

# AGS1000 Series

## Linear Motor Gantries

Linear brushless servomotors for superior performance and longevity

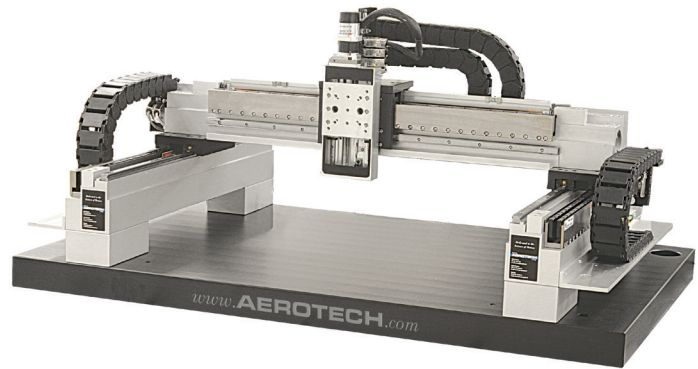
Customizable Z and q for increased flexibility

Optional machine base and risers

Optional electroless nickel for ESD protection and medical applications

Compact design reduces overall machine size

Ideal for die bonding, wire bonding, WLP, DNA profiling, and dispensing



The AGS1000 series of Cartesian gantry systems puts Aerotech's core technologies and extensive manufacturing capability to work for you, providing outstanding performance and versatility in a wide range of automation platforms.

AGS1000 systems are designed for applications including high-speed pick-and-place, automated assembly, vision inspection, dispensing stations, and high-accuracy inspection. The AGS1000 is based on the industry leading AGS10000 gantry, and maintains many of the same leading-edge characteristics.

### Linear Motor/Linear Encoder

Aerotech's high-performance BLMC series brushless linear servomotors drive the AGS1000 to speeds of 2 m/s and accelerations of 2 g. Feedback is from a rugged noncontact optical linear encoder. Optimized to account for thermal expansion, the design ensures high accuracy under all operating conditions.

### Rugged Design

Since the linear motor is a noncontact device, there is no backlash, wear, or maintenance. The bearings are preloaded linear motion guides with wiper seals and grease fittings and are mounted to provide optimized stiffness and load distribution. Standard lubrication is clean-room compatible.

### Cable Management System

Extensive R&D has resulted in an optimized cable management system (CMS) that has been field proven to be the industry's most reliable design. Large bend radii and high-flex cables ensure that the AGS1000 provides millions of cycles of maintenance-free operation. In the unlikely event of a component failure, a modular design ensures that part replacement is fast and easy.

All customer cabling and pneumatics can be routed through the system e-chain. Connectors are provided at the workpiece and at the opposite end of the e-chain, greatly simplifying final machine integration.

### Turnkey Operation

Aerotech's years of experience manufacturing precision positioning and control systems can be leveraged by acquiring a turnkey system. Typical options include Z-theta mechanisms, risers to accommodate automated parts handling equipment, and machine bases that are designed to accommodate the entire electronics subsystem.

Aerotech manufactures a wide range of high-performance amplifiers and advanced motion controllers that are optimized for high-performance automation applications.

