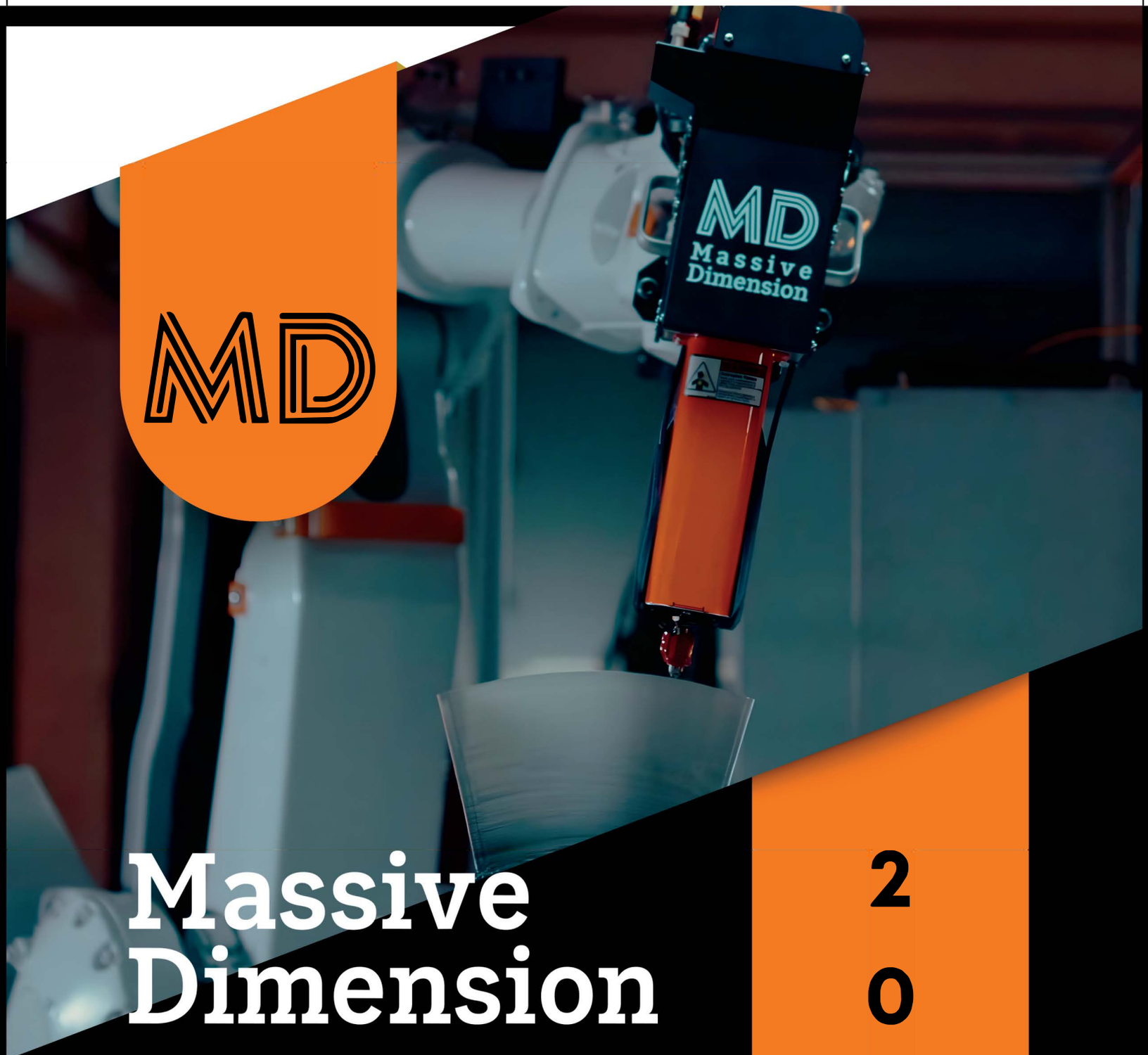


MD

Massive Dimension PRODUCT CATALOG

2023

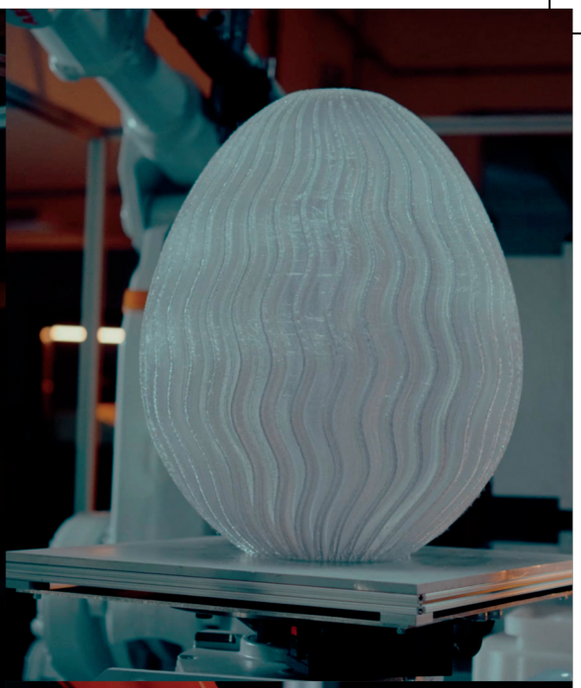
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The Future is Here and it's Massive

Business-boosting, knowledge-advancing innovations are the cornerstone of any successful organization. Whether it's in manufacturing or research and development, look no further than Massive Dimension. Our relentless, inventive spirit drives us to push the limits of what's possible in 3D printing.

Our turn-key robotic 3D printing cells, extruders, and components are built to optimize your output and workflows while ensuring peak performance and ease of use. When you use Massive Dimension's technology, you're not just investing in equipment - you're investing in the future of your business. Our robotic cells and extruders are capable of building anything you can imagine, from small prototypes to large-scale production runs. Whether you're just starting out or looking to scale up your operations, Massive Dimension has you covered.

