

Component Inspection

Component Assembly

PCB Marking

- High speed (up to 1.4 m/s with ball screw and 2 m/s with linear motor) ensures high-throughput
- Multiple configurations maximize application flexibility (XY, XYZ, XYZ θ)
- Economical T-style robot for most cost-effective performance



Compact Gantries

AGS1000 Series

- Compact design offers superior performance, minimizing machine footprint
- Powerful linear motors enable high accelerations and micron-level dynamic tolerances
- Custom finishes minimize static charge buildup for ESD-sensitive applications

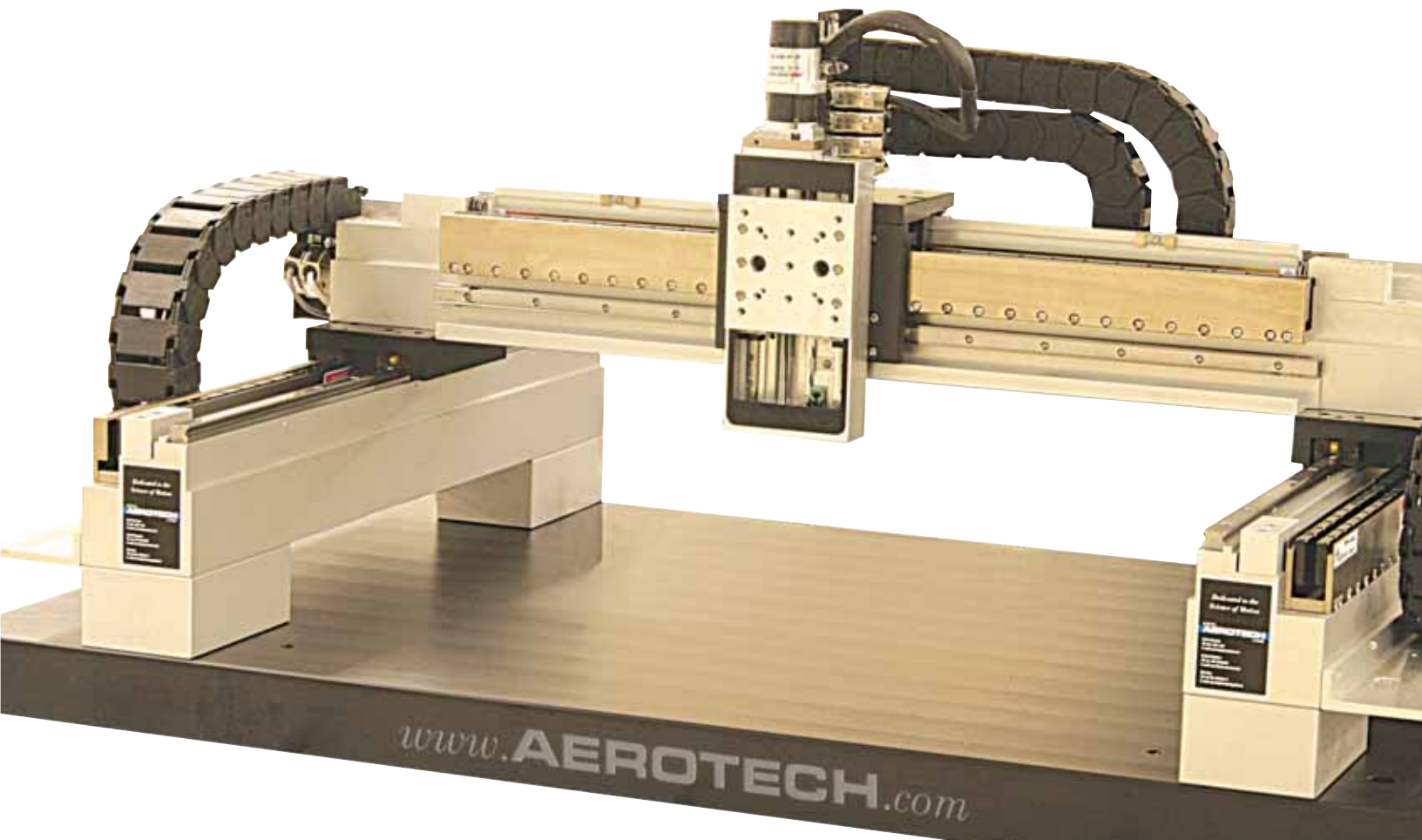
Fuel-Cell Manufacturing

Device Assembly

Dispensing

Printed Electronics

Component Inspection



High Performance Gantries

AGS10000 Series

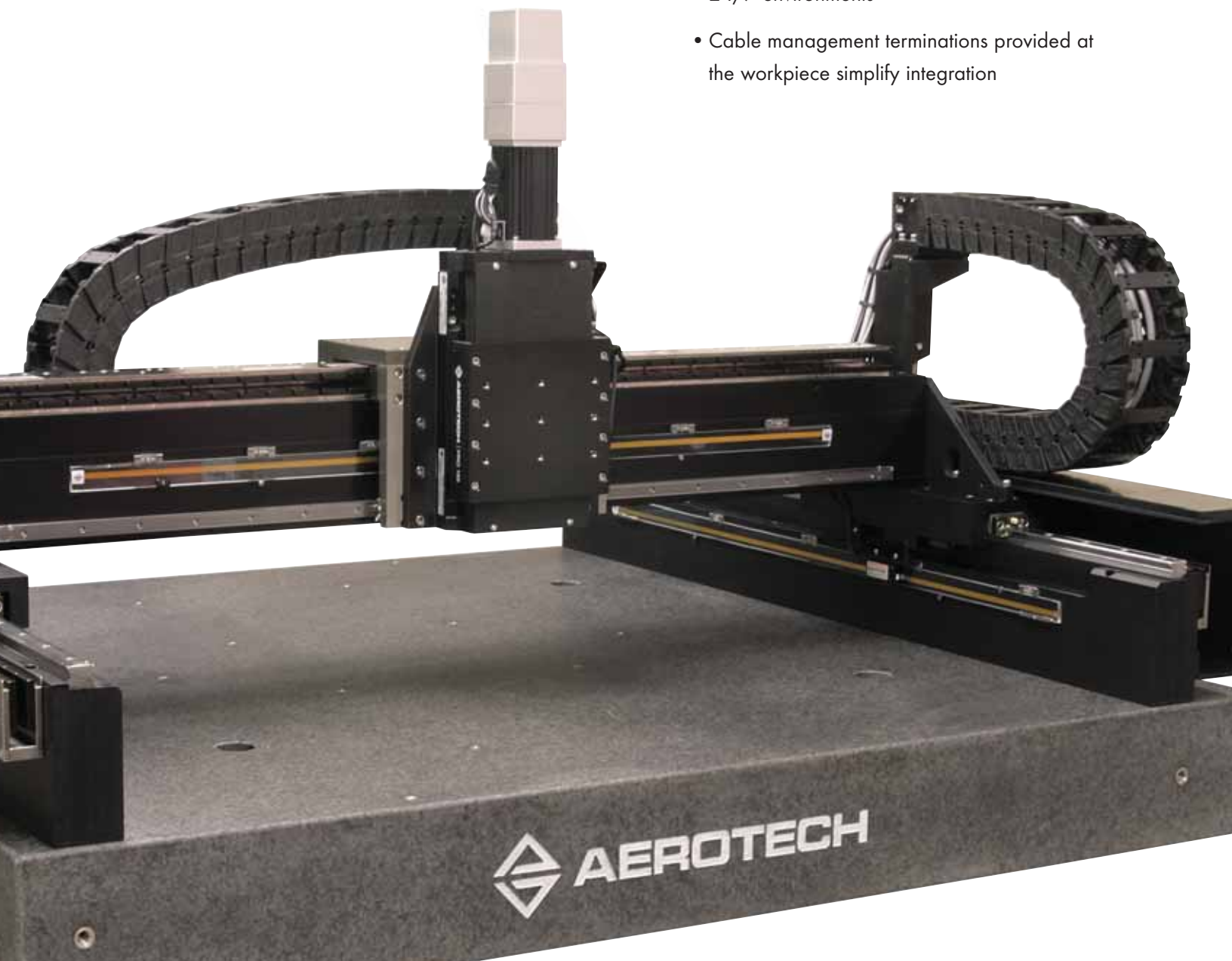
Printed Electronics

High-Speed Component Pick and Place

Component Inspection

Photovoltaic Manufacturing

- Linear motors allow up to 3 g acceleration and 3 m/s velocity, minimizing process time
- Components designed for minimal maintenance ensuring reliable operation in 24/7 environments
- Cable management terminations provided at the workpiece simplify integration



High Performance Gantries

AGS15000 Series

- Optimized design improves geometric tolerances at high speeds
- Up to 5 g acceleration maximizes throughput
- Advanced thermal design ensures consistent accuracy and performance over time
- Pneumatic counter-balanced linear motor vertical axis for precise, high-bandwidth focusing of processing head
- Mounting surfaces on bridge structure enable attachment of optics for free-space laser delivery systems or galvo scanners

