Desktop Metal

SUMMER 2024

Easy-to-use Additive Manufacturing 2.0 solutions
for industrial and healthcare production

#TEAMDM

In 2015, Desktop Metal was founded with an audacious goal that had long eluded the 3D printing industry: mass production

We call this next era of digital production, and all the benefits that come with it, Additive Manufacturing 2.0

In 2021, our team was incredibly excited to welcome several new technologies and brands into Team DM, so that we could drive this new era of affordability, quality, and ease of use across even more materials than metal. Today, we're also launching polymer, sand, and wood into the AM 2.0 future.

Our strategy for delivering on this future has three legs.

The first of those is **production-capable 3D printing technologies** that can deliver a combination of speed, tolerances, surface finish, and material properties to truly qualify as high-volume production tools at a cost that competes with conventional manufacturing.

Binder jetting (BJT) and digital light processing (DLP) are two technologies we view as critical in this endeavor. Our first two years of selling and installing Shop Systems have been a big success — the Shop is now the No. 1 selling metal binder jet printer in the world, with customers delighted by the affordability, quality, and ease of use of this turnkey system.

Secondly, we're pairing these production technologies with exceptional and **durable materials for end-use parts.** As leaders in metal 3D printing, we're delivering high-quality standard and premium metals, from stainless and tool steels to precious metals and exotic alloys.

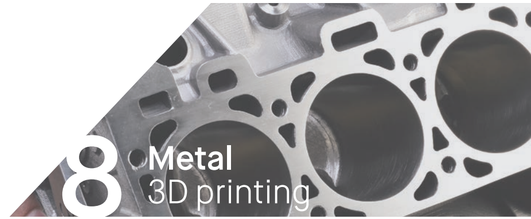
At the same time, our new portfolio of exclusive photopolymers is unmatched, and you can easily see new value being unleashed when you pair our ETEC Xtreme 8K, the world's largest DLP system, with our all-new DuraChain™ category of resilient and durable photopolymers. Meanwhile, our new biocompatible Flexcera™ resins, printable on the Einstein™ desktop DLP printer, are already being used for high-volume production of dentures with industry-leading properties.

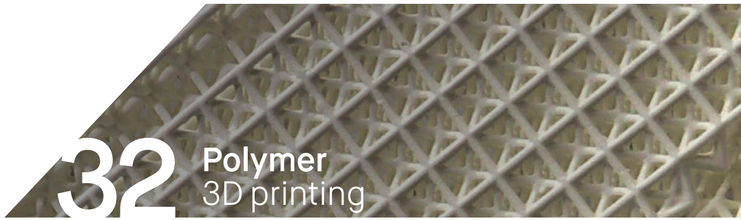
Finally, we're pairing our printers and materials with **high-volume applications** that can leverage the most benefit from 3D printing at scale, from valves and pumps to dentures and crowns.

At Team DM, we believe we have the most ambitious goals and R&D team in additive manufacturing, and we're determined to deliver on this AM 2.0 future with the best software and customer service in the industry.

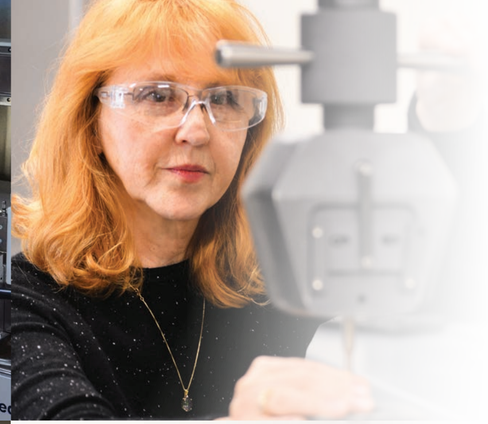
Table of Contents

About Team DM	4
Production Partnership Model	6
Metal 3D Printing	8
PureSinter Furnace	20
Live Suite Software	22
Ceramic 3D Printing	28
Digital Sheet Forming	30
Polymer 3D Printing	32
Healthcare 3D Printing	38
Bio 3D Printing	44
Sand 3D Printing	46
Materials List	52











Team DM Aims Higher

World-leading experts passionate about delivering the benefits of Additive Manufacturing 2.0

At Desktop Metal, our portfolio of Team DM brands brings together the brightest minds in additive manufacturing to drive the future of AM 2.0, or production-volume 3D printing.

