Programmable Marking Catalog
Dot-Peen, Scribe, & Laser
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 by incorporating cutting edge technology and components.

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Handy Andy: This bench top dot-peen marking system is the most economical marker in its class. It is now available in two versions: 1) Standard for marking flats surfaces, 2) with a rotator for marking the OD of round parts, and is great for low volume applications where flexibility is required (<250 parts per day or less). ..........................4

M-Series Bench Top: The complete bench-top dot-peen marking system is offered in two versions: 1) Standard for marking flats surfaces, 2) with a rotator for marking the OD of round parts. Options include: Marking window sizes and Operator Touch Screen. These systems are good solutions for moderate production marking requirements (250-750 part per shift). .................6

H-Series Hand Held/Bench Top: This dual purpose dot-peen marking machine combines the bench top and handheld applications all into one solution. This system is both user friendly and mobile. Options include: marking window size, extra length cables, and mobile cart. ......................8

Model 100 I-Mark Controller: Basic marking machine controller includes I-Mark controller, Monitor, Keyboard, and required cables. This system will control all CMT programmable systems with two or three axes, and has an integrated motherboard with preloaded I-Mark programming software. This controller is designed for stand alone bench-top solutions, and has limited I/O .... 9

I-Series Dot-Peen: Compact industrial integration dot-peen marking system with heavy duty frame and linear rail guidance system to ensure precise operation. The marking speed is 3-5 characters per second. It has a very small foot print with 3 sides available for mounting. The systems come with two marking window options: 40 x 60 mm or 80 x 200 mm. Advanced communications options include programming over LAN and operation controls via Modbus, serial, Ethernet IP and more. .................................................................10

I-Series AS Scribe: “Silent Scribe” version of the popular I-Series Dot-Peen. This ball screw drive system has a marking speed of 2-3 characters per second in scribe mode. The system comes with two marking window options: 40 x 60 mm and 80 x 200 mm. This system is UID/2D Square-Dot® Compatible. Advanced communications options include programming over LAN and operation controls via Modbus, serial, Ethernet IP and more. .................................................................12

C-Series, Dot-Peen-Scribe: Versatile marking system offering both Dot-Peen and “Silent Scribe” marking in the same system. This ball screw drive system comes with either stepper drive offering up to 4 characters per second, or high speed servo drive offering up to 8 characters per second. The system controller offers the flexibility of DC start and mark complete signals, as well as serial and digital I/O communication. This system is UID/2D Square-Dot® Compatible. Advanced communications options include programming over LAN and operation controls via Modbus, serial, Ethernet IP and more. .................................................................14
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**Model 200 I-Mark Controller:** This industrial controller is designed for easy integration. Compact size and a **selection of communications functions** including: Serial, I/O, Modbus, and Ethernet IP. System may be programmed and monitored via LAN ..........18

**B2 Black Box I-Mark Controller:** System controller to provide **motion control to any Mfg. dot-peen or scribe system.** All the functionality of the I-Mark controller including the selection of communications options and the advanced networking capabilities .....20

**Model 300 I-Mark Controller:** **Expanded controller** offers options including motion, axes or **dual machine controls.** All the functionality of the I-Mark controller including the selection of communications options and the advanced networking capabilities ..........21

**I-Mark Software:** **Graphical User Interface (GUI)** featuring easy to use icons. This software is used to **program the layouts** (marking legends) of any I-Mark controller ...22

**Eco-Mark Laser Bench-top:** **Basic bench-top** laser station offers price competitive solution for **low volume** laser marking applications. .........................................................24

**Eco-Mark Laser Full Station:** **Complete industrial laser marking station** including choice of laser source, **all required OSHA guarding**, roomy work area, and touch screen HMI interface .................................................................25

**CMT Pro-Mark Laser:** Designed for each application, these systems combine laser marking with **automation to suit each application.** Features include part handling, loading and unloading, turntables, automated guarding, and mark verification ..........26

**Options:** Available options include **part touch-off** auto-start, stands, pedestals, machine bases, vises and custom part fixtures.................................28

**Square-Dot®:** CMT’s **patented high resolution marking process** to apply **2D/UID machine readable codes** to a variety of materials. This process scribes a matrix of small square cells into the material. The mark provides the best direct part reading with a vision system as the cells are filled in similar to a laser mark but much deeper and often with better contrast .................................................................30

**Mark –n– Read Station:** Combining the Slim head design of the C series with the I-Mark Pro software which integrates the **marking and reading functions into one streamline interface.** Also includes a historical database of all marked 2D code verifications. ......31
Handy Andy

This complete bench top dot-peen marking system is the most economical marker in its class. It is now available with a third axis as an option for marking the OD of round parts, and is great for low volume applications where flexibility is required (<250 parts per day).

- System is available with pneumatic or electric dot-peen
- X-Y motion or with 3rd axis rotator to mark the OD of round parts
- Connects to USB on PC, software and cable are included
- Optional table top stand offers easy set-up

Optional Stand: Billet aluminum T-slot table 12” x 15” (305 x 380mm), includes heavy duty column with manual adjustment for parts up to 12 5/16” (310mm)

Optional Rotator: To mark the OD of round parts. Chuck load up to 4 lbs, and maximum OD up to 3.14” (80mm).