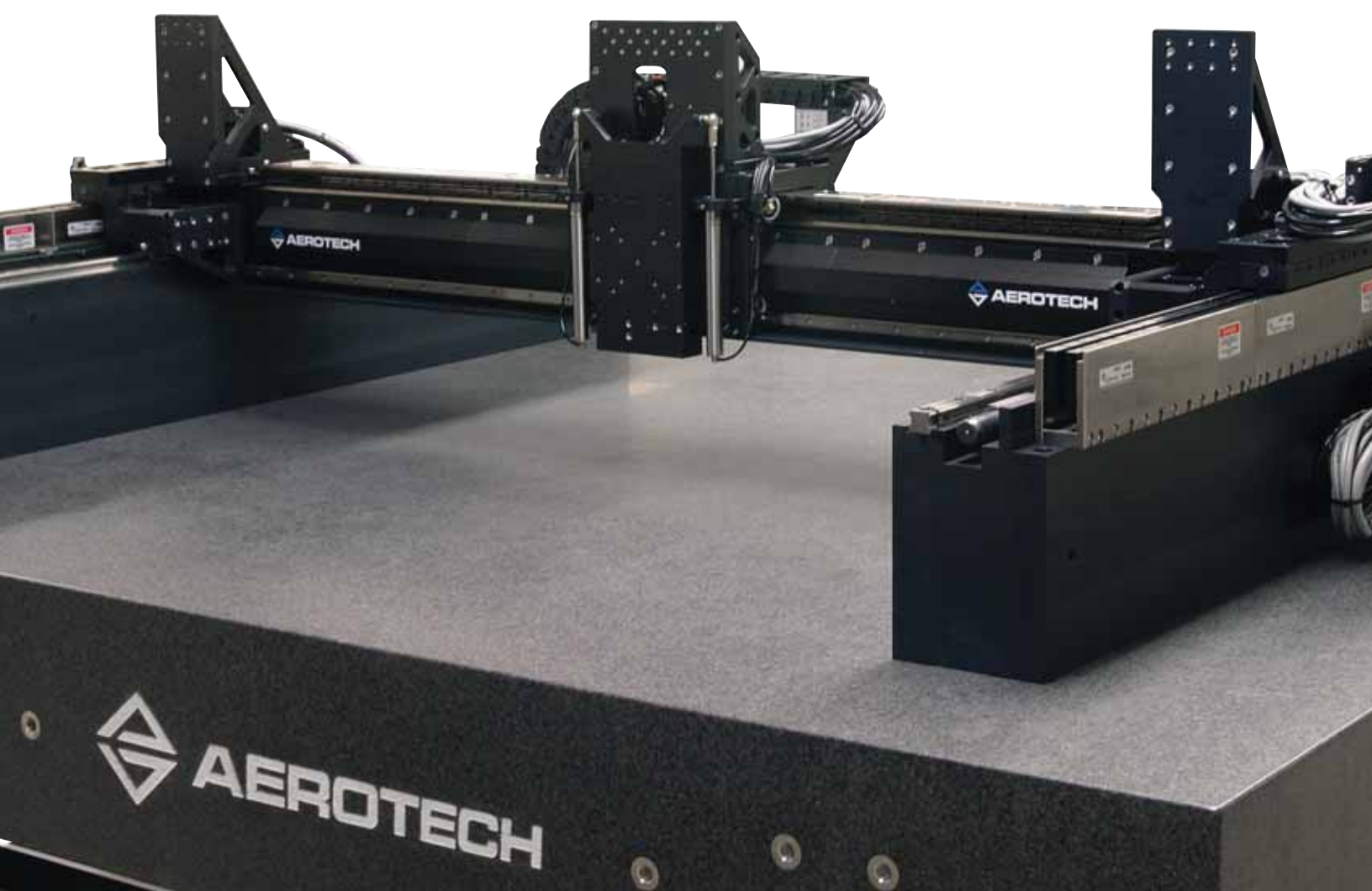
Stencil Cutting

Flat-Panel Processing

Laser Cutting

Laser Welding

Laser Micromachining



Sealed Gantries

ASGS15000 Series

Laser Cutting

Laser Micromachining

- Sealed design protects internal components for use in harsh environments
- Optimized design and stiff mounting surfaces permit micron-level dynamic accuracies at high speeds
- Aerotech's Position Synchronized Output (PSO) fires a configurable event trigger in real-time directly from the encoder position, maximizing process speed



