



Dedicated to the  
Science of Motion

[www.aerotech.com](http://www.aerotech.com)

# Coordinated Scanner and Servo Motion



AEROTECH

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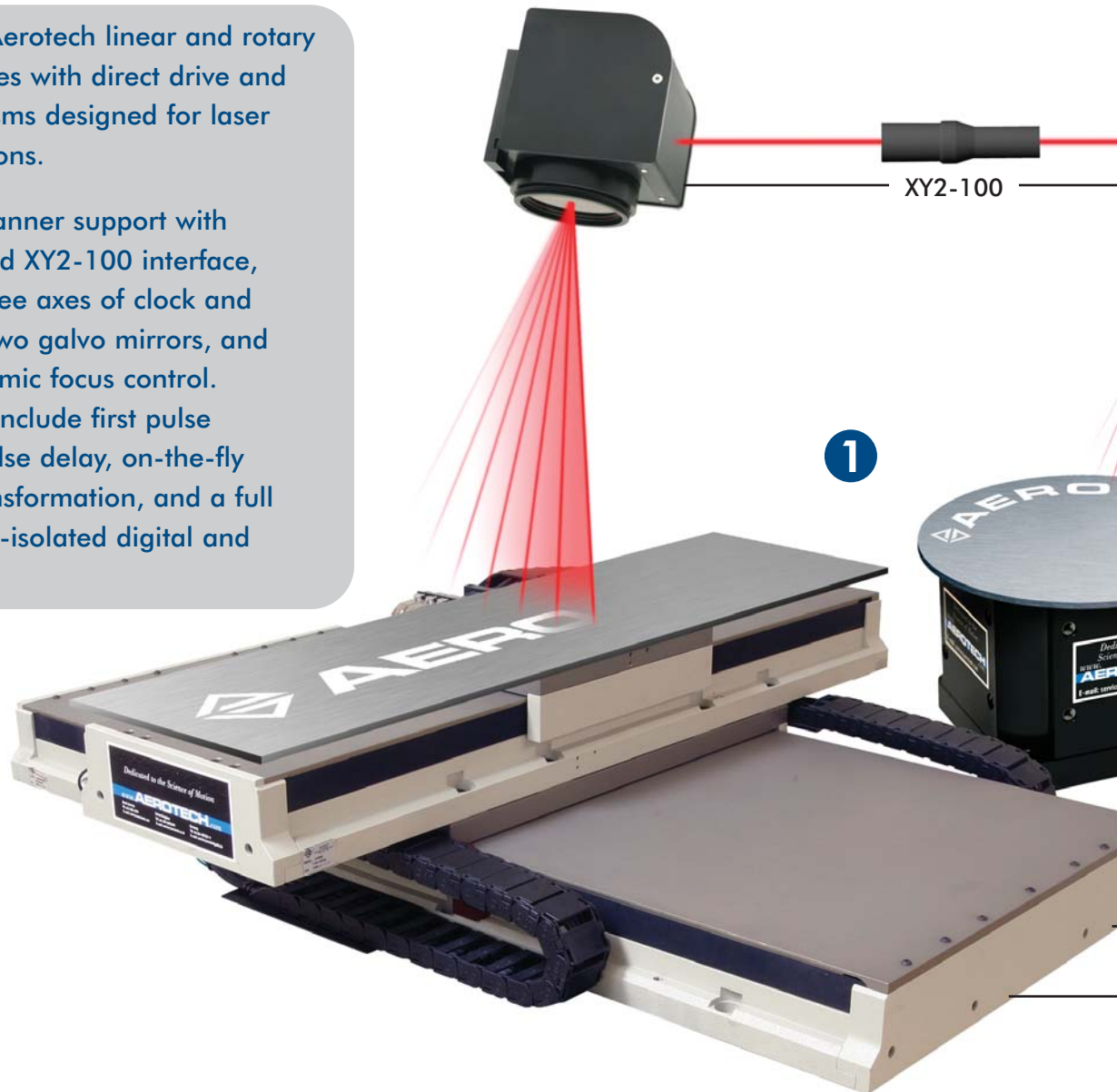
Scanheads are excellent devices for quickly marking vectors or graphics, but are limited by their relatively small field of view in which they can process. By coordinating scanner motion with traditional servo axes, the field of view can be significantly expanded while maintaining the quality and throughput expected of scanner technology.