PC Software Included:
- PC required (not supplied)
- Simple icons
- Easy visual layout of mark
- Radial marks
- Automatic serialization
- Automatic date coding
- Build logos – with internal basic shapes
- Import logos
- Works with Windows
Handy Andy How to Order

<table>
<thead>
<tr>
<th>Model/Feature</th>
<th>Symbol</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handy Andy</td>
<td>HandyAndy</td>
<td>HandyAndy-E-R</td>
</tr>
<tr>
<td>Air</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Electric</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Std. X-Y Axis</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>With Rotator</td>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>

Optional Component

<table>
<thead>
<tr>
<th>Optional Component</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand</td>
<td>HandyAndyStand</td>
</tr>
</tbody>
</table>

Utilities:

- Electrical components require 110 VAC power,
  - 6 ft (1.8m) electrical cord supplied
- Air power required for pneumatic dot-peen pin*
  - 1/4 NPT fitting requires connection to air supply
  - Pressure/depth control through supplied regulator (30-75 PSI operating range)
*This feature is not included with electrically powered pin

Features:

- 3.15” x 1.97” (50 x 80mm) marking window
- 3-4 (1/8”, 3mm) characters per second
- USB interface (cable included 3’, .9m length)
- Carbide pin included - Marks plastic, wood and metals (up to 45 RC)
- Rotator parameters: Chuck load up to 4 lbs (1.8 kg), and maximum OD up to 3.14” (80mm)

Illustration of Handy Andy

Envelope dimensions:
21” high x 15” wide x 15” long
(520 x 380 x 380mm)

Maximum clearance:
10.75” (275mm)
Maximum Max Inset:
6” (150mm)

Marking window:
1.97” x 3.15”
(50 x 80mm)

Table Size: 12” x 15” (310 x 380mm)

Complete detailed drawings available for download at [www.marking-machines.net](http://www.marking-machines.net)
M-Series Marking Machines

The complete I-Mark bench-top dot-peen marking system is offered in two versions:
1) Standard for marking flats,
2) With a third axis for marking the OD of round parts.

M-Series dot-peen systems mark a wide variety of metal and plastic parts with a selection of fonts for alpha/numeric, serial numbers, date codes, logos, and 2D codes. This machine features the easy to use I-Mark software (details page 22).

Options include: a selection of marking windows and an operator touch screen upgrade. These systems are good solutions for moderate production (250-750 parts per shift) marking requirements.

Complete marking system:
- Pneumatic Dot-Peen Marking Head in three window sizes
- Bench-top stand with Standard aluminum T-slot table 12” x 14” (305 x 380mm) includes heavy duty column with manual vertical adjustment for parts up to 10 ¾” (275mm) tall.
  - Model 100 I-Mark Controller (details page 9)
  - Keyboard and monitor with optional touch-screen upgrade
  - Shut-off/Filter/Regulator
    - All cables required to set-up marking station

Optional 3rd Axis Rotator: To mark the OD of round parts. Chuck load up to 15 lbs (6.8 kg), jaw size of 3.14” (80mm) and maximum OD up to 6” (150mm). A longer table is used to accommodate the rotator.

Options: Machine base, part locating fixture, push button start, custom software (page 28).
Bench Top M-Series How to Order

To Order: Select only the symbols that represent the marker feature that is needed. Place that symbol in the sequence as shown.

<table>
<thead>
<tr>
<th>Model/Feature</th>
<th>Symbol</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Bench Top</td>
<td>IM</td>
<td>IM-M75-T</td>
</tr>
<tr>
<td>Marking Windows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3&quot; x 3&quot; (75 x 75mm)</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>5&quot; x 5&quot; (125 x 125mm)</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>8&quot; x 8&quot; (200 x 200mm)</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Standard Pin</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Fixed Dot</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Touch Screen Upgrade</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>With Rotator</td>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>

Features:
- Marking Window Selections
  - 3" x 3" (75 x 75mm)
  - 5" x 5" (125 x 125mm)
  - 8" x 8" (200 x 200mm)
- Marking Pin Options
  - Standard pin - Marking speed of 3-4 (1/8", 3mm) characters per second
  - Fixed dot placement for UID code – Marking speed of 1-2 (1/8", 3mm) characters per second
- Monitor and Keyboard with integrated mouse
- 5 ft (1.5m) cable to connect marking head to controller
- Marks materials (up to 45 RC)
- Rotator parameters: Chuck load up to 15 lbs, and max OD up to 6" (150mm)

Utilities:
- Electrical components require 110 VAC power, 6 ft (1.8m) electrical cord supplied
- Air powered pin - 1/4 NPT fitting requires connection to air supply
- Pressure/depth control through supplied regulator (30-75 PSI operating range)

Illustration of IM-M series

Color Monitor:
17" (430mm)
Or Touch Screen upgrade

Envelope dimensions:
28" high x 28" wide x 15" long (710 x 710 x 380mm)

Keyboard included with integrated mouse

Complete detailed drawings available for download at www.marking-machines.net
H-Series Hand Held/Bench Top:

This combination hand held/bench top Dot-Peen Marking Machine combines rugged design of the I Series head with the easy-user interface of the M-Series machine. Options include: selection of marking window size, extra length cables, and mobile cart.

