Laser Marking

Company

Columbia Marking Tools is a leading manufacturer of marking products. Our broad spectrum of custom-developed machines and components have made a significant "impact" on marking technology. Our company has an extensive history of innovations and technological breakthroughs. We continuously improve our products, incorporating the latest technology and components.

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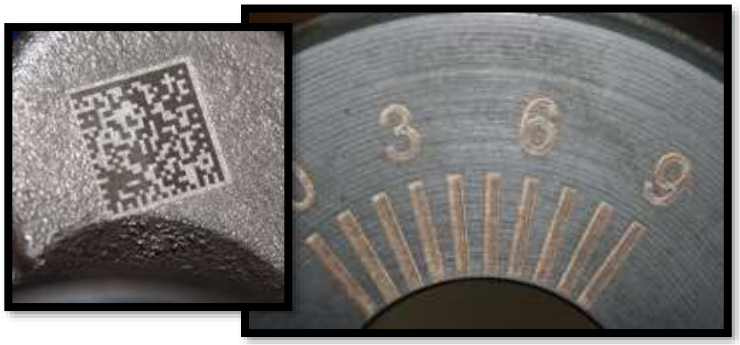
Selection of Laser Source

CMT offers a wide selection of laser sources for marking parts. There are many factors that go into the selection of a laser. While some factors depend on the application, other factors depend on the economics. A laser marking system is a big investment, and CMT works with clients to insure that the selected laser source is the best for their requirements.



Marking parameters to be considered:

- Material being marked
- Size of mark
- Contrast required
- Depth required
- 2D code or machine readable

Application parameters to be considered:

- Curved/rough surface
- Automation or manual operation
- Integration with camera or other sensors
- One part – or many parts
- Production requirements – cycle time

Power and options of laser source:

- 2, 10, 15, 25, or 50 watts
- 3”, 5”, 15” marking areas
- YV04, Fiber, CO^2 sources

Columbia Marking Tools features marking lasers made for industrial marking applications. Some lasers may be purchased without an enclosure for use in a lab, most of our systems are designed to be integrated in a complete solution and used on the manufacturing floor.

Compact Laser Solution LE16

The compact model LE16 Laser Solution is designed for safely laser marking small parts. This model can be used as either a floor stand or benchtop system.

The LE16 has a work area of 10” x 10” x 5” (height varies – dependent on the laser source). This compact standard Laser marking enclosure is designed for marking small production runs of tags or other small parts.

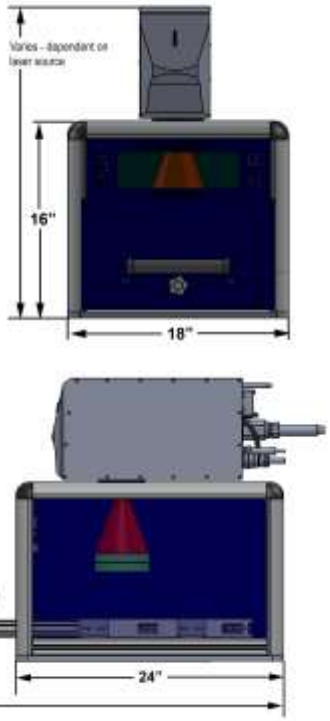
Standard Features

- Light-tight enclosure
- Large viewable safety glass
- Variable height adjustment
- Laser status light
- Drawer door with integrated safety lock
- Auxiliary fume extractor port
- Fixture breadboard mounting plate

Laser Enclosure Specifications:

- Voltage 120V AC
- Enclosure dimensions: 18” x 24” x 16” (W x D X H)
- Work table: 10” x 10”
- Z axis 5” est (height varies by laser model used)
- Weight: 96#
- Class 1 certified to CDRH standards

The LE16 can be adapted for a wide range of laser sources. The laser source used will affect the overall height of the station. The sources have different focal lengths and this will change the largest part that may be marked in the system