We believe the future belongs to those who innovate. We are confident that when you put Massive Dimension's cutting-edge products to work, they'll build everything, including your business.

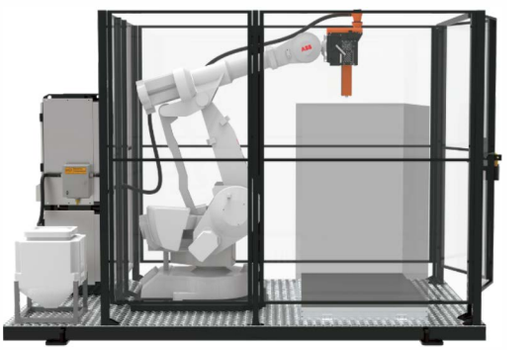
TURN-KEY ROBOTIC 3D PRINTING CELLS

Massive Dimension manufactures turn-key robotic 3D printing cells. We offer these printing cells in standard build configurations and customized build configurations to meet a customer's specific application. As official Value Providers of ABB Robotics, we have gained the knowledge and experience to combine our extrusion equipment with ABB's robots. Our robotic printing cells are ideal for various industries, including aerospace, automotive, manufacturing, and R&D. With our advanced technology, you can produce complex parts above and beyond traditional printing methods. If you're looking for a complete robotic printing solution, look no further, you have found the right place.



MDAC50

Extruder: MDPE50
Output: 50 lbs/hour
Robot: ABB 6700
Build Volume:
72" x 60" x 52"



MDAC10

Extruder: MDPE10
Output: 10 lbs/hour
Robot: ABB 4400
Build Volume:
36" x 60" x 52"



MDAC2

Extruder: MDPE2
Output: 2 lbs/hour
Robot: ABB 2600
Build Volume:
26" x 52" x 52"