This versatile dot-peen system can be used a standard bench-top machine or just remove the head to use as a hand held marking system. The quality steel base has industrial grade castors for complete mobility (IMH-CART). The marking speed is 4 (1/8", 3mm) characters per second.

- Integrated cycle start button in the handle
- Custom part locating stand-off provided upon request

I-Mark H Series How to Order

<table>
<thead>
<tr>
<th>To Order: Select only the symbols that represent the marker feature that is needed. Place that symbol in the sequence as shown.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model/Feature</strong></td>
</tr>
<tr>
<td>H Series</td>
</tr>
<tr>
<td>Medium: 60 x 40mm</td>
</tr>
<tr>
<td>Large: 200 x 80mm</td>
</tr>
<tr>
<td>Standard Pin</td>
</tr>
<tr>
<td>1” Extended Pin</td>
</tr>
<tr>
<td>10 ft Cable</td>
</tr>
<tr>
<td>25 ft Cable</td>
</tr>
</tbody>
</table>

Optional

| Sturdy Mobile Cart | IMH-CART |

Utilities:
- Electrical components require 110 VAC power, 6 ft (1.8m) electrical cord supplied
- Air power required. Pressure/depth control through supplied regulator (30-75 PSI operating range – 1/4 NPT fitting requires connection to air supply)

Features:
- Marking windows:
  - Medium: 1.59" x 2.35" (40 x 60mm)
  - Large = 3.18" x 7.87" (80 x 200mm)
- Speed: 4 (1/8", 3mm) char per sec
- I-Mark Model 100 controller (pg 9)
- Monitor & Keyboard
- Bench-top stand with Quick-Release
- Standard aluminum T-slot table 12” x 14” (305 x 380mm) includes column with manual adjustment for parts up to 12” (305mm) tall.
- 10 ft (3m) or 25 ft (7.6m) cable to connect marking head to controller
- Carbide pin included - Marks plastic, wood, and metals (up to 45 RC)
- Weight of head: 23 lbs (10.4 kg)
- Marking head: 13”L x 11”W x 9”D (330 x 280 x 228mm)
Model 100 I-Mark Controller

Basic marking machine controller includes I-Mark controller, monitor, keyboard with integrated mouse, and cables. This system will control all CMT programmable systems with two or three axes, and has an integrated motherboard with preloaded I-Mark programming software. This controller is designed for **Basic Marking Station Functionality**, and has limited I/O.

**Monitor:** Color flat screen 17” (430mm) Includes (2) spare USB connection for additional mouse or loading/backing up programs. Optional touch screen upgrade with on-screen digital keyboard.

**Keyboard:** Full size keyboard with integrated mouse

**Cables:** 5 foot cable marking cable, 6 foot power cable, 6 foot VGA cable, 3foot keyboard cable

**Enclosure:**
- Nema 4 industrial enclosure 12” W x 8” H x 5” D (305 x 205 x 127mm)
- I-Mark fast and accurate motor drive for stepper motor control
- Four (4) 24Vdc optically isolated digital I/O fully programmable with software for controlling external hardware devices; push button cycle start, clamp release ect (2 inputs and 2 outputs)
- Data input serial port for use with barcode scanner
I-Series Dot-Peen Unit

Compact industrial integration dot-peen marking system with heavy duty frame and linear rail guidance system to ensure precise operation. The marking speed is 3-5 characters per second. It has a very small foot print with 3 sides available for mounting. These systems come with two marking window options: medium and large size. The I-Mark controller uses the latest in drive technology.

Complete marking unit for integration:
- Pneumatic Dot-Peen Marking Head in two window sizes
- Model 200 I-Mark Controller
- I-Mark software for programming (details page 22)
- Power cable, Marking head cable, Cross over cable, and LAN cable

The I-Mark-ID Marking Head:
- Air and controller connection located on back of marker.
- Solid aluminum frame with ½” plates on three sides for easier mounting, all pre-drilled & tapped.
- High torque stepper motors and linear rails for precise positioning.
- Pneumatic pin with carbide tip to mark materials up to 45 Rc
- Mountable in any orientation

The I-Mark Model 200 controller:
- Compact design for easy installation into production equipment.
- Communication options including remote programming over LAN, and operational controls via I/O, Modbus, Serial, Ethernet IP ect.
- Monitor upgrade and more details page 18.

Options:
- Pedestal mount
- Upgrades: database and camera integration
I-Series Dot-Peen Unit

I-Series Dot-Peen How to Order

To Order: Select only the symbols that represent the marker feature that is needed. Place that symbol in the sequence as shown.