Ultimate Performance Gantries

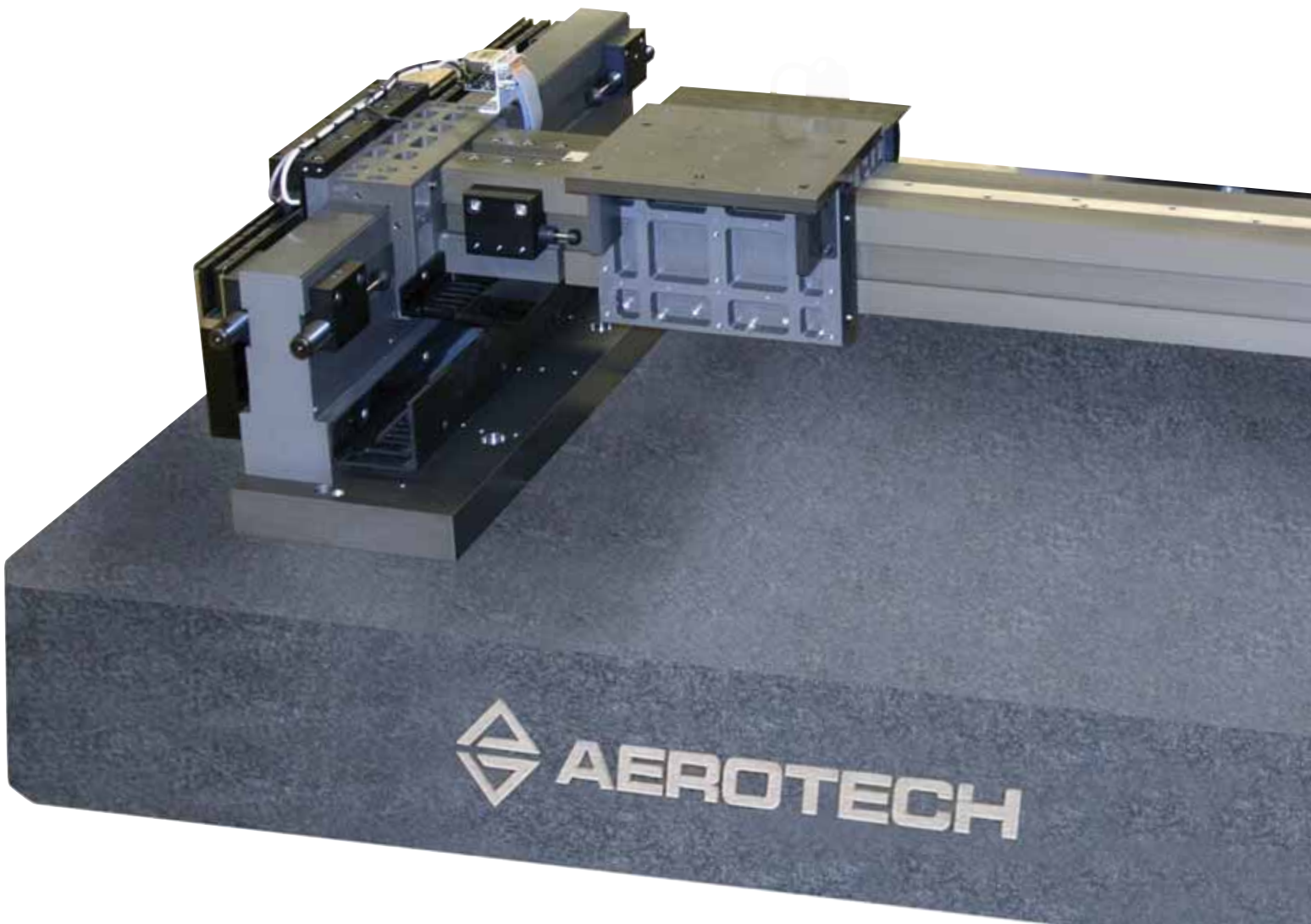
ABG10000 Series

- Air-bearing linear axes provide exceptional velocity stability
- All axes are fully preloaded to maximize mechanical stiffness
- Superior pitch, roll, yaw, straightness, and flatness characteristics for ultimate performance

Robocasting

Profiling

Flat-Panel Inspection



Value-Added Options

Available on all Cartesian Robots:



Weldment with Optional Skins or Doors

Isolation Systems

Integrated Electronics

IO

ESTOP

Integrated Pneumatics

Support Arm with Monitor, Keyboard, and Mouse

Enclosures

Aerotech's Enhanced Throughput Module (ETM)



Control Solutions

Software

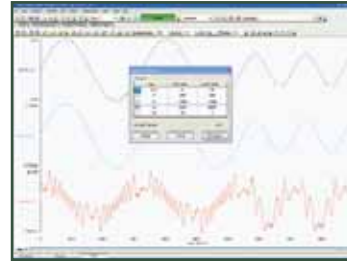
Use preconfigured Aerotech user interface modules or develop your own front-end and applications with .NET, C#, C++, and LabVIEW®.



Diagnostics



Loop Transmission



Autotune



PID Calculator

Award-Winning Controllers



Automation 3200

- Up to 32 tasks
- PC-based
- RS-274 G-code
- Advanced features for demanding applications
- 1 to 32 axes of coordinated motion
- Scanner control for marking
- Tightly integrated laser functionality
- Retrofit package



Ensemble

- Up to 4 tasks
- Stand-alone 1- to 10-axis controller
- Versatile, cost-effective, coordinated motion
- PWM or linear drives (10-150 A peak)
- Brushless, brush, or stepper motors
- Desktop or panel mount
- .NET, C++, or LabVIEW®



Soloist

- Elegant, economical, single-axis controller
- Stand-alone
- PWM or linear drives (10-150 A peak)
- .NET, C#, VB.NET®, LabVIEW®
- Ethernet, USB

Aerotech's Worldwide Sales and Service Locations



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