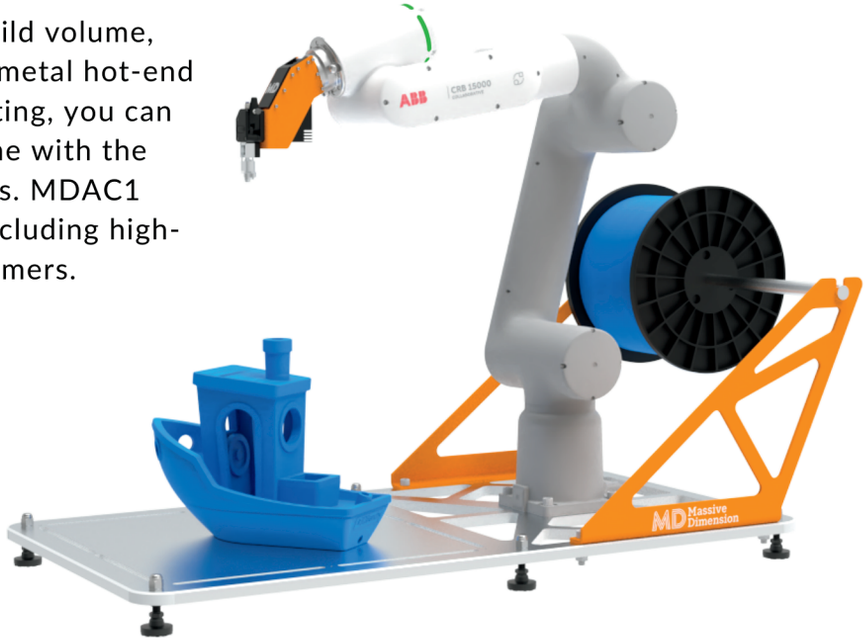
MDAC1

ROBOTIC 3D PRINTING CELL

SIX-AXIS PRINTING, SIMPLIFIED

The MDAC1 robotic 3D printing cell is designed with ease of use in mind. It removes barriers to entry for users looking to move into the future of fused deposition modeling with six-axis motion. In a compact, lightweight package, the printing cell is easy to transport and deploy and runs on commonly available electrical supplies. RobotStudio by ABB printing software enables users to go from CAD model to toolpath in thirty minutes or less.

With a 21.5" x 21.5" x 20" build volume, heated build surface, and all-metal hot-end with a 500°C temperature rating, you can print anything you can imagine with the entire range of thermoplastics. MDAC1 uses any 1.75mm filament, including high-performance engineered polymers.



This is the perfect solution for anyone who wants to take their 3D printing game to a higher dimension. Whether you're a beginner or an expert, at a university or in production mode, MDAC1 is easy to use and offers unparalleled printing capabilities.

ROBOT

ABB GoFa CRB 15000

FILAMENT SIZE

1.75mm

NOZZLE SIZE

0.4mm to 1.2mm

BUILD VOLUME

21.5" x 21.5" x 20"

MDAC1 INCLUDES:

- ABB GoFa CRB 15000
- MD Process Cabinet
- Filament Extruder
- All-Metal Hot End
- Heated Build Surface
- 1 kg PLA Filament

EXTRUDER LINEUP

With over a decade of polymer processing experience, we have built a range of extruders that will withstand and perform to your highest expectations. Our pellet extruders offer increased output for larger layer heights and widths, dramatically reducing overall print time on larger parts. MD extruders are compatible with a huge range of thermoplastic pellets, which offer significant economical advantages over utilizing filament feedstock. They are capable of handling various thermoplastics, including PLA, PP, PC, ABS, ASA, TPE, TPU, EVA, Nylon, PEEK, and Ultem. Additionally, they can accommodate these thermoplastics with or without structural fillers such as carbon fiber strands, glass fiber strands, or other fillers.