<table>
<thead>
<tr>
<th>Model/Feature</th>
<th>Symbol</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Mark Integrator Dot-Peen</td>
<td>IM-ID</td>
<td>IM-ID60-D-X-25</td>
</tr>
<tr>
<td>Medium Marking Window</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Large Marking Window</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td></td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

Utilities:
- Controller requires 110 VAC power, 6 ft (1.8m) electrical cord supplied
- Air power required, 8mm push-in tube fitting requires connection to air supply (30-75 PSI operating range)

Features:
- High torque stepper motors with cog tooth drive belts allow mounting of unit in any orientation
- 2 marking windows;
  - Medium = 1.59” x 2.35” (40 x 60mm)
  - Large = 3.18” x 7.87” (80mm x 200 mm)
- Marking speed of 5 (1/8”, 3mm) cps
- 10 ft (3m) or 25 ft (7.5m) cable from head to controller
- Carbide pin included – Marks plastic, wood and metals (up to 45 RC)
- Weight of marking head only: 12.42 lbs (5.6 kg)

Envelope dimensions:
- Medium - 8.44” high x 7.1” x 7.1” (214 x 180 x 180mm)
- Large: 8.44” high x 8.7” x 12.8” (214 x 220 x 325mm)

Marking windows:
- Medium - 1.59” x 2.35” (40 x 60mm)
- Large - 3.18” x 7.87” (80mm x 200mm)

Complete detailed drawings available for download at www.marking-machines.net

Illustration of IM-ID series

Mounting available on three sides

Standard pin or 1” pin extension for marking in recesses

Upgrade for industrial debris shield
I-Series Silent Scribe

“Silent Scribe” version of the popular I-Series Dot-Peen. This ball screw drive system has a marking speed of 4 characters per second in scribe mode. The systems come with two marking window options: medium and large size. This system is UID/2D Square-Dot® Compatible. The I-Mark controller uses the latest in drive technology.

Complete marking unit for integration:
- Pneumatic Scribe Marking Head in two window sizes
  - Model 200 I-Mark Controller
  - I-Mark software for programming
    (details page 22)
  - Power cable, Marking head cable, Cross over cable, and LAN cable

The I-Mark-IS Marking Head:
- Air and controller connection located on back of marker.
- Solid aluminum frame with ½" plates on three sides for easier mounting, all 3 pre-drilled & tapped.
- High torque stepper motors and ball screw drives for precise positioning.
- Pneumatic pin with diamond tip to mark hard parts 45 - 65 Rc

Mountable in any orientation

The I-Mark Model 200 controller:
- Compact design for easy installation into production equipment.
- Communication options including remote programming over LAN, and operational controls via I/O, Modbus, Serial, Ethernet IP ect.
- Touch screen/monitor upgrade and more details page 18

Options:
- Pedestal mount
- Upgrades: database and camera integration
I-Series Silent Scribe

I-Series Scribe How to Order

To Order: Select only the symbols that represent the marker feature that is needed. Place that symbol in the sequence as shown.

<table>
<thead>
<tr>
<th>Model/Feature</th>
<th>Symbol</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Mark Scribe</td>
<td>IM-IS</td>
<td>IIM-IS60-D-X-25</td>
</tr>
<tr>
<td>Medium Marking Window</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Large Marking Window</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Without Shield</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>With Shield</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Standard Pin</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>1” Extended Pin</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>10 ft Cable</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>25 ft Cable</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

Utilities:
- Controller requires 110 VAC power, 6 ft (1.8m) electrical cord supplied
- Air power required, 8mm push-in tube fitting requires connection to air supply (30-75 PSI operating range)

Features:
- High torque stepper motors with ball screw drive
- 2D and Square-Dot® capable
- 2 marking windows;
  - Medium = 1.59” x 2.35” (40 x 60mm)
  - Large = 3.18” x 7.87” (80mm x 200mm)
- Marking speed of 4-5 (1/8”, 3mm) cps
- 10 ft (3m) or 25 ft (7.5m) cable from head to controller
- Diamond pin included – Marks hard and carbide metals (up to 65 RC)
- Weight of marking head assembly: 19lbs

Envelop dimensions:
- Medium - 8.44” high x 7.1” x 7.1”
  (214 x 180 x 180mm)
- Large: 8.44” high x 8.7” x 12.8”
  (214 x 220 x 325mm)

Marking windows:
- Medium - 1.59” x 2.35”
  (40 x 60mm)
- Large - 3.18” x 7.47”
  (80mm x 200mm)

Complete detailed drawings available for download at [www.marking-machines.net](http://www.marking-machines.net)

Illustration of IM-IS series

Mounting available on three sides

Standard pin or 1” pin extension for marking in recesses

Upgrade for industrial debris shield
C-Series, Dot-Peen & Scribe Custom Solutions

Versatile marking system offering both Dot-Peen and “Silent Scribe” marking in the same system. This ball screw drive system comes with either stepper drives offering up to 5 characters per second, or high speed servo drives offering up to 8 characters per second. The system controller offers the flexibility of DC start and mark complete signals, as well as serial and digital I/O communication. This system is UID/2D Square-Dot® Compatible.