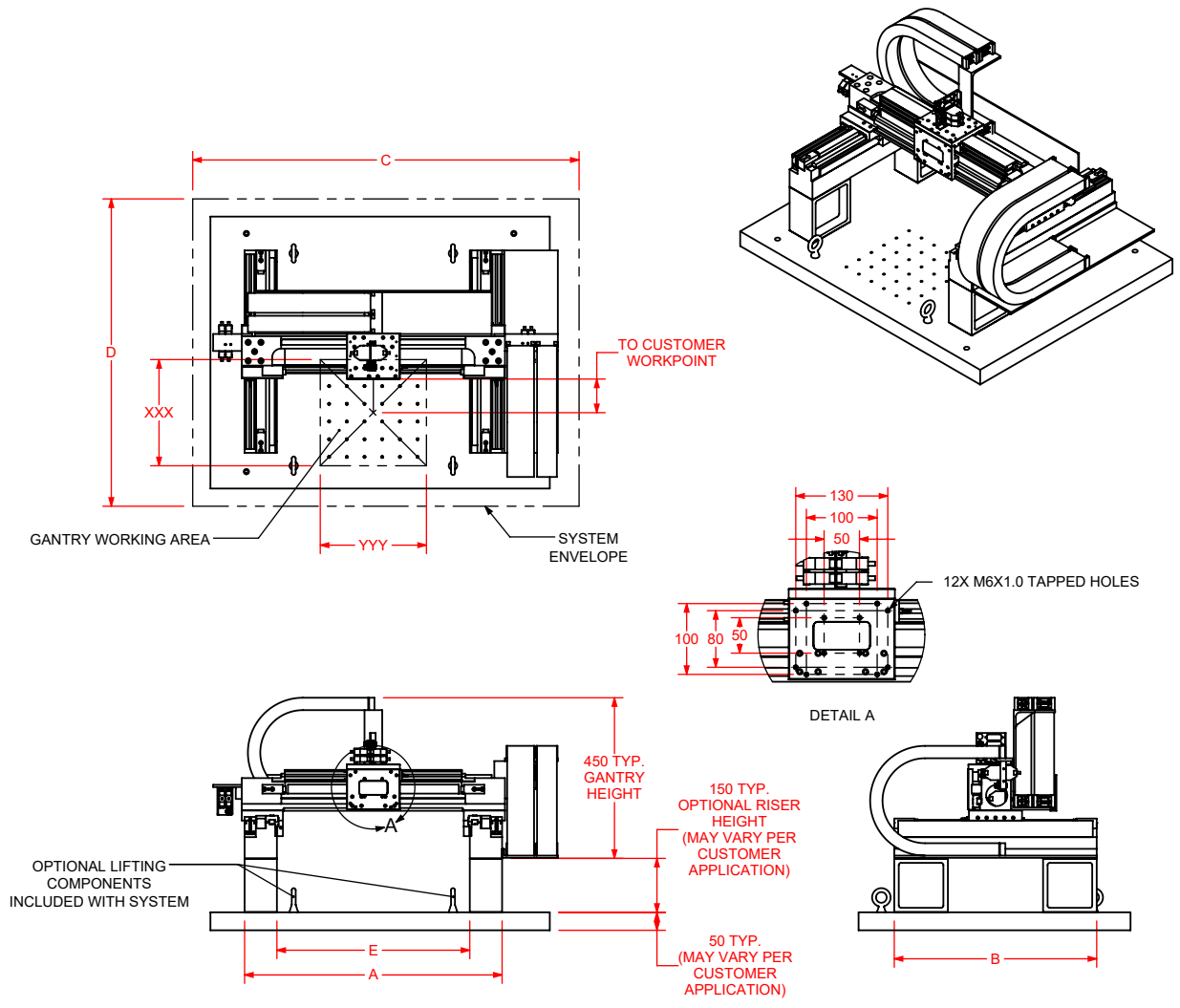
## AGS1000 Series SPECIFICATIONS

Basic Model			AGS1000-200-200	AGS1000-400-400	AGS1000-500-500
Total Travel <sup>(1)</sup>			200 mm x 200 mm	400 mm x 400 mm	500 mm x 500 mm
Maximum Travel Speed <sup>(2)</sup>			2 m/s		
Maximum Linear Acceleration			2 g - 20 m/s <sup>2</sup> (no-load)		
Maximum Load <sup>(3)</sup>			15 kg		
Continuous Force <sup>(4,5,6)</sup>	Lower Axis	Air Cooling (20 psi)	228 N		
		No Air	146 N		
	Upper Axis	Air Cooling (20 psi)	114 N		
		No Air	73 N		
Peak Force <sup>(4,6)</sup>	Lower Axis	916 N			
	Upper Axis	458 N			
Accuracy <sup>(7)</sup>			±5.0 µm		
Repeatability			±2.0 µm		
Orthogonality			5 arc sec		
Nominal System Weight (Gantry only) <sup>(8)</sup>			47.7 kg	65 kg	73.6 kg
Moving Mass <sup>(8)</sup>	Lower Axis	21 kg		25 kg	27 kg
	Upper Axis	3 kg			
Material			Aluminum		
Finish	Stage <sup>(9)</sup>	Clear Anodize			
	Table	Hard Coat Anodize			

