

The Laser Machining Center

BEAMTM
D Y N A M I C S





Laser

Machining Centers

Advanced Laser Cutting Machine Tools

Beam Dynamics manufactures the easiest to use and most precise intermediate power laser machines in the world. Each machine is built from the ground up by our factory in Silicon Valley, with precision and flexible manufacturing engineered into every aspect of the machine. Laser power control, motion control, automation and software all work in concert to make our machines "best in class" by any measure.

Whether you are automating a high volume factory or expanding an existing service business, Beam Dynamics' 10 years of experience make us an ideal partner. We've developed the cutting processes for hundred's of materials and built that knowledge directly into our machines to make it easy for you to get the results you need.



A world of customers and cutting applications



Fabric

Sheet Metal

Wood

Printed Graphics

Beam Dynamics laser cutting machines are in use in a wide variety of industry, education and government applications:

Industry: 3M, Northrop Grumman, Raytheon, Industrial Light & Magic, Disney Imagineering, International Game Technology

Education: Stanford University, University of California, University of Cincinnati, ITESM

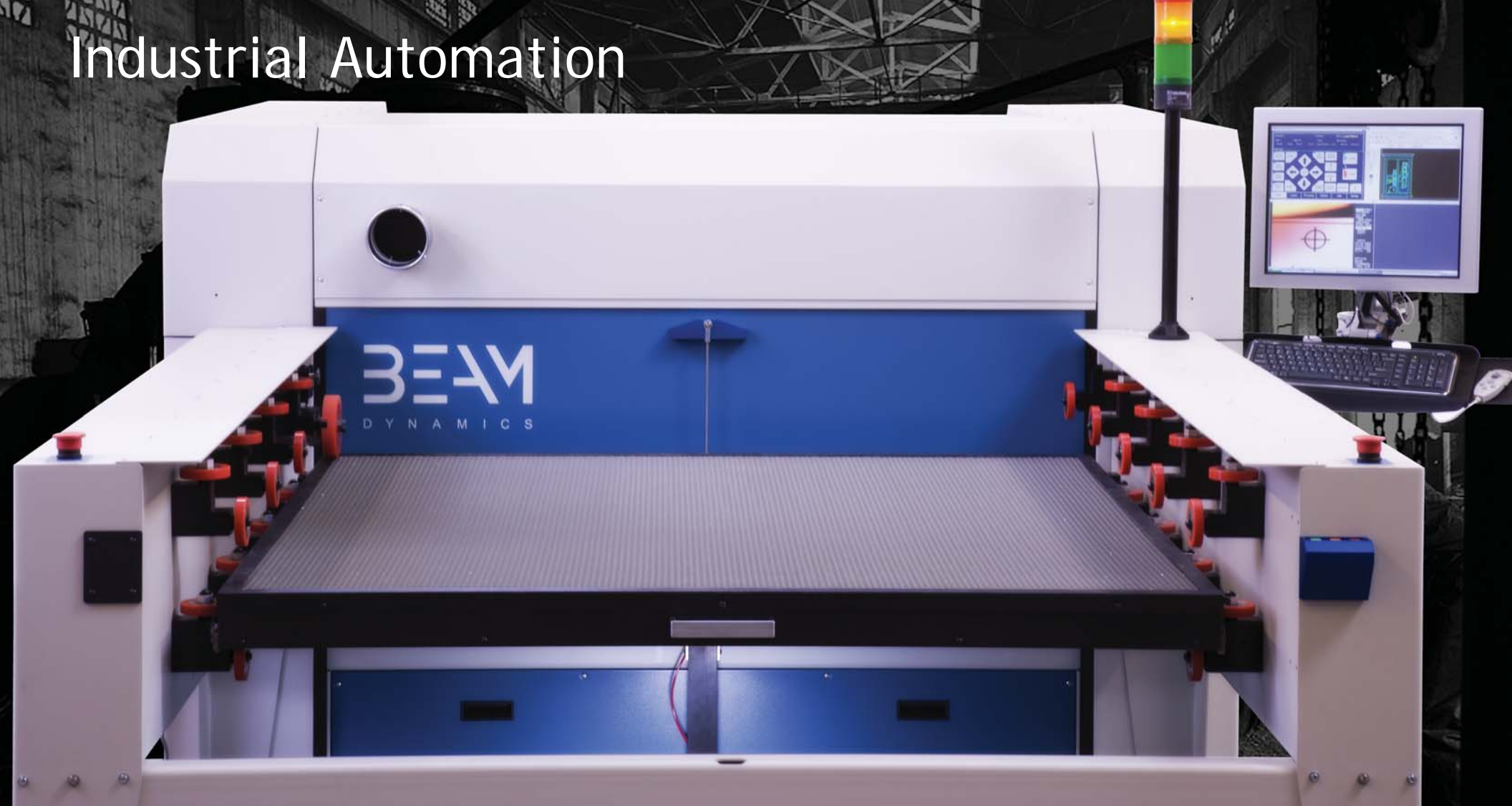
Government: NIST, FBI, LLNL

Military: Naval Research Labs, US Air Force

Applications

- Acrylic Displays
- Precision sheet metal
- Set design and fabrication
- Movie models
- Acoustic guitar fabrication
- Rapid prototypes
- Raster image engraving
- Satellite insulation wrap
- Slot Machine fabrication
- Point of purchase displays
- Automobile parts
- Personalized book covers
- Trophies and awards
- Precision wood inlays
- Flexible circuits
- Printing and nameplates
- Medical part fabrication
- Athletic Lettering
- Wood and plastic furniture
- Art stencils
- Road marking reflectors
- Photographic images
- Architectural models
- Trade Show Displays

Industrial Automation



Rising labor costs and off shore competition make industrial automation a necessity for any manufacturing business. Beam Dynamics Laser machines have been specifically designed with a full range of automation features to boost factory through-put and eliminate manual operation.

- Palletized material handling, job queuing and “lights out” operation
- Automatic focusing, calibration and laser process control
- Precision machine vision for part location, registration, scaling, pass/fail and error averaging
- Automatic and redundant safety and exhaust mechanisms and sensors to protect machine and operators

A Machine Tool

Beam Dynamic's machine design approach emphasizes manufacturing process consistency, precision and reliability. But what good is precision if it starts to deteriorate (wear out) from the moment the machine is first used? Beam's Laser Machining Centers are designed so that each axis incorporates a flat and stable optically read ruler, ensuring zero loss of precision over time.

- Compact and recognizes your factory floor space is valuable
- Optically based positioning system in closed loop with servo motors for absolute, not interpolated, positioning
- Kinematic design principles result in stable optics and motion repeatability



Take a tour: an advanced feature set of tools

- Compact and powerful sealed CO2 lasers
- True machine vision system for automatic registration to any feature or marking
- Available palletized material handling for maximum throughput
- Class I laser safety means no danger of operator injury from laser beam
- Multiple g acceleration for maximum throughput of detailed parts
- Kinematic design for stable optics that don't need constant alignment
- Large polycarbonate cover for easy access and safe viewing of cutting
- Water cooled electronics enclosures are dust and pollutant free



- Easy to use intuitive controls
- Ergonomic touch screen control panel
- On board system diagnostic suite
- Integrated machine vision display
- LaserLink CAD/CAM software
- On board database of materials and process settings

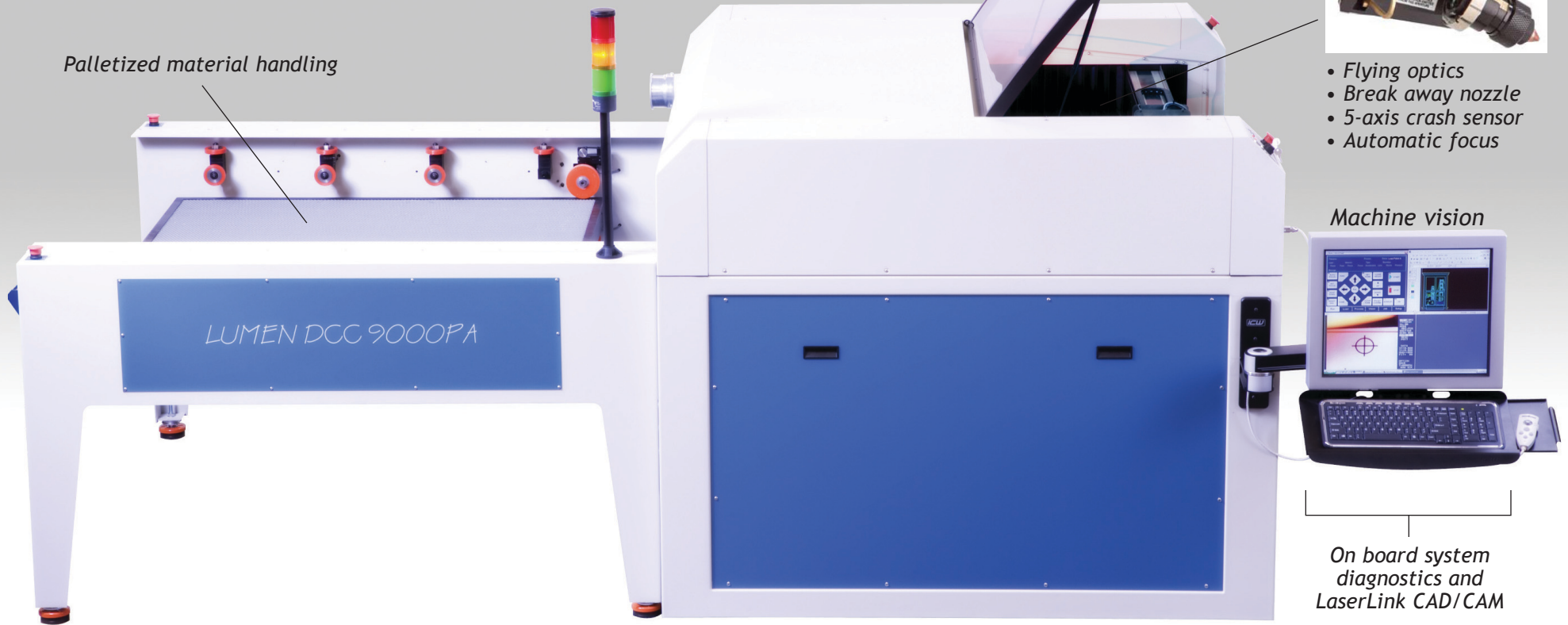


Power control

Beam Dynamics earliest design notes 15 years ago recognized that the benefit of a laser comes from its ability to apply consistent energy to a manufacturing process. The laser is a knife that never dulls and puts zero tool load on the part being cut. Everything about our designs contributes to the consistency and control of energy delivery from part to part, for year after year.

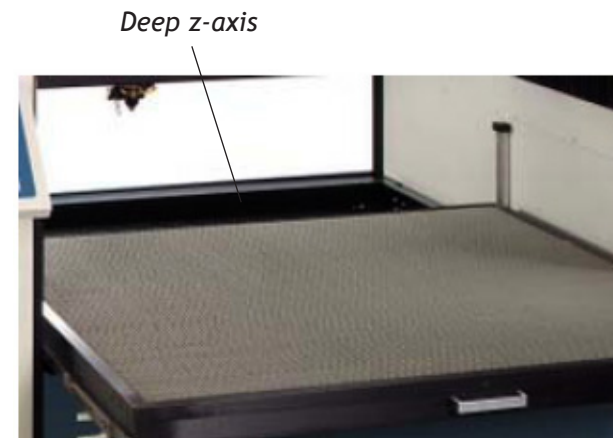
- Dedicated computer regulates energy output to achieve constant process in cutting, scribing, kiss cutting, material milling and ablation
- Sealed beam path to protect beam from smoke and debris

The details



More features

- Automatic focus
- Fully programmable coaxial gas jet
- Break away nozzle
- 5-axis crash sensor
- Pointing laser
- Brushless Servo motors in closed loop with linear encoders for high speed accuracy that never wears out
- Flying optics for high speed cutting and vertical part edges
- Sealed beam path to protect optics and prevent vapor distortion of laser beam
- Digital power control, variable pulse selection
- Interlocked exhaust, water chiller and assist gas to protect machine and operators
- Deep z-axis for fixturing and tall part cutting
- Pass through for unlimited part length or roll feed
- Vacuum cutting bed for material hold down and fume evacuation
- Auto-cut restart





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Please call today to discuss your
laser cutting application with us.