Complete marking unit for integration:
- Custom C-Series Marking head
- Model 200 I-Mark Controller
  - I-Mark software for programming (details page 22)
  - Power cable, Marking head cable, Cross over cable, and LAN cable

The I-Mark-C Marking Head:
- Dot-Peen and scribe
- Air or electric pin control
- Selection of marking windows
- Marking speed selection:
  - stepper motor – 5 characters per second,
  - servo – 8 characters per second
- Ball screw drive
- Mountable in any orientation

The I-Mark Model 200 controller:
- Compact design for easy installation into production equipment.
- Communication options including remote programming over LAN, and operational controls via I/O, Modbus, Serial, Ethernet IP etc.
- Touch screen/monitor upgrade and more details page 18

Options:
- Pedestal mount
- Upgrades: database and camera integration
C-Serie Dot-Peen & Scribe Custom Solutions

C-Series Dot-Peen & Scribe How to Order

<table>
<thead>
<tr>
<th>Model/Feature</th>
<th>Symbol</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Mark Custom</td>
<td>IMC</td>
<td>IMC-60-ST-ES-ZE</td>
</tr>
</tbody>
</table>

Window Size

<table>
<thead>
<tr>
<th>Window Size</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 (1.6&quot; x 2.3&quot; or 60 x 40mm)</td>
<td>60</td>
</tr>
<tr>
<td>150 (4&quot; x 6&quot; or 150 x 100mm)</td>
<td>150</td>
</tr>
<tr>
<td>300 (8&quot; x 12&quot; or 300 x 200mm)</td>
<td>300</td>
</tr>
<tr>
<td>500 (10&quot; x 20&quot; or 500 x 250mm)</td>
<td>500</td>
</tr>
</tbody>
</table>

Speed/Drive

<table>
<thead>
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<th>Speed/Drive</th>
<th>Symbol</th>
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<tbody>
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<td>SE (Servo)</td>
<td>SE</td>
</tr>
<tr>
<td>ST (Stepper)</td>
<td>ST</td>
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Head Style

<table>
<thead>
<tr>
<th>Head Style</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Scribe (diamond scribe pin)</td>
<td>ES</td>
</tr>
<tr>
<td>Electric Peen (carbide pin)</td>
<td>EP</td>
</tr>
<tr>
<td>Air Scribe (diamond scribe pin)</td>
<td>AS</td>
</tr>
<tr>
<td>Air Peen (carbide pin)</td>
<td>AP</td>
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Z Axis Options

<table>
<thead>
<tr>
<th>Z Axis Options</th>
<th>Symbol</th>
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<tbody>
<tr>
<td>Electric Z-40mm (for DPS60)</td>
<td>ZE</td>
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<tr>
<td>Electric Z-100mm</td>
<td>ZEA</td>
</tr>
<tr>
<td>Pneumatic Z-50mm</td>
<td>ZP</td>
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<tr>
<td>No Z Axis Options</td>
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Cable Length

<table>
<thead>
<tr>
<th>Cable Length</th>
<th>Symbol</th>
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<tbody>
<tr>
<td>10 ft Cable</td>
<td>-</td>
</tr>
<tr>
<td>25 ft Cable</td>
<td>25</td>
</tr>
</tbody>
</table>

Features:

- Ball screw drive, offers precise dot-peen and scribe accuracy
- Marks in dot-peen or scribe mode
- Marking windows:
  - 60 = 1.6" x 2.3"
  - 150 = 4" x 6"
  - 300 = 8" x 12"
  - 500 = 10" x 20"
- Marking speed:
  - Stepper marks 5 (1/8", 3mm) characters per second
  - Servo marks 8 (1/8", 3mm) characters per second
- 10ft (3m) or 25 ft (7.6m) cable to connect marking head to controller
- Pin selections:
  - Carbide pin for peen – Marks plastic, wood and metals (up to 45 RC)
  - Diamond pin for scribe – marks harder parts and offers Square-Dot® (page 30)

Utilities:

- Electrical components require 110 VAC power, 6 ft (1.8m) electrical cord supplied
- Air power required for pneumatic dot-peen (30-75 PSI)*
  - 8mm Push-in tube fitting

*Not a requirement with electrically powered unit
C-Series Features

**Envelope Dimensions**
- IMC-60STAPZE: 9.5” x 9.5” x 7.5” (240 x 240 x 190mm)
- IMC-150SEES00: 13.5” x 21” x 9.5” (340 x 535 x 240mm)

**Marking Window**
- IMC-60STAPZE: 1.6” x 2.3” (60 x 40mm)
- IMC-150SEES00: 4” x 6” (300 x 200mm)

**Extended Head**
- For marking applications requiring Part clearance

**Electric Scribe Head**
- Diamond pin provides superior marking clarity and ability to provide Square-Dot® 2D marks

**Stepper Motors**
- Marks up to (5) 1/8”, 3mm character per second

**Automatic Electric Z-Axis**
- able to mark on multi-level surfaces in one marking pass

**Ballscrew drives**
- Industrial ballscrew drive for precise dot placement, protected by bellows

**Pneumatic Dot-peen Head**
- Carbide pin provides superior marking depth

**Servo Motors**
- Marks up to (8) 1/8”, 3mm character per second

**Ballscrew drives**
- Industrial ballscrew drive for precise dot placement, protected by bellows

Visit marking-machines.net to download operation guides and additional assembly drawings.
Columbia Marking Tools provides complete machine design and build services to fully integrate and install custom systems.

IM-C complete turn-key station for marking keys

Complete turn-key IM-C station to mark brake calipers with operator card scanner and palm button cycle start

IM-C bench top system marking a wide variety of aeronautical parts with rotator and automatic air chuck for quick marking, loading and unloading of round parts

Helping you make your mark!