Achieving this goal requires delivering speeds and costs that compete with conventional manufacturing, as well as durable end-use materials that can be used for value-added, high-throughput applications. We also know that customers need unparalleled reliability and uptime in 3D printing in order to make the jump to real AM 2.0 production.

Our team is on a mission because we're passionate that AM 2.0 technologies can deliver more advanced parts and products that can truly change the world at high, meaningful volumes. Team DM is trying to lift AM — and manufacturing — higher.

Follow **#TeamDM** on LinkedIn to learn more.

AM2.Production Partnership

Solutions for complex problems

Every manufacturer has challenges. Whether it's getting new products to market faster on budget, delivering on tougher new performance requirements, improving your sustainability footprint, or delivering on once-impossible advancements.

Desktop Metal's AM2.Pro team can help you solve it. We're home to the world's leading team of additive manufacturing experts in metals, ceramics, and polymers, including elastomers and foams.

Our team has been successfully using binder jetting and digital light processing technologies to help solve complex challenges for global companies for decades now. That includes automakers, medical device, industrial, and consumer goods companies, as well as government and defense agencies.

Our process includes a complete discovery and intake of your challenges and an analysis of your requirements for design and geometry, material properties, accuracy, and functional performance. We lead a detailed discussion of your business challenges, such as time to market, supply chain constraints, and part cost requirements.

We will collaborate with you to determine if one of our technologies can deliver a solution for your production challenges.

Our Partnership Process

Adopting cutting-edge technology can feel risky compared to just doing it the same old way. Our low-risk production adoption process helps to ensure your success. We help you determine if binder jetting is right for your application — from both a technical and business perspective — and we partner with you for the whole journey.

1 BENCHMARK & INITIAL QUALIFICATION

Part evaluation for binder jetting or DLP

- Design & Geometry
- Material Properties
- Accuracy
- Functionality

2 STATEMENT OF WORK

Process optimization for parts

Our expert team optimizes our process for your part requirements, providing key details on timing, materials, recipe settings, etc. with complete testing.

3 VALIDATE TECHNICAL & BUSINESS CASE

Comprehensive executive report

A complete executive report and timeline is provided with details needed to validate both the technical and business case to proceed.

4 START OF PRODUCTION & DELIVERY PROCESS

Production option selected, begins

- We can produce your parts long-term
- Or, proceed with purchase of printing systems and customized work cells. We can print your parts until installation.

5 WHITE-GLOVE WORK CELL DELIVERY

Installation of Complete System

In line with final agreement, we install complete systems and execute first test runs. After acceptance is complete, we continue to support your operations and success.

The strongest metal backbone in AM

Whether you want to print metal safely in the office or cost-competitively on the production floor, you won't find better options or experts anywhere, period

Launched in 2015 as a metal 3D printing company, Desktop Metal now offers a variety of trusted metal 3D printers to meet most every need, from easy-to-use bound metal printers such as the Studio System to high-throughput binder jetting solutions such as the X-Series or Production System P-50, the fastest way to 3D print metal parts at scale.

Binder jetting is one of the seven methods of additive manufacturing recognized by ASTM. Widely regarded as one of the fastest and most flexible 3D printing methods, binder jetting rapidly processes each layer by passing a gantry of printheads over a print bed to deposit liquid binding agent that bonds powder particles together. Because binder doesn't melt metal together during printing, it's also extremely flexible in the types of powders it can print — from metals to ceramics — delivering a wide range of other benefits compared to other additive and subtractive technologies.