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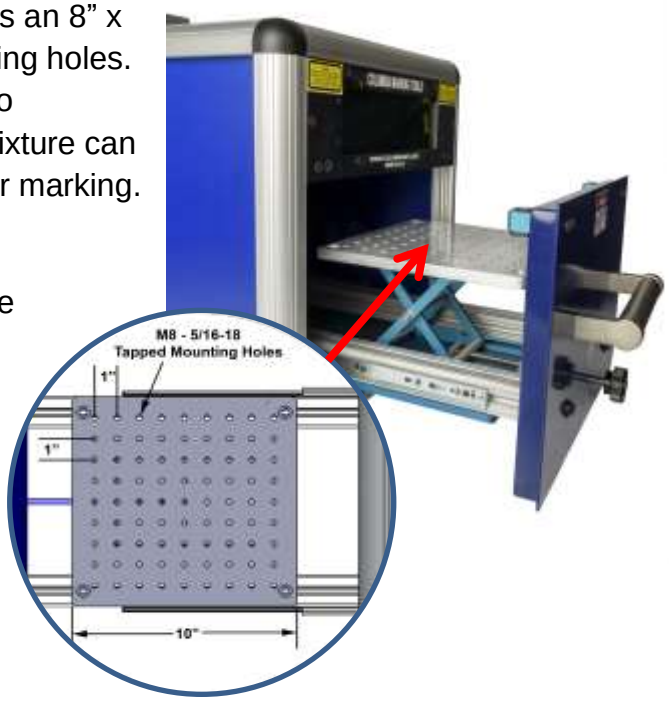
Compact Laser Solution LE16

The fixture breadboard mounting plate has an 8” x 8” matrix of M8 or 5/16”-18 tapped mounting holes. The holes are spaced 1” from centerline to centerline.The max. load is 100 lbs. The fixture can be adjusted to move the part into place for marking. The laser does not move.



A standard economic laser solution can be configured to meet different application requirements. Selections include:

- Laser Selection – power requirements
- Fume Extractor
- Auto-open door and cycle start with E-stop
- Machine base
- Castor upgrade

LE16HD – For automated production

In response to customer demand, the LE16HD is now offered for automated and high production applications. The LE16HD features a HEAVY-DUTY rail system to provide the durability for quick cycle times and high throughput. Slide out door provides clearance required for robot loading.

The automation package comes complete with a field bus in an easy-to-integrate junction box. A selection of PLC protocols are available.

The LE16HD includes the Automated Door option and a machine base.

Versatile Laser Solution LE24

The versatile model LE24 Laser Solution is designed for safely laser marking a wide range of parts. This model can be used as either a floor style or bench top system.

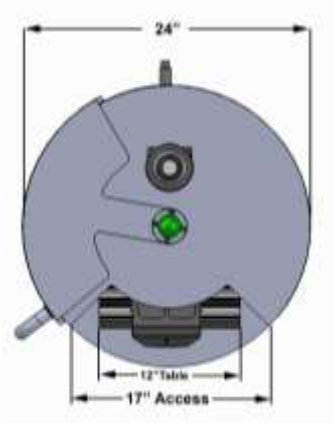
The LE24 has a work area of 12” x 9” x 10” (height varies – dependent on the laser source). This versatile standard Laser marking enclosure is designed for being flexible to fit a wide range of laser marking requirements.

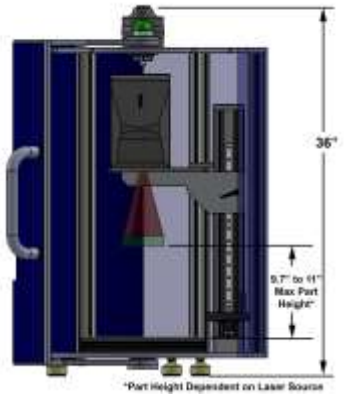
Standard Features

- Light-tight enclosure
- Large viewable safety glass
- Variable height adjustment
- Laser status light
- Sliding rounded door with integrated safety lock
- Auxiliary fume extractor port
- T-slot worktable