More custom solutions at www.columbiamt.com

Columbia Marking Tools provides complete machine design and build services to fully integrate and install custom systems.
Model 200 I-Mark Controller

The I-Mark controller is designed for easy integration. It features compact size and a selection of communications functions including: Serial, I/O, Modbus, and Ethernet IP. The standard controller is programmed with a customer provided PC using the I-Mark software. Using this same software the system may be monitored via a LAN. Upgrade options include an integrated PC, standard or touch screen monitor, and keyboard.

- NEMA 4 industrial enclosure 16" W x 12" H x 8" D (406 x 305 x 203 mm)
- (4) Mounting holes.
- Sixteen (16) 24vdc optically isolated digital I/O fully programmable with software for controlling external hardware devices to help save costs in automated applications. (8 inputs and 8 outputs)
- Binary select feature for selecting & executing up to 32 programs via the I/O
- Ethernet 10/100 BaseT communications for programming and integration into system network (can be used with static IP setup or in DHCP mode on a network)
- Machine protocols include: serial, I/O, Modbus, and Ethernet IP.
- I-Mark networkable motor drives for stepper or servo motor control with 10a peak motor output per axis. (Up to 4-axis per controller)
- Digital current and servo loops with encoder for controlling servo motors
- Closed or open loop stepper motor control with micro stepping capability.
- Industrial Harting connectors for marking head
- Manual reset / E-stop featured as remote options in the I/O interface
Model 200 Controller How-to-Order

To Order: Select only the symbols that represent the marker feature that is needed. Place that symbol in the sequence as shown.

<table>
<thead>
<tr>
<th>Model/Feature</th>
<th>Symbol</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Mark Model 200</td>
<td>IM200</td>
<td>IM200-</td>
</tr>
<tr>
<td>Basic integration (std)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Operator Station upgrade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Screen</td>
<td>OS</td>
<td></td>
</tr>
<tr>
<td>Touchscreen</td>
<td>OT</td>
<td></td>
</tr>
</tbody>
</table>

The Model IM200 basic integration controller is standard with the IM-ID and IM-IS I Series integration marking systems.

Utilities:
- Electrical components require 110 VAC power, 6 ft (1.8m) electrical cord supplied

Options:
- Basic integration model as shown is designed for seamless interfacing into production machinery
- Operator Interface
  - 17” (430mm) screen with Keyboard
  - Touchscreen with Keyboard backup
- I/O included with all options
- Ethernet for programming
- Communication options
  - Modbus (std)
  - Serial (RS232)
  - Ethernet IP

Remote Access:
Model 200 has Ethernet connection to provide remote access for programming of the marking legends and system monitoring including process times and fault information.

Operator Station upgrade:
Model 200 has optional operator station upgrade. This includes a choice of two different monitor styles. This allows the operator more control over the marking systems and includes the flexibility to integrate other systems including camera and verification software into one platform.
**B2 Black Box**

The I-Mark Black Box controller provides *motion control to any dot-peen or scribe system*. It features all the functionality of the I-Mark controller including the selection of communications options and the advanced networking capabilities. All the I-Mark functions and advanced communications technology can be applied to other marking systems.

- NEMA 4 industrial enclosure 16" W x 12" H x 8" D (406 x 305 x 203 mm)
- (4) Mounting holes.
- Sixteen (16) 24vdc optically isolated digital I/O fully programmable with software for controlling external hardware devices to help save costs in automated applications. (8 inputs and 8 outputs)
- Binary select feature for selecting & executing up to 32 programs via the I/O
- Ethernet 10/100 BaseT communications for programming and integration into system network (can be used with static IP setup or in DHCP mode on a network)
- Machine protocols include: serial, I/O, Modbus, and Ethernet IP.
- I-Mark networkable motor drives for stepper or servo motor control with 10a peak motor output per axis. (Up to 4-axis per controller)
- Digital current and servo loops with encoder for controlling servo motors
- Closed or open loop stepper motor control with micro stepping capability.
- Industrial Harting connectors for marking head
- Manual reset / E-stop featured as remote options in the I/O interface
Model 300 I-Mark Controller: Dual Marking Heads

Expanded controller offers options including motion, axes or dual machine controls. All the functionality of the I-Mark controller including the selection of communications options and the advanced networking capabilities.

- All the same features as the Model 200 controller.
- Larger Nema 4 industrial enclosure to incorporate 2 complete machine operational interfaces.

25% Cost savings:
immediate cost savings of 25% of two units plus installation and maintenance savings.

Model 300 Controller How-to-Order

To Order: Select only the symbols that represent the marker feature that is needed. Place that symbol in the sequence as shown.