MDPE50

Nozzle Range: 1.5 to 12 mm
Max Output: 50 lbs/hour
Weight: 130 lbs (59 kg)



MDPE10

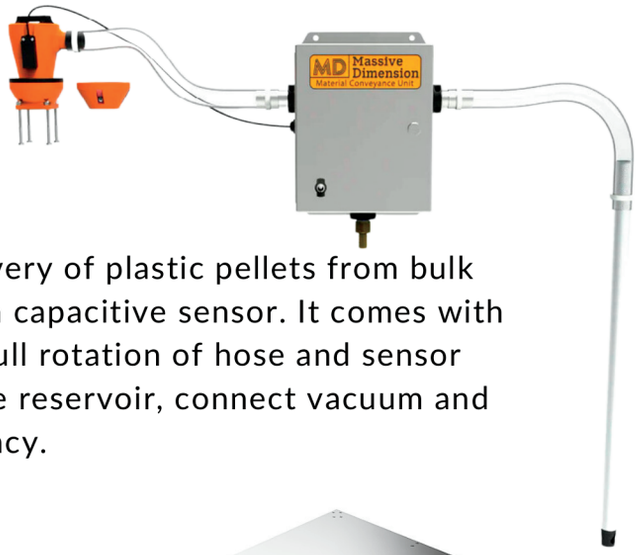
Nozzle Range: 0.8 to 6 mm
Max Output: 10 lbs/hour
Weight: 30 lbs (14 kg)



MDPH2

Nozzle Range: 0.4 to 4 mm
Max Output: 2 lbs/hour
Weight: 18 lbs (8.4 kg)

MATERIAL HANDLING



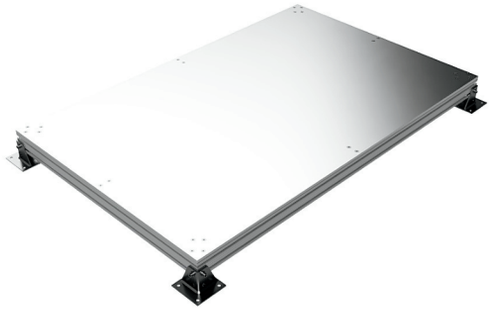
MDMCU

Material Conveyance Unit

The Material Conveyance Unit automates the delivery of plastic pellets from bulk storage to the extruder's material reservoir using a capacitive sensor. It comes with bases for the MDPH2 and MDPE10, allowing for full rotation of hose and sensor attachment points as the printer moves. Mount the reservoir, connect vacuum and airlines, plug it in, and print with increased efficiency.

Build Surfaces





MD Modular Build Surface

660mm x 660mm

This advanced heated build plate system is designed for large format printing, featuring a modular design that enables customization and expansion. The system includes four adjustable height leveling feet, strategically recessed in the corners of the bed for independent leveling. The bed itself measures 660mm (26in) by 660mm (26in), and additional bed sections can be easily connected to create an even larger printing surface.

MD Build Surface

1000mm x 1600mm

Designed from a heavy 12.5mm thick aluminum plate that is bead blasted for maximum print adhesion. This build surface measures over 1000mm (40in) wide and 1600mm (65in) long. A built-in heater keeps the surface at the correct temperature for the duration of printing (max temperature 130°C). Adjustable floor mounting flanges allow the plate to be leveled.

MATERIALS

The Massive Dimension Extruders (MDE) is a specialized 3D printing extruder designed to work with a wide range of thermoplastic materials. It is capable of handling various thermoplastics, including PLA, PP, PC, ABS, ASA, TPE, TPU, EVA, Nylon, PEEK, and Ultem. Additionally, it can accommodate these thermoplastics with or without structural fillers such as carbon fiber strands, glass fiber strands, or other fillers.

PLA (*Polylactic Acid)*
PLA is a biodegradable thermoplastic derived from renewable sources such as cornstarch or sugarcane.

PP (*Polypropylene)*
PP is a versatile thermoplastic known for its excellent chemical resistance and low density.

PC (*Polycarbonate)*
PC is a strong, impact-resistant thermoplastic with good heat resistance.

ABS (*Acrylonitrile Butadiene Styrene)*
ABS is a popular thermoplastic known for its toughness, impact resistance, and versatility.

ASA *(Acrylonitrile Styrene Acrylate)*
ASA is a weather-resistant thermoplastic with properties similar to ABS.

TPE *(Thermoplastic Elastomer)*
TPE is a flexible and rubber-like thermoplastic material.

TPU *(Thermoplastic Polyurethane)*
TPU is a highly elastic and durable thermoplastic material.