Today, Desktop Metal has the most experienced team of metal binder jetting and sintering experts in the world, delivering the best and broadest range of scalable printing systems.

- Turnkey metal printers for easy, plug-and-play adoption
- Production systems for high-volume, cost-competitive manufacturing
- Binder jetting for specialty materials
- Metal 3D printing customer success stories

Metal Success Stories

Agile manufacturing solutions with metal 3D printing

From big-name brands to local machine shops, manufacturers around the world use our portfolio of 3D printers to produce parts and products on demand, circumventing supply chain challenges and offering advanced, complex parts with ease. From pre-production parts such as tooling and prototypes to batch and serial production, Desktop Metal is the trusted leader in metal 3D printing from the office to the factory floor.

Lab-safe metal 3D printing as a resource for students

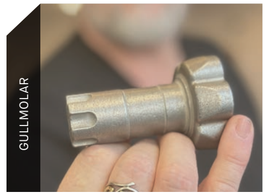
No powder. No lasers. No special facility or PPE. The **Studio System** fit the bill for a metal 3D printer at the University of North Carolina at Charlotte. It helped the school's 49er Rocketry Team optimize a bracket on the rocker that took second place in a NASA competition.

Moving earth with binder jet metal 3D printing

With in-house 3D printing capabilities on the **Shop System**, Mobile Track Solutions was able to quickly iterate and deploy an improved seat latch to replace a stock cast iron part experiencing stress cracks. Machining the design would cost more and and be more design restricted.

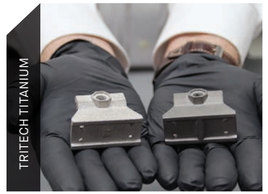
Capitalizing on opportunity with 3D metal

Investing in the **X-Series** binder jetting platform allows DSB Technologies to scale metal 3D printing applications from development and optimization to serial production. Three machine sizes support customer projects in a range of development stages and materials.



Improving food equipment with metal 3D printing

Curio commercial fish processing systems are transformed with over 100 production 316L stainless steel parts 3D printed with bound metal deposition from the **Studio System**. Office-friendly metal 3D printing is an affordable, easy-to-use solution that reduced time to market by an entire year.



Binder jetting with reactive titanium powder

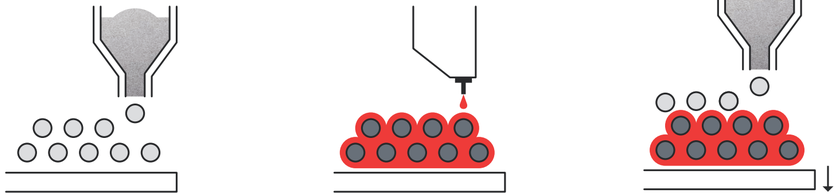
TriTech Titanium operates the first production titanium binder jet 3D printer. Building parts layer-by-layer in Ti64 powder on the **Production System P-1** delivers near net shape precision parts with a high strength-to-weight ratio, without the cost or lead time of traditional tooling.

Download the details

See our library of complete case studies with videos
TeamDM.com/MetalSuccess

Binder Jetting

- Digital File Prep
- Machine & Material Prep
- 3D Printing



Powder layer

The recoater applies the first thin layers of metal powder in the print area or job box.

Liquid binder

A gantry of inkjet industrial printheads selectively applies binder to the powder to bind particles together where desired. Different binders work with different materials to achieve desired results.

Lower & recoat

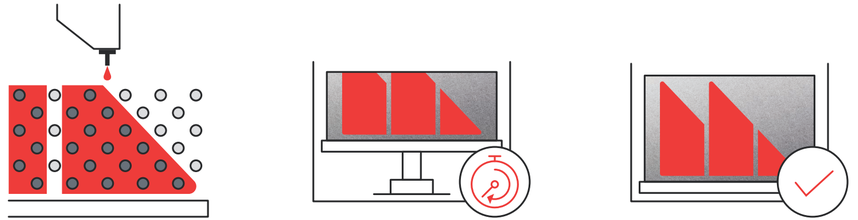
After each layer, the bed lowers for the next layer to be applied. Recoating is a critical step in binder jetting, as the consecutive powder layers must be precisely and compactly applied to deliver a high-quality precision part. Whether using coarse or fine particles, powder handling is a critical element of successful binder jetting.