<table>
<thead>
<tr>
<th>Model/Feature</th>
<th>Symbol</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Mark Model 300</td>
<td>IM300</td>
<td>IM300-IM-ID60</td>
</tr>
<tr>
<td>Basic integration (std)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Operator Station upgrade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Screen</td>
<td>OS</td>
<td></td>
</tr>
<tr>
<td>Touchscreen</td>
<td>OT</td>
<td></td>
</tr>
<tr>
<td>I Series Number(s)</td>
<td>######</td>
<td></td>
</tr>
</tbody>
</table>

Utilities:
- Electrical components require 110 VAC power, 6 ft (1.8m) electrical cord supplied

Options:
- Basic integration model as shown is designed to control (4) axis or 2 complete marking heads
- Operator Interface
  - 17” (430mm) screen with Keyboard
  - Touchscreen with Keyboard backup
- I/O included with all options
- Ethernet for programming
- Communication options
  - Modbus (std)
  - Serial (RS232)
  - Ethernet IP
I-Mark Software

Graphical user interface featuring easy to use icons. This software is used to program the layouts (marking legends) of any I-Mark system. This software is preloaded in our M and C series turnkey systems, and is used in to program the controller for the I Series integration systems.

- Intuitive graphical user interface for mark layout / program creation.
- Drag and Drop functionality for easy program creation and entity sizing.
- Generate fixed or dynamic text entities including dates, times, counters, serial numbers, text placeholders, shift codes or ASCII characters.
- Dynamically adjustable character height, width, and separation features
- Multiple font support including OCR
- Advanced 2D data matrix code printing with built in depth/position control tools (model dependent)
- CMT patented SquareDot™ (Excellent option for 2d matrix code printing on cast surfaces)
- Digital I/O within the marking sequence for creation of fully automated workstations.
- Import DWG/DXF drawing files for background imaging or graphical printing.
- Marking simulator for testing mark position before actual marking process.
I-Mark™ - The next level of software

All the standard marking software features and more:

- Navigational window allows for remote programming of multiple machines. Including competitor’s systems using I-Mark controllers.
- Automatic system cross checking shows with green check mark or red x if the marking program has been altered.
- Integrated video files reduce training time.
- Visual sequencing of marking objects and non-printing items, such as dwell times.
- Machine controller page with advanced diagnostics.
- Advanced fault and production data logging locally provide detailed cycle time information to fine tune marking process.
- Complete integration of Cognex vision verification software performs complete mark and read cycle.
- Integrate and control other devices and motion controls. The I-Mark software and motion controllers are capable of handling clamping devices, slides, rotational tables, position sensors and more.
Basic bench-top laser station offers price competitive solution for low volume laser marking applications. The CMT EcoMark-2 Watt Laser offers the very latest technology in laser marking equipment. The 2 watt laser machine will mark parts and materials that used to be possible only with a high powered laser machine.

Includes:
- Laser Head
- Power Controls
- Benchtop stand
- Laptop computer
- Windows Software
- All required cables
- 2 safety glasses

Features:
- High speed / precision galvanometer beam control
- 100mm F-Theta Focusing Lens for a 60mm x 60mm marking area
- 1064nm wave length diode-pumped laser source (internally fiber coupled)
- Q-switched operation
- CDRH Class IV level of manufacture
- Benchtop stand with manual Z axis height adjustment
- Laptop with laser marking software pre-installed and configured
- Focusing diode option for easy focal point setting (height setting)
- A Red diode tracing feature which displays an outline box for graphics and true trace for text enabling precise marking legend placement onto part prior to actually marking the part
- The ability to save part files complete with all marking parameters
- Marks any true-type font
- Full serialization, includes placeholders and fixed data prefix/suffix.
- UID compliant

Power Supply Unit:
- 200 watt total power consumption, air cooled
- CDRH Class IV level of manufacture
- Input power: 100-240VAC, 2A 50/60 Hz

CMT Custom Marking Software featuring:
- Windows based software with extremely easy operator interface
- Including drag and drop features for text, graphics, barcodes, circles and lines
Eco-Mark Laser Full

Complete industrial laser marking station including YVO4 or Pulsed fiber laser, all required OSHA guarding, roomy work area, and color monitor interface.

Station includes:
- Laser Source: 15W, 20W YVO4 or 20W, 30W Pulsed Fiber
- Laser Controls
- 15” (380mm) touchscreen PC preloaded with Windows laser software
- Class I floor style enclosure (Dimensions available upon request)
- All required cables

Laser Marking machine structure & enclosure including:
- Stand-alone machine base & enclosure
- Marker head assembly with Z axis manual height adjustment
- Class 1 laser enclosure with easy open front door with integrated cycle interrupt safety switch Front of enclosure to have small laser safety glass window
- T-Slot work table

- 4” diameter marking window (pending lens selection)
- Exterior swing mount for 15” flat screen Keyboard & mouse tray
- Operator E-stop on front of machine
- Exterior mounted main power switch
- Work light
Pro-Mark Laser

Production laser marking stations with cycle time saving features including: automated turntables, automated doors, integrated mark verification, lighted work areas, gang marking capabilities. Available with either 5W, 10W, and 20W YV04 or 20W and 30W Pulsed Fiber Laser Systems.