Enclosure Specifications:

- Voltage 120V AC
- Enclosure dimensions: 24”
- x 24” x 36” (W x D X H)
- Worktable: 12” x 9”
- Z axis 10” est (height varies by laser model used)
- Weight: 160#
- Class 1 certified to CDRH standards





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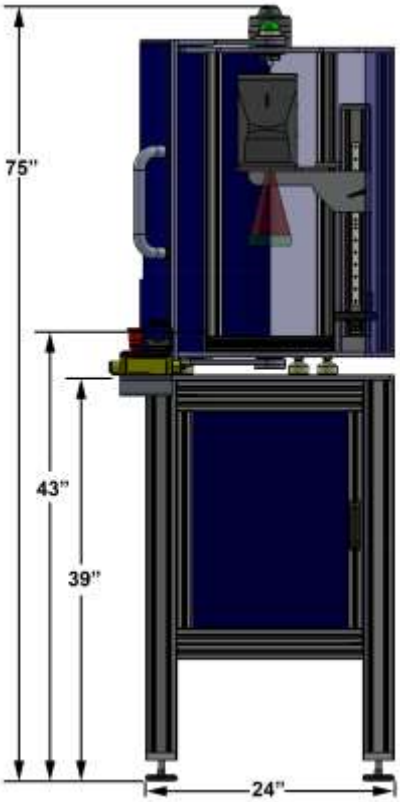
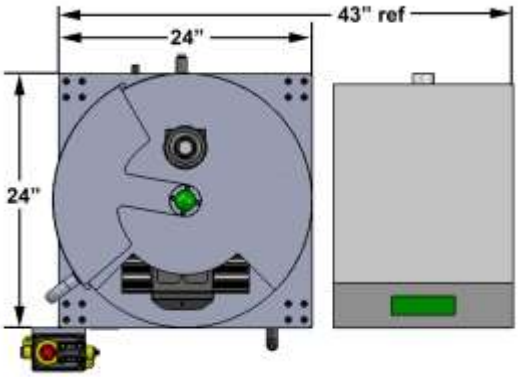
Versatile Laser Solution LE24

A multipurpose laser solution can be configured to meet different application requirements. Selections include:

- Laser selection – power requirements
- Industrial PC
- Fume extractor
- Auto-open door and cycle start with E-stop
- Machine base
- Castor upgrade
- Fixtures
- Integrated camera





Turn-Key Fixtures

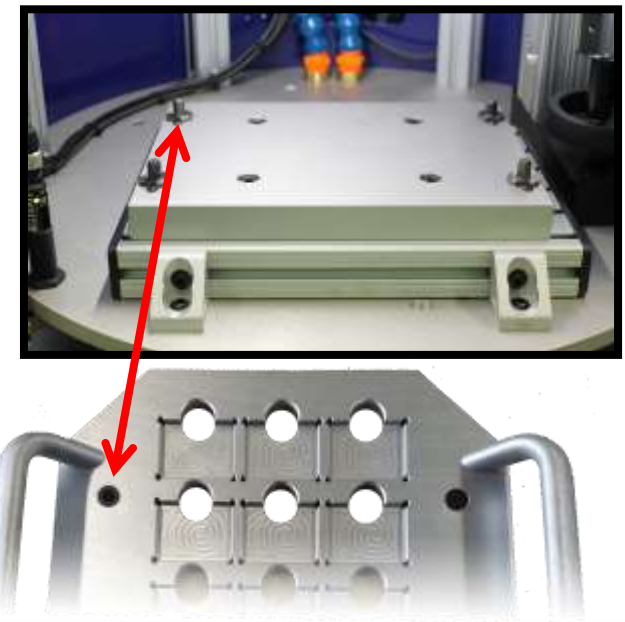
Dedicated fixture featuring quick clamping system

Columbia Marking Tools provides custom fixturing of parts for all of the CMT Eclipse™ laser systems. CMT also offers runoff and testing of all parts prior to shipment.