Binder Jet Technology

Developed at MIT, commercialized by Desktop Metal and its Team DM brands, including ExOne. Fast and flexible, from materials to output types. Binder jetting is a method of 3D printing in which an industrial printhead quickly deposits a liquid bonding agent onto a thin layer of powdered particles, such as metals, foundry-grade silica, or ceramics. The process is repeated layer by layer using a map from a digital design file, until the object is complete.

Learn More!
Download the Ultimate Guide to Binder Jetting

TeamDM.com/BJTguide



Repeat steps

Once the next powder layer has been applied to the print area, the stage has been set for the next layer of binder to be selectively deposited. This recoating-and-binding sequence is repeated until the part is complete.

Fast layer speed

With a full sweep of printheads, a binder jet 3D printer can complete a full layer very quickly. This is one of the core benefits of binder jetting compared to other additive manufacturing methods.

Printing complete

Once the print job has finished, parts can be removed from the print area or job box. Depending on the material and binder used, additional curing and post-processing steps may be necessary. Metal parts typically require curing and sintering.

Next steps depend on application and specific materials. For metals

- Curing
- Depowder
- Debind & sinter

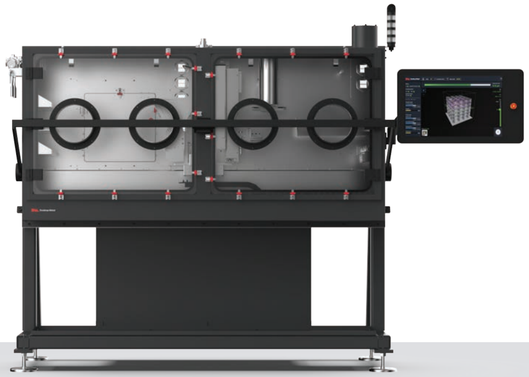
Production System™

P-1 | Research & development for scaling to production

Print > Crosslink > Depowder > Sinter > Recycle

Designed to bridge the gap between bench-top development and mass production, the Production System P-1 is an open platform binder jetting solution for process and materials development as well as serial production of small, complex parts.

The P-1 supports both non-reactive and reactive metal powders using the same Single Pass Jetting™ technology leveraged across the Production System family of products, combining mass production-level quality and consistency with enhanced process flexibility to support serial production or direct process transfers to the Production System P-50.



Key benefits

- Patent-pending Single Pass Jetting technology
- Constant wave spreading enhances print bed uniformity and density
- Patented anti-ballistics technology drives printhead longevity and part quality
- Inert build chamber provides reactive metal support and powder consistency
- Real-time optical bed inspection
- Open material platform

Print technology	Single Pass Jetting	**Max build rate**	1,350 cc/hr (82 in³/hr) at 65 µm layer thickness
Build envelope (L × W × H)	200 x 100 x 40 mm (7.9 x 3.9 x 1.6 in)	**Print resolution**	Native 1,200 dpi
Build volume	1L		

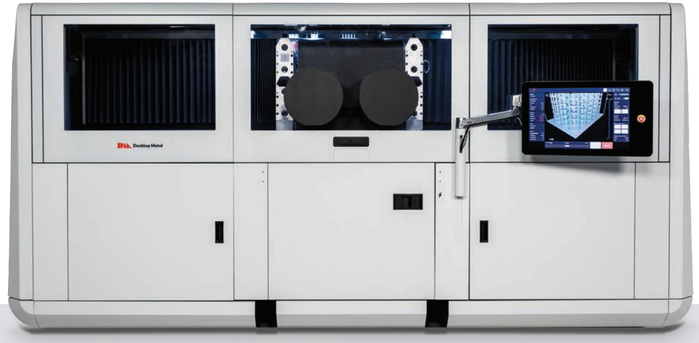
P-50 | High-speed metal 3D printing for mass production