## Nmark™ SSaM:

The Nmark™ SSaM is a synchronized scanner and motion controller supporting the industry standard XY2-100 interface. Residing on Aerotech's advanced Automation 3200 software-based motion controller's FireWire® network, the Nmark™ SSaM can be connected with any other A3200 components, including linear and PWM intelligent servo amplifiers, drive racks, and stepper motor controllers. Combining this flexibility with the vision, PLC, robotics, and I/O control capabilities of the Automation 3200 allows for ultimate control architecture customization.

**1** Wide range of Aerotech linear and rotary positioning stages with direct drive and ball-screw mechanisms designed for laser processing applications.

**2** Multi-vendor scanner support with industry standard XY2-100 interface, supporting up to three axes of clock and direction steppers, two galvo mirrors, and a third axis for dynamic focus control. Additional features include first pulse suppression, first pulse delay, on-the-fly marking, image transformation, and a full complement of opto-isolated digital and analog I/O.

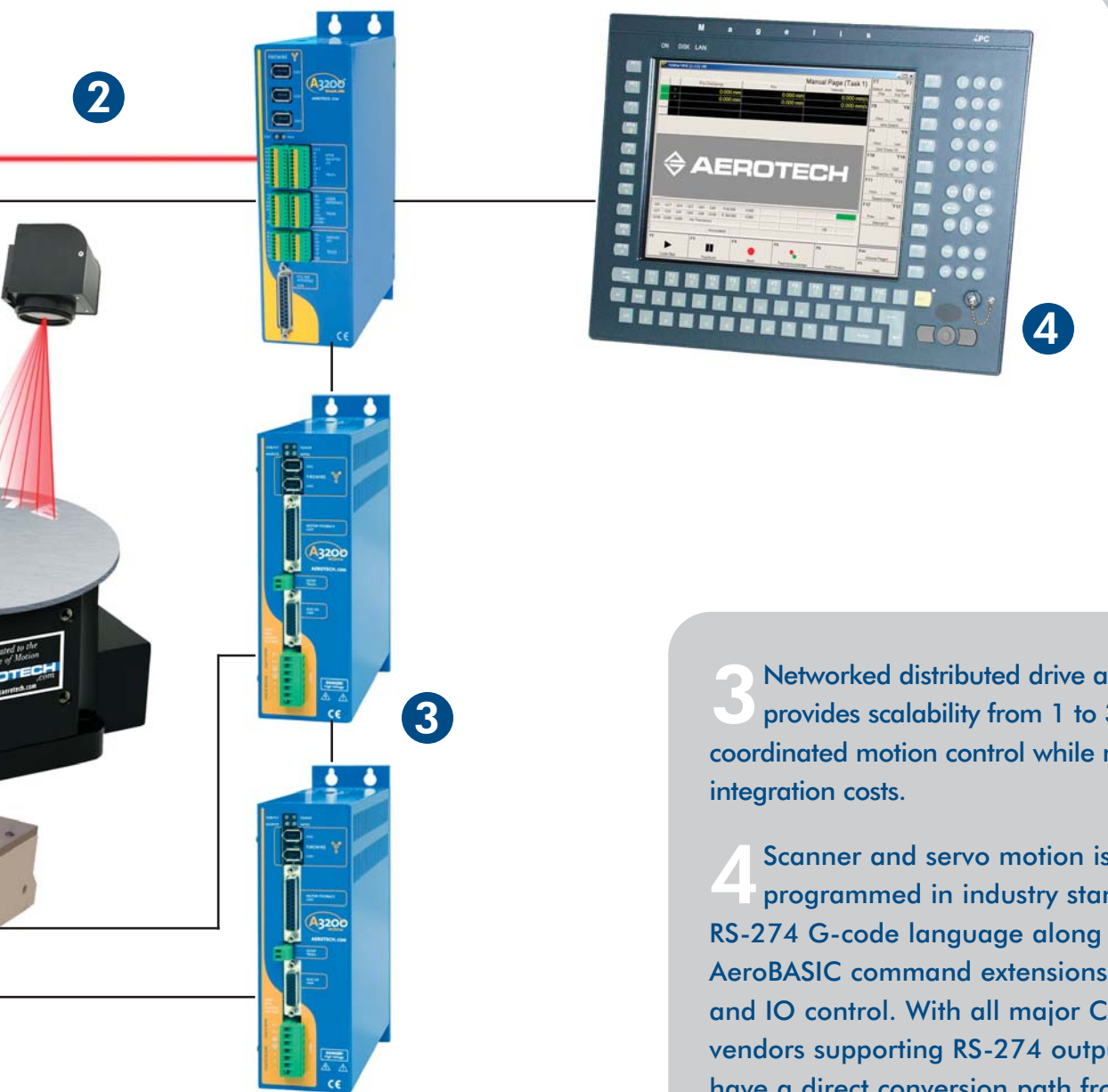


## BroadMark Graphic:

Many applications require raster-type scanning of the laser for bar codes, bitmaps, and scribing. When the object being processed is larger than the scanhead's field of view, it is common to stitch several exposures together. This can result in discontinuities in the image due to angular errors in aligning each exposure, reducing image quality and the range of applications suitable for this technology. With the Nmark™ SSaM's BroadMark functionality, linear and rotary servo motion can be coordinated with the galvo mirrors so that the entire raster scan is completed in one continuous pass, eliminating these angular errors.

## Stretched Vector:

Scanners are commonly used in vector-type laser cutting, welding, marking, sealing, and ablation applications that require the process to be completed in a single pass of the laser. Coordinating vector movement with servo motion vastly expands this working field and effective vector length, allowing for a wider range of products to be processed, fully utilizing the advantages of scanner technology.