Different fixturing styles are used depending on the application:

- Individually-designed fixtures for each part. This is a great solution for dedicated applications with large lot sizes
- Universal master plate with locators, either Metric or Imperial options. This solution offers the most flexibility.
- Master fixture plate with locking pins for individual or multi-position fixtures. This is the best solution to offer maximum through-put in manually loaded operations.

Master fixture plate with locking pins for easy load and unload for multi-position fixtures. One fixture can be in the unload/loading process, while the other fixture is being marked.

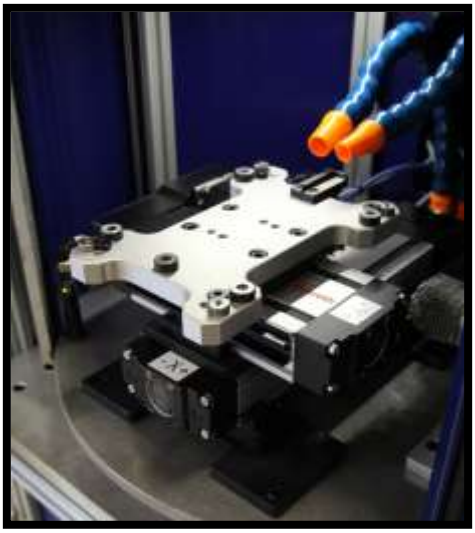


XY Table or Additional Axis

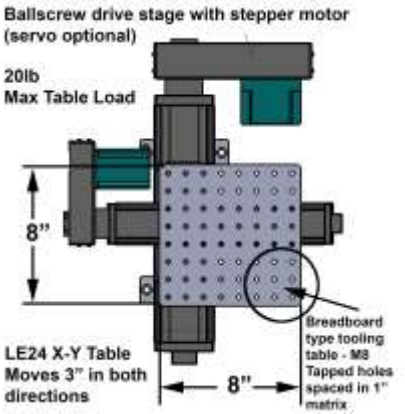
Columbia Marking Tools provides X-Y Tables and a wide range of other automated axes for all of the CMT Eclipse™ laser systems.

Additional axis options include:

- X-Y Tables – These are needed to mark parts outside of the marking window for the laser, or provide a solution with reduced focal degradation for small marks with maximum resolution.
  - Choice of stepper or servo motors, and length of axis
- Z axis - This will speed up part changeover, and offer multi-level marking
  - Choice of powered (not integrated), stepper or servo, and length of axis
- Rotator or theta Index – to mark around the OD of round parts, or on multiple sides



The multi-axis solutions include a system PLC, and operator controls. The HMI is included in the station PC. The easy to use interface has individual pages for: manual mode, part setup, machine set-up, and alarms.



The LE24 X-Y table provides an additional 3” of workspace in both directions. The 8” x 8” work table comes with a choice of metric or imperial breadboard. The maximum part weight recommended is 20 lbs.

Large Bed Laser Solution LE48

The large bed model LE48 Laser Solution is designed for safely laser marking large parts. This model has an amazing work area of 23” x 45” x 12.5” (the height depends on the laser source). This model comes complete with a floor base for stability.

Standard Features

- Light-tight Enclosure
- Large viewable Safety glass
- Variable height Adjustment
- Laser status light
- Inside work light
- Full floor style Machine base
- Ergo access Slide door with integrated safety lock
- Auxiliary fume Extractor port
- Station status indicator