Designed to be the fastest way to 3D print metal parts at scale, the Production System P-50 leverages Desktop Metal's patent-pending Single Pass Jetting™ (SPJ) technology and bi-directional printing to achieve speeds up to 100 times those of laser powder bed fusion technologies.*

The P-50 is an open material system that leverages low-cost MIM powders and produces parts in volumes and at costs competitive with conventional mass production techniques. Featuring a state-of-the-art print bar with native 1,200 dpi, an inert processing environment, and constant wave spreading for print bed uniformity, the P-50 offers the quality, reliability, and economics required for high-volume end-use applications.

Parking shift bracket

Material	17-4 PH	**Parts per build**	342
Cost per part	$4.71	**Throughput per year**	542,826



Print technology	Single Pass Jetting	**Max build rate**	12,000 cc/hr (732 in³/hr) at 65 µm layer thickness
Build envelope (L × W × H)	490 x 380 x 260 mm (19.2 x 15.0 x 10.2 in)	**Print resolution**	Native 1,200 dpi
Build volume	48L		

*Based on published speeds of single laser, mid-range laser powder bed fusion systems available as of June 2023 and using comparable materials and processing parameters as applicable.

See the full list of printable materials, p. 52

Production System™ Benefits

Excellent part quality

High-resolution 3D printing and a uniform print bed allow the Production System to produce dense, high-quality parts capable of performing in the most demanding applications.

High-resolution printing

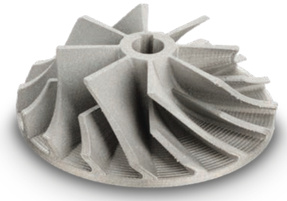
With a native resolution of 1,200x1,200 dpi and layer heights as small as 50 µm, the P-Series can 3D print parts with excellent surface finish and incredibly fine features.*

Uniform print bed

Proprietary constant wave spreading technology enhances density uniformity across the powder bed, delivering greater part consistency in each build and from build to build.

Fully dense parts

Produces end-use parts with densities up to or exceeding 99%, with properties similar to castings, suitable for demanding applications. No infill or solvent debinding step needed.



Best-in-class repeatability

The Production System offers robust repeatability through anti-ballistics technology, print bar redundancy, and live optical print bed inspection, so you can print with confidence.

Print reliability

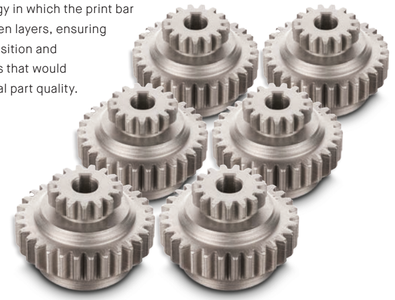
Patented anti-ballistics technology, engineered to reduce powder bed disturbance, reduces variability in the 3D printing process while increasing the longevity of the print bar.

Print bar redundancy

Full print bar redundancy is achieved using an anti-banding strategy in which the print bar is re-aligned between layers, ensuring reliable binder deposition and suppressing defects that would otherwise affect final part quality.

Real-time print bed inspection

An overhead camera monitors each layer using multi-angle lighting and imaging to detect print defects and nozzle performance during printing, facilitating part inspection and build audits critical to deploying AM in production environments.



Wide material compatibility

The Production System's inert environment, open material platform, and selection of Desktop Metal-engineered binders enable 3D printing with a wide variety of metals, including everything from stainless steels to reactive metals and high-performance alloys.

Inert, closed-powder environment

A closed-powder environment, inerted to < 2% oxygen, safely supports a range of non-reactive and reactive metals. Isolation from ambient conditions produces powder with consistent characteristics and quality, facilitating part uniformity and repeatability.