Laser Marking machine structure & enclosure including:
- Stand-alone machine base & enclosure
- Integrated PC controller with 15” (380 mm monitor, keyboard, mouse & laser software preloaded
- Marker head assembly with Z axis manual height adjustment
- 8” x 8” (200 x 200 mm) work table with space for 14” x 14” (355 x 355 mm) parts
- Fixture plate with ¼”-20 hole pattern for easy part fixturing
- Operator E-stop on front of machine
- Exterior mounted main power switch
- Work light
- All components fully integrated and tested

Power Supply Unit:
- 400 watt total power consumption, air cooled
- CDRH Class I level of manufacture
- Input power: 100-240VAC, 5A 50/60 Hz

CMT Custom Marking Software featuring:
- Windows based software with extremely easy operator interface
- Including drag and drop features for text, graphics, barcodes, circles and lines
- A Red diode tracing feature which displays an outline box for graphics and true trace for text enabling precise marking legend placement onto part prior to actually marking the part
- The ability to save part files complete with all marking parameters
- Marks any true-type font
- Full serialization, includes placeholders and fixed data prefix/suffix. Standard for all text and barcode / data matrix objects
- UID compliant
Custom Solutions

Columbia provides complete custom laser marking solutions

- Choice of laser source
- Custom designed enclosure
- Safety guarding, shielding and all OSHA requirements
- Feeding systems, pick and place devices
- Part rotators and fixturing
- Integrated camera mark verification (2D marking)
- Custom HMI and PLC, build to customer specifications

Each custom solution includes a 3D approval process. In addition, all systems go through rigorous run off and test.

From Design To Build
Options

Available options include part touch-off auto-start, stands, pedestals, machine bases, vises and custom part fixtures. CMT offers custom marking solutions to include part handling and vision systems. Each of these systems is custom designed to meet application requirements.

Bench Top Stands:
- Dual or Single Post
- Manual or automatic Z-axis
- Large T-Slot mounting table
- Completely installed with CMT marking system
- Optional bracket for camera and accessories

Heavy Duty floor style Machine Base:
- All steel construction
- Completely assembled with CMT marking system
- Palm buttons and controls mounted to machine base
- Painted machine enamel CMT blue

Custom fixturing available upon request

Floor mounted telescoping Pedestal:
- Designed for integration into automated production
- Adjustable stops
- Height of marking stylus 3’ to 5’
- Includes tool to part locator

Custom Designs:
- Specially designed per application
- Includes customer specifications: electronics, safety features, part placement
- Complete turnkey station for marking and more
- 3D approval drawings
Part locating fixtures provide exact positioning to assure mark is placed on the proper place on the work piece. CMT provides standard and custom fixturing.

**Adjustable Vise with Master Fixture Plate**

To easily position parts on standard CMT benchtop frames.

Dimensions:
- 4” (100mm) wide opening
- 4” (100mm) across jaws
- 1 9/16” (40mm) depth

Also included (4) t-slot feet and mounting bolts

*Part Number: PRGVISE*

**Adjustable Tag Fixture Plate**

To provide adjustable fixture for a wide range of tags on standard CMT benchtop frames.

Tag Dimensions:
- 2” - 5” (50mm – 125mm)
- 1” – 4” (25mm – 100mm)

Also included
- (2) t-slot feet and mounting bolts

*Part Number: PLFAE3525*

**Custom Fixtures**

Custom designed and manufactured to meet application parameters.

- Integrated Cameras
- Multi-part designs
- Turn tables with integrated stations for marking and other operations
- Linear tables
- Part handling including conveyor systems and part orientation

Custom designs provided with 3D modeling for the design approval process.
CMT’s patented high resolution marking process to apply 2D/UID machine readable codes to a variety of materials. This process scribes a matrix of small square cells into the material. The mark provides the best direct part reading with a vision system as the cells are filled in similar to a laser mark but much deeper and often with better contrast.

The Square-Dot® process may be implemented with any of CMT’S I-Mark Scribe systems, these include I-Series air Scribe & the C-Series electric or air scribe.

The Square-Dot® patented process uses a diamond tip to draw squares on material to create a machine readable 2D/UID code. This technique creates both a depressed square and a raised ridge as shown below. The “filled cell” reflections create a more defined matrix as shown above, and therefore, offers better readability.

“successfully read 10 out of 10 attempts on a rough aluminum casting with the hand-held reader.” Per vision system manufacturer test.
Combining the Slim head design of the C series with the I-Mark Pro software which integrates the **marking and reading functions into one streamline interface**. Also includes a historical database of all marked 2D code verifications.

**Complete Marking Station includes:**
- Selection of marking methods: Dot-Peen or Scribe, Air or Electric
- Slim head design to allow for part marking and reading to occur in one station, without movement of the part
- Cognex camera
- Marking and camera controls integrated seamlessly into one station
- Easy to use graphical user interface
- Historical database of all marked parts
- Custom part fixturing and handling
- All required Safety features

CMT products feature DATA MATRIX™ 2D Code marking capability – and meet all Department of Defense UID requirements. In addition, I-Mark incorporates easy to use templates for the most common UID constructs used.

CMT can offer Mark & Read stations for either Dot-Peen 2D code or Square-Dot®

Square-Dot® is the perfect solution for Direct Part Marking (DPM) of cast surfaces.
Wide Range of Products:
- Programmable Systems
- Dot-Peen & Scribe
- Laser
- Air Impact Markers
- Numbering Heads
- Roll Marking Machines
- Air & Hydraulic Presses
- Hot Stamping Machines
- Stamping Dies & Retainers
- Standard Type
- Hand Tools
- Custom Marking Dies
- Embossing Dies

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