**3** Networked distributed drive architecture provides scalability from 1 to 32 axes of coordinated motion control while minimizing integration costs.

**4** Scanner and servo motion is programmed in industry standard RS-274 G-code language along with AeroBASIC command extensions for laser and IO control. With all major CAD/CAM vendors supporting RS-274 output, users have a direct conversion path from CAD data to galvo and scanner motion.

# AEROTECH

*Automation Solutions for Motion Control and Positioning*

## Motion Controllers

Aerotech motion controllers are used in our own positioning systems and in motion control and positioning systems throughout the world. We offer a complete line of controllers including the Automation 3200 software-based, 1- to 32-axis motion, vision, PLC, robotics, and I/O platform; the Soloist™ single-axis servo controller; and the Ensemble® multi-axis stand-alone controller.



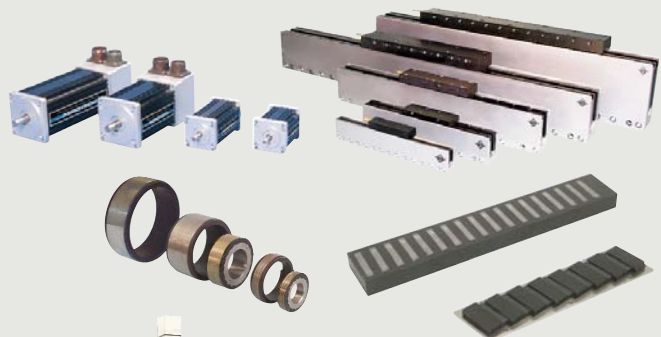
## Drives

Aerotech manufactures drives that power our own high-performance servomotors and complement Aerotech motion controllers in applications as diverse as laser machining, industrial robots, vision systems, assembly machines, machine tools, semiconductor manufacturing equipment, electronic manufacturing, and in a variety of other industrial control solutions. Aerotech drives, controllers, and linear and rotary servomotors are perfectly matched to provide the ideal solution to your motion control application. Aerotech drives are available in PWM and linear output, with from 10 to 150 amps peak current.



## Linear and Rotary Motors

Aerotech's "U-channel" and "flat" brushless linear servomotors are ideal for many industrial automation applications. The noncontact design of the forcer and magnet track results in a maintenance-free system. Aerotech's rotary motor family addresses the needs of both ultra-precision positioning and high-throughput industrial automation applications. Our motors have among the highest torque to inertia ratios available. Aerotech manufactures brushless, brush, and frameless motors.



## Complete Motion Subsystems

Aerotech has over 35 years of experience manufacturing custom-engineered systems for use in semiconductor, medical, laboratory, photonics and fiberoptics, lasers, automotive, packaging, and other applications. We are well versed in vacuum and cleanroom techniques. We use over 35 years of motion control and positioning system experience to engineer systems tailor-made for our customers' operations, while employing the most accurate, highest performance motion control and positioning components available.



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