Laser Enclosure Specifications

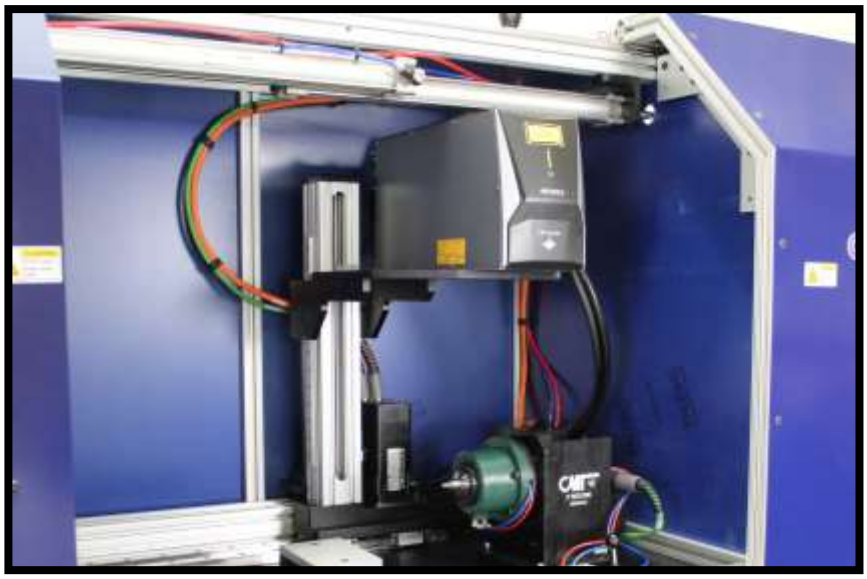
- Voltage 120V AC
- Enclosure dimensions: 27” x 48” x 65” (D X W X H)
- Worktable: 23.25” x 45”
- Z-axis 12.5” est (height varies by laser model used)
- Weight: 200#
- Class 1 certified to CDRH standards

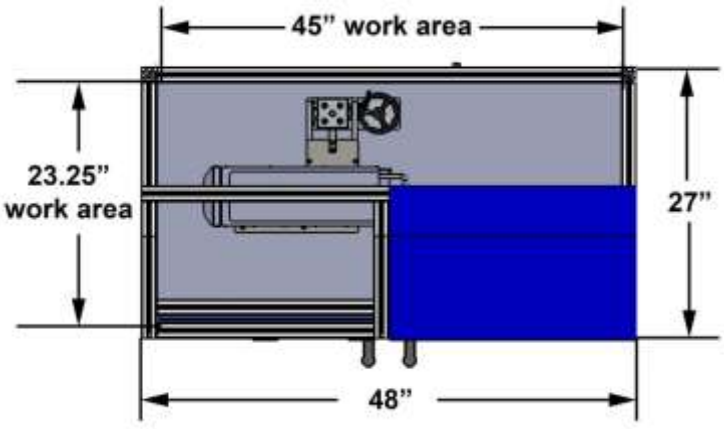
The LE48 is the perfect solution for marking carbide tools and other long parts.

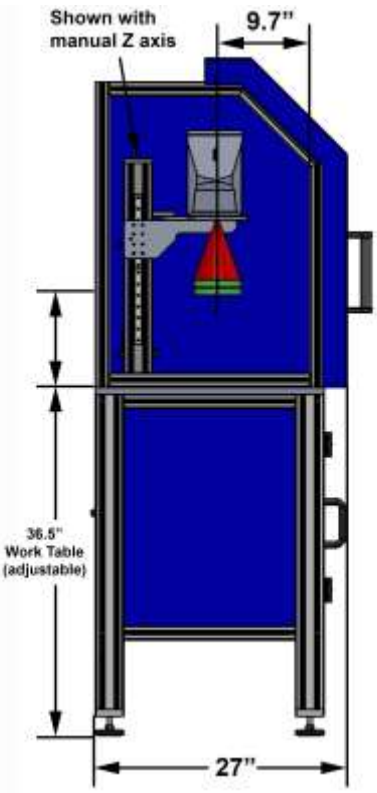
Large Bed Laser Solution LE48

The large area of the LE48 is a great platform for a wide range of upgrades. These upgrades include:

- Z axis – powered, stepper or servo
- X Table, or X-Y table
- Rotator, theta axis
- Integrated PC
- Integrated camera
- Fume extractor
- Fixturing







Automated Laser Solution LET

High production requires automation and the CMT Eclipse™ Model LET provides the high volume laser marking solution needed. This tunnel style enclosure features two light tight doors one on each end. The Model LET can be easily integrated over any conveyor line.