EVA *(Ethylene Vinyl Acetate)*
EVA is a soft, rubbery thermoplastic material commonly used in applications requiring flexibility and impact resistance.

Nylon
Nylon is a strong, durable thermoplastic known for its high tensile strength and excellent wear resistance.

PEEK *(Polyether Ether Ketone)*
PEEK is a high-performance thermoplastic with exceptional mechanical and chemical resistance properties.

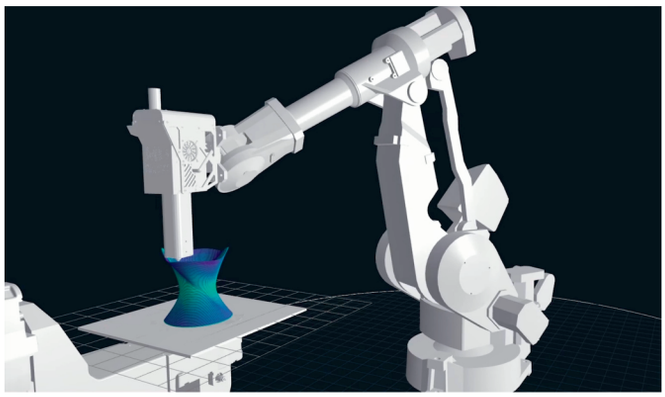
Ultem *(PEI - Polyetherimide)*
Ultem is a high-temperature thermoplastic known for its excellent mechanical and thermal properties.

Furthermore, the MDE can also accommodate structural fillers in these thermoplastics, such as carbon fiber strands, glass fiber strands, or other fillers. These fillers enhance the mechanical properties and strength of the printed parts, making them suitable for applications requiring increased rigidity or specific characteristics. Overall, the MDE provides a versatile solution for large-scale 3D printing with various thermoplastic materials and the option to incorporate structural fillers to meet specific application requirements.

SOFTWARE

Advanced Slicing Software

Using third-party advanced slicing software allows our robotic 3D printing cells to reach their full potential. You can deposit material at any angle, defined by any desired slicing plane. This strategy can often reduce the need for excessive internal or external support material. You can print complex features on top of existing surfaces and using radial printing you can print features such as propeller blades, local reinforcements, or fixtures on cylindrical substrates.



Offline Programming and Simulation Tools

By using offline programming and simulation tools, you can bring your robotic cell to life virtually even before it's operational. Using these tools, programmed robot motion sequences can be observed in real-time, analyzed, and optimized to reduce cycle times. These tools include features such as collision detection and reachability checks to ensure that robot programs and work cell layouts can be implemented successfully. Virtual simulation provides a cost-effective and efficient way to plan your print with maximum reliability, minimizing production downtimes.

TRAINING AND SERVICE

A crucial aspect of the concept of the turn-key additive manufacturing cell is education. Massive Dimension offers training services to get you acquainted with your equipment, ensuring your operators are well-equipped to begin producing parts without significant downtime or undue print failures. These training services include an overview course on all aspects of the printing process, including slicer software, polymer extrusion, RAPID programming, extruder maintenance, and more!

OUR COMPANY

Massive Dimension was founded to advance the capabilities and increase the adoption of additive manufacturing in research, development, and production applications.

In 2011, our company was born in the heart of Vermont's Green Mountains and has since garnered a decade of expertise working with plastic polymers. We have the most extensive number of installations on XYZ gantry systems and various robot brands in operation today.

Our product line continues to expand, covering all aspects of plastic conversion into new, useful prints from pre-processing to final print. We offer a comprehensive array of products, including material conveyance units, storage hoppers, extruders, heated build surfaces, a wide range of nozzles, and other add-ons that streamline the printing process.

The foundation of our success lies in our expertise in additive manufacturing. Our team continually explores new software and slicing options, develops new control programs, and collaborates with leading developers to ensure a seamless transition to a finished printed product. We utilize additive manufacturing daily to produce new products and prototypes, allowing us to anticipate and address any potential issues and provide customized printing solutions for each client's application.



Massive Dimension

ROBOTIC LARGE FORMAT ADDITIVE MANUFACTURING PLATFORM

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