Open material platform

The P-50 features an open material platform that allows customers to source the same metal powders used in the MIM industry or custom alloys from their supplier of choice, keeping costs low and ensuring compatibility with bulk sintering processes.

Desktop Metal-engineered binders

Our proprietary binders are formulated to support an array of alloys and maximize success through every stage of the binder jetting process, ensuring jettability during printing, green part strength during depowdering, and clean burn off prior to sintering.

Competitive cost per part

Within the Production Series, the P-50 delivers part costs competitive with traditional manufacturing technologies through the use of low-cost metal injection molding (MIM) powders, high-speed printing, and the ability to densely nest many parts in a single build.

Low cost MIM powders

Both the P-1 and P-50 use low-cost MIM industry powders, a trusted powder supply chain that can scale to volume production. Up to 99% or more of the powder recovered during the process can also be recycled, driving further cost efficiencies while reducing waste.

High-speed printing

Up to tens of thousands of parts per day† can be 3D printed with the P-50's SPJ technology, delivering print speeds of up to 100x those of laser powder bed fusion systems.‡

Dense 3D nesting

By densely nesting parts in the build box, customers can efficiently deliver high-throughput builds. What's more, tooling-free binder jetting means parts are supported by loose powder and don't require welding to a build plate — or removal.

† Management estimates as of June 2023.
‡ Based on published speeds of single-laser, mid-range laser powder bed fusion systems as of June 2023.

Shop System™

Entry-level metal 3D printing using binder jetting

Print > Crosslink > Depowder > Sinter > Recycle

We've taken the most promising 3D printing technology for speed and mass production and packaged it in an easy-to-use package. The Shop System is an ideal solution for anybody who wants to produce metal products quickly with an outstanding surface finish and resolution at scale, such as MIM houses and service bureaus.

With production rates up to hundreds of green parts per day, the Shop System produces parts up to 10x faster than laser powder bed fusion. Employing a ~1 pL droplet size, the Shop System achieves superior surface finish, bleed control, and rich feature detail at high speed. The Shop System is your doorway into the future of metal production.

Key benefits

- Turnkey system, from printing through sintering and powder recycling
- High-resolution printhead with 1600 dpi and 5x print redundancy
- Configurable build envelope
- Five quality-controlled, turnkey powder solutions
- Flexible production, from low-volume batches through mid-volume production
- Pro package available to enable cost reductions and material flexibility, and advanced features such as custom printing and spreading parameters

Print technology	Binder Jetting
Build envelope (L × W × H)	
4L	350 x 222 x 50 mm (13.8 × 8.7 × 2.0 in)
8L	350 x 222 x 100 mm (13.8 × 8.7 × 3.9 in)
12L	350 x 222 x 150 mm (13.8 × 8.7 × 5.9 in)
16L	350 x 222 x 200 mm (13.8 × 8.7 × 7.9 in)
Max build rate	800 cc/hr at 75 µm layer thickness
Print resolution	Native 1,600 dpi

Packages

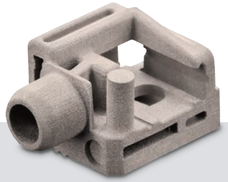
	Shop System™	Shop System™ Pro
Turnkey hardware, software, and materials	x	x
DM binder	Required	Required
Use of DM-engineered powders	Required	Recommended*
Discounted DM binder and powders		x
Custom printing and spreading parameters		x
DM Furnace custom sintering profiles		x*

* Some restrictions apply

Real parts that reduce costs, shorten lead times, and increase revenue

Manufacturers across a range of industries use the turnkey Desktop Metal Shop System for mid-volume metal 3D printing production. These fully dense, high-resolution parts are made without tooling, shortening production time and producing 3D printed metal at a fraction of the cost of other additive technologies.

See the full list of printable materials, p. 52



Sensor holder

Material	17-4 PH	**Parts per build**	186
Cost per part	$7.45 - $11.59	**Throughput per week**	1,511

Shower spindle

Material	17-4 PH