Features:

- Selection of laser marking source
- Steel enclosure
- Light-tight enclosure
- Two door – pass through design
- Flexible laser mounting
- NEMA 12 machine mounted control panel (PLC optional)
- Heavy duty machine base with tooling plate
- Fully complies with OSHA and has required CDRH and CSA certifications

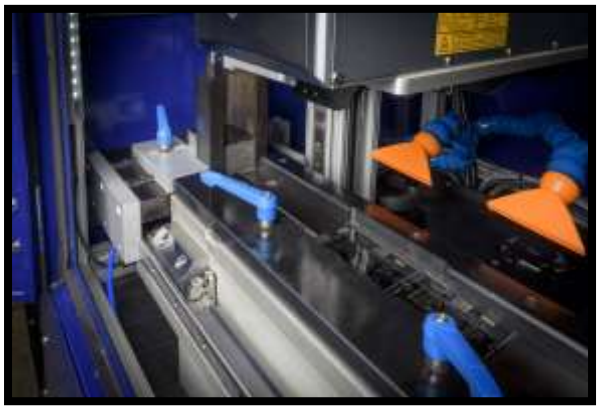
Options:

- Operator HMI/PC station
- PLC upgrade complete with conveyor
- Bowl feeder infeed
- Automated unload
- Integrated cameras
- Dual Lasers – for maximum throughput
- Light curtains

The CMT Eclispe™ Model LET is flexible in providing the high production automated marking solutions required. This system can be configured with a part rejection exit. With this feature it is advantageous to add a testing or gauging operation.

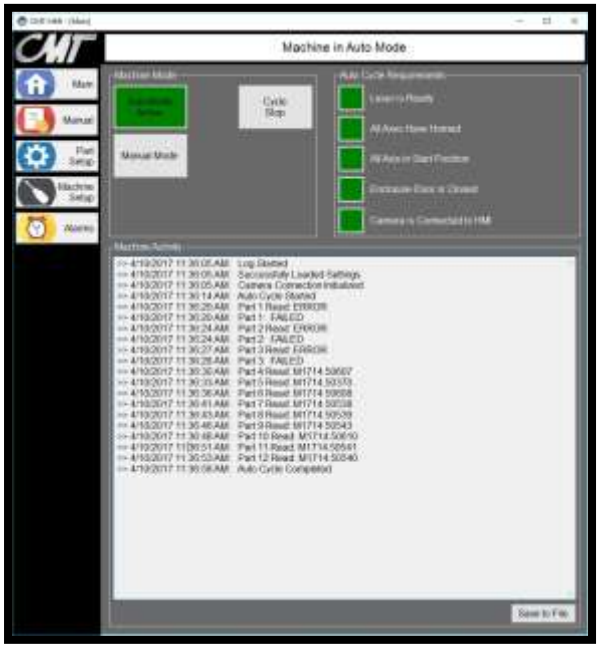
Automated Laser Solution LET

The CMT Eclipse™ Model LET can be configured as a stand-alone automated operation. This is perfect solution for automated tag marking.