Notes:

1. Custom travel lengths available — contact factory.
2. Maximum speed based on stage capability; maximum application velocity may be limited by system data rate and system resolution.
3. Maximum load based on bearing capability; maximum application load may be limited by acceleration requirements.
4. Depends on configuration.
5. Thermal limitations of positioning stage with respect to performance may limit continuous force output.
6. Force may be limited by amplifier output.
7. Measured at center of travel.
8. Values shown are approximations only and will vary based on customer requirements including, but not limited to, nominal gantry travel, maximum system velocity, quantity and size of customer cables and hoses, and customer payload mass and size.
9. Custom finishes available — contact factory.

# AGS1000 Series DIMENSIONS

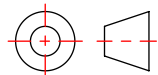


"XXX" LOWER-AXIS NOMINAL TRAVEL	"YYY" UPPER-AXIS NOMINAL TRAVEL	"A" GANTRY WIDTH	"B" GANTRY DEPTH	"C" SYSTEM WIDTH	"D" SYSTEM DEPTH	"E" GANTRY SPAR SPACING
100	100	500 - 575	330 - 425	850 - 950	625 - 725	315 - 390
300	300	700 - 775	530 - 625	1050 - 1150	825 - 925	515 - 590
500	500	900 - 975	730 - 825	1250 - 1350	1025 - 1125	715 - 790

**NOTES:**

1. IN THE TABLE ABOVE, COMMON NOMINAL TRAVEL LENGTHS ARE SHOWN FOR REFERENCE. OTHER NOMINAL TRAVEL LENGTHS AND NOMINAL TRAVEL COMBINATIONS ARE AVAILABLE.
2. "A", "B", "C", AND "D" DIMENSIONAL RANGES ARE SHOWN FOR REFERENCE ONLY AND MAY VARY BASED ON THE CUSTOMER'S APPLICATION.
3. SYSTEM DIMENSIONS WILL VARY BASED ON CUSTOMER REQUIREMENTS INCLUDING, BUT NOT LIMITED TO:
  - NOMINAL GANTRY TRAVEL
  - MAXIMUM SYSTEM VELOCITY
  - REQUIRED CLEARANCE FROM WORK SURFACE
  - QUANTITY AND SIZE OF CUSTOMER CABLES AND HOSES
  - CUSTOMER PAYLOAD MASS AND SIZE
4. GANTRY SYSTEM IS EQUIPPED WITH ELECTRICAL AND MECHANICAL TRAVEL LIMITS BEYOND NOMINAL TRAVEL DISTANCE.
5. CONTACT AEROTECH FOR APPLICATION SPECIFIC DIMENSIONS.

DIMENSIONS: MILLIMETERS



## AGS1000 Series ORDERING INFORMATION

### AGS1000 Direct-Drive Cartesian Gantry System

AGS1000-XXX-YYY      AGS1000 direct-drive cartesian gantry system, XXX mm lower-axis travel, YYY mm upper-axis travel

#### Feedback (Required)

-E1      Lower axis: dual incremental linear encoder, 1 Vpp  
 Upper axis: single incremental linear encoder, 1 Vpp

-E2      Lower axis: dual incremental linear encoder, 0.1 μm digital TTL  
 Upper axis: single incremental linear encoder, 0.1 μm digital TTL

#### Lifting (Optional)

-LF      Lifting hardware provided with system assembly

#### Performance Grade (Required)

-PL6      Standard performance - plots for accuracy-only included

#### Integration (Required)

Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required, or if you desire custom integration support with your system.

-TAS      Integration - Test as system  
 Testing, integration, and documentation of a group of components as a complete system that will be used together (ex: drive, controller, and stage). This includes parameter file generation, system tuning, and documentation of the system configuration.

-TAC      Integration - Test as components  
 Testing and integration of individual items as discrete components that ship together. This is typically used for spare parts, replacement parts, or items that will not be used together. These components may or may not be part of a larger system.