ADDITIVE SOLUTIONS

3D Print Your Way Everyday.

www.e-ci.com
SAAM (Small Area Additive Manufacturing) can be used with any compatible 3D printing filament. The patented CI Automate system enables automatic part ejection for maximum productivity. SAAM’s all-metal construction ensures quality results years longer than the competition.
Lean manufacturing requires flexible tools to enable improved efficiency, effectiveness, and profitability. Use SAAM to eliminate waste in your value stream today.

**Custom Tooling**

Drastically reduce cost and lead time on custom fixtures for any application. From inspection to machining to welding, SAAM can create the fixture that you need today.

**Rapid Fixtures**

SAAM enables the fabrication of robust, end-use parts. Create complex geometries for custom manifolds, brackets, housings, frames, and more.

**Rapid Prototyping**

Skip the job shop for your next prototype. At the click of a button, use SAAM to create functional prototypes. Test your parts the same day you design them.

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**Continuous Operation**

3D print unattended 24/7 with our patented Automated Ejection System

**FFF 3D Printing**

Build parts layer-by-layer to form virtually any shape imaginable

**Performance Materials**

Use your own materials to get the results you need

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MAAM (Medium Area Additive Manufacturing) is an industrial sized additive machine built for production manufacturing with both filament and pellet fed extruders. A rigid welded frame, CNC controls, and the latest extruder technology are combined in this machine to print parts accurately and consistently at speeds that are unmatched in the 3D printer market. The optional dual filament extruders or filament and pellet hybrid extrusion makes the MAAM uniquely set up for the toughest and most complex print jobs. Its open source material solution, along with its temperature capabilities in the chamber, print bed and nozzles allow for 3D printing the industry’s most highly engineered thermoplastics.
**Control**
- Windows 10 PC on 24" LCD Monitor with WiFi & Ethernet Connectivity
- Yaskawa Sigma 7 CNC Motion Control on a Cartesian System
- Compatible with any slicing software

**Build Chamber**
- Print parts up to 1 cubic meter with the accuracy and precision of a small scale printer
- Insulated and heated chamber allows for printing highly engineered, high temperature thermoplastics

**Material**
- Open source material solution
- Onboard environmentally controlled filament cabinet with space for multiple spools
- Dual material print capabilities allow for printing with soluble support material

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**MAAM SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Build Envelope</th>
<th>1050mm x 1015mm x 1000mm (41.3” x 40.0” x 39.4&quot;)</th>
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<tbody>
<tr>
<td>Maximum Bed Temperature</td>
<td>150°C (302°F)</td>
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<tr>
<td>Maximum Chamber Temperature</td>
<td>90°C (194°F)</td>
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<tr>
<td>Maximum Travel Speed</td>
<td>500 mm/sec</td>
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<tr>
<td>Print Bed</td>
<td>Aluminum Fabricated Vacuum Table Print Bed with 4 Point Leveling</td>
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<tr>
<td>Printer Dimensions</td>
<td>2.7 m x 1.7 m x 2.2 m (106” x 66” x 85&quot;)</td>
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<tr>
<td>Printer Weight</td>
<td>3000 lbs (1361 kg)</td>
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<tr>
<td>Power</td>
<td>208 - 240 Volts, Single Phase 60Hz, 60 Amp Circuit</td>
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</table>

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>MAAM 120</td>
<td>Dual Filament Extruders</td>
</tr>
<tr>
<td>MAAM 101</td>
<td>Single Pellet Extruder</td>
</tr>
<tr>
<td>MAAM 111</td>
<td>Single Filament and Single Pellet Extruders</td>
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**EXTRUDER SPECIFICATIONS**

<table>
<thead>
<tr>
<th>FILAMENT</th>
<th>PELLET</th>
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<tbody>
<tr>
<td>Material Feedstock</td>
<td>2.85 - 3.00 mm Filament</td>
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<tr>
<td>Maximum Extrusion Rate</td>
<td>1.0 kg/hr (2.2 lb/hr)</td>
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<tr>
<td>Maximum Resolution</td>
<td>0.20 mm (0.008”)</td>
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<tr>
<td>Maximum Nozzle Temperature</td>
<td>450°C (842°F)</td>
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<tr>
<td>Nozzle Diameters</td>
<td>0.6mm – 2.4mm</td>
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<tr>
<td>Nozzle Material</td>
<td>Copper or Hardened Steel</td>
</tr>
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</table>
BAAM (Big Area Additive Manufacturing) is for manufacturing durable tooling, prototype or production parts from fiber-reinforced plastic. BAAM makes large objects out of readily available, commodity priced, extrusion grade thermoplastics. BAAM can print parts the size of a car at a rate of up to 80 pounds per hour. CI is transforming the way the world thinks about additive manufacturing.
Construction

- Stress relieved Steel plate fabricated frame
- Aluminum honeycomb gantry
- Linear motor drive system
- Absolute positioning accuracy: +/- 0.005"

Extruder

- Feedrate: 80 lbs/hour
- Dynamic Flow Control
- Unique Automatic Tamping
- Proprietary Extruder for 3D Printing
- Extrusion Die (Nozzle) Diameters: 0.200", 0.300" and 0.400"

Materials

CINCINNATI and our partners have used dozens of materials including: ABS, PPS, PC, PLA, TPU, and PEI. By adding carbon fiber, glass fiber, or organic fiber strength and thermal stability is improved.

Users are welcome to develop their own proprietary materials and parameters.

Control

- Microsoft Windows® Embedded OS
- 22" LCD color touch screen
- Network interface/USB Outlet

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>MACHINE DIMENSIONS</th>
<th>603</th>
<th>606</th>
<th>608</th>
<th>806</th>
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<tbody>
<tr>
<td>Length (A)</td>
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<td>308&quot;</td>
<td>308&quot;</td>
<td>427&quot;</td>
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<tr>
<td>Width (B)</td>
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<td>Height (C)</td>
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<td>171&quot;</td>
<td>198&quot;</td>
<td>172&quot;</td>
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<tr>
<td>Weight</td>
<td>32,000 lbs</td>
<td>32,000 lbs</td>
<td>32,000 lbs</td>
<td>40,000 lbs</td>
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<tr>
<td>Power</td>
<td>460V/ 3 Phase/ 60 Hz</td>
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**WORKPIECE DIMENSIONS**

| X-Axis             | 140"| 140"| 140"| 240"|
| Y-Axis             | 65" | 65" | 65" | 90" |
| Z+W Axis           | 36" | 72" | 98" | 72" |

All Dimensions are preliminary and are subject to change.
CI is a U.S. based, build-to-order machine tool manufacturer and has shipped more than 50,000 machines in 120 years of operation. The campus has a 500,000-square-foot plant and technical center on an 200+ acre site near Cincinnati, Ohio. Current products include: Laser Cutting Systems, Automation, Plasma Tables, Press Brakes, Shears, Powdered Metal Compacting Presses, Software, BAAM (Big Area Additive Manufacturing), MAAM (Medium Area Additive Manufacturing) and SAAM (Small Area Additive Manufacturing).