Automated Tag Marking Features:

- Selection of laser marking source
- Steel enclosure
- Light tight enclosure
- Tag feeding system with input stack and output bin
- Flexible laser mounting
- NEMA 12 machine mounted control panel (PLC optional)
- Heavy duty machine base with tooling plate
- Fully complies with OSHA and has required CDRH and CSA



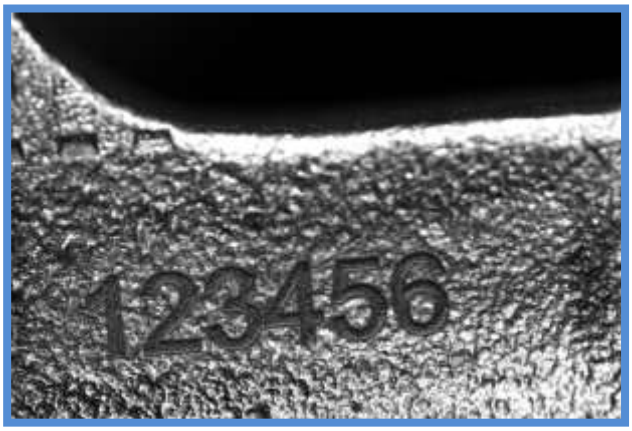
Standard CMT PLC interface has easy to use menus and pages for manual, automated, and machine parameters.

Model R Marking and More

The CMT Eclipse™ Model R Laser Marking Machine takes the standard "rotary" table design to another level. The Model R can be configured with many different stations. This allows the advancement of lean manufacturing by combining operations. The system can have 2 or more stations. The stations can be integrated with testing, cameras, or assembly tools. In addition, the design provides the flexibility to be used in either manual or fully automated operations.

Standard Features

- Light-tight enclosure – "rotary table" partitions
- Large viewable safety glass
- Laser status light
- Inside work light
- Integrated PC
- Full floor style machine base
- Auxiliary fume extractor port
- Station status indicator



LER40 Laser Enclosure Specifications

- Voltage 480V AC
- Enclosure dimensions: 72" x 50" x 76" (D X W X H)
- 2 Station worktable size: 15" x 15"
- Z axis 12" Est (height varies by laser model used)
- Weight: 600#
- Class 1 certified to CDRH standards

Model R Marking and More

"Rotary Table" partitions become part of the light-tight enclosure.

The Model R "revolving" door design comes in three sizes:

LER20 – Mini for small parts and, a table size of 20"

LER30 – Moderate sized for medium parts, and a table size of 30"

LER40 – The largest of our standard R models offer the most flexibility with a table size of 40"

The Model R "Rotary Table" design is easily configured with many different options:

- 2 or more stations
- Z-axis – powered, stepper or servo
- Integrated Camera for mark verification
- Integrated testing or guaging equipment
- Integrated assembly tools
- Coating systems
- Fume extractor
- Fixturing
- Automated unloading

CMT

COLUMBIA MARKING TOOLS

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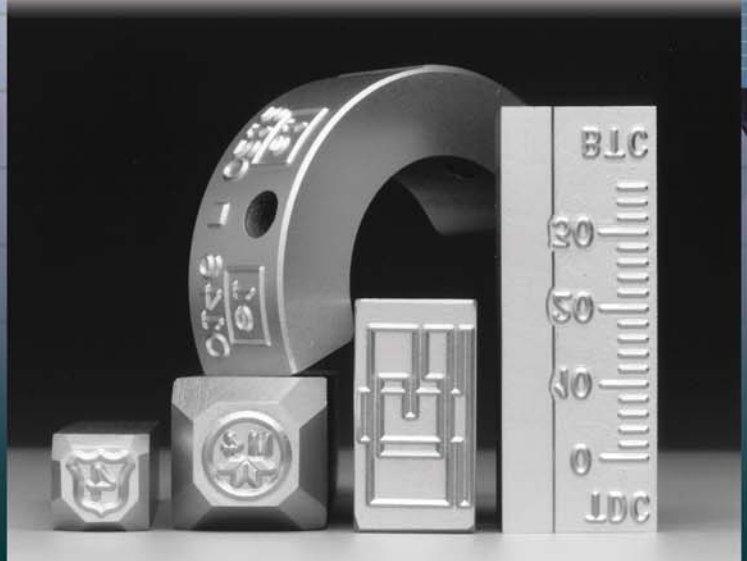
Standard Type
Hand Tools
Custom Marking Dies
Embossing Dies



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