



# The Laser Machining Center



Superior Reliability & Performance

# Advanced Laser Machining Centers

Coherent's Laser Machining Centers are the most advanced laser cutting machine tools available today. Every machine is built from the ground up in our factory, where precision and flexibility are manufactured into all aspects. Laser power control, motion control, automation and software are engineered to work together to provide you with the highest power laser machine tool in the smallest package.



METABEAM



## PROCESS, PRECISION AND POWER CONTROL

Coherent's machine design approach emphasizes manufacturing process consistency, precision and reliability. All of our Laser Machining Centers are designed so that each axis incorporates a flat and stable optically read ruler, ensuring zero loss of precision over time.

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, year after year.

Since our beginnings, we've developed cutting processes for hundred's of materials, and continue to build that knowledge directly into each of our machines.

- A dedicated computer regulates energy output to achieve constant process in cutting, scribing, kiss cutting, material milling, and ablation
- A sealed beam path designed to protect the beam from smoke and debris



META 2C



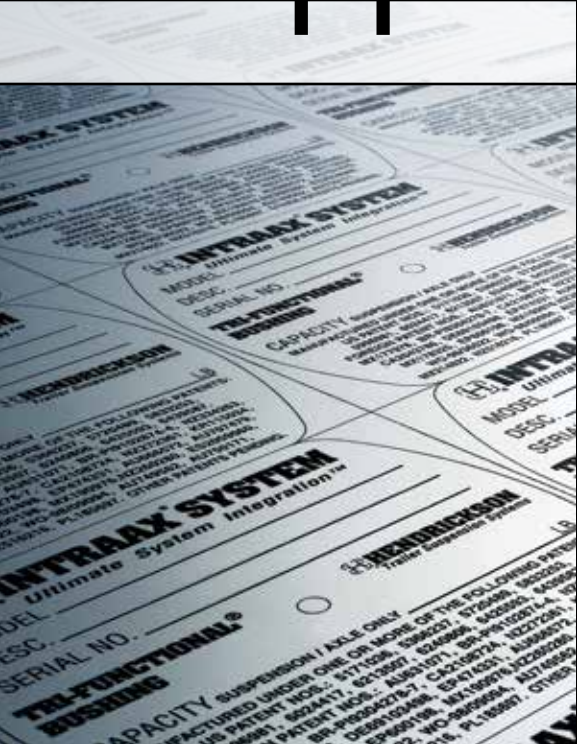
META 10C



# Applications

Coherent's advanced Laser Machining Centers are in use in a variety of industry, education and government applications:

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



# Industrial Automation

Rising labor costs make industrial automation a necessity for any manufacturing business. Coherent Laser Machining Centers have been specifically designed with a full range of automation features to boost factory throughput 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



# Take a Tour



- Compact and powerful sealed lasers
- Available palletized material handling for maximum throughput
- Multiple g acceleration for maximum throughput of detailed parts
- Large polycarbonate cover for easy access and safe viewing of cutting
- Easy to use intuitive controls
- On-board system diagnostic suite
- LaserLink CAD/CAM software
- True machine vision system for automatic registration to any feature or marking
- Class I laser safety means no danger of operator injury from laser beam
- Kinematic design for stable optics that don't need constant alignment
- Water cooled electronics enclosures are dust and pollutant free
- Ergonomic touch screen control panel
- Integrated machine vision display
- On-board database of materials and process settings



**META 10C touch screen control panel**

## **Palletized material handling**





# The Details



Easy installation

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



- Flying optics
- Break away nozzle
- 5-axis crash sensor
- Automatic focus



Machine vision

On board system diagnostics and LaserLink CAD/CAM

## COHERENT AS YOUR PARTNER.

To compete and succeed in today's fast-paced research and manufacturing environments, you need a laser partner who understands your needs. A partner who can provide a wide range of technology solutions, and the support that goes with them.

Since 1966, Coherent has been helping customers by providing complete laser-based solutions for a wide range of commercial and scientific applications.

With a heritage of innovation and an uncompromising position on quality, Coherent is the most forward-thinking and diversified manufacturer of solid-state, gas, excimer and semiconductor lasers in the industry.

For more information, visit us on the Web at [www.Coherent.com](http://www.Coherent.com). Or call 800-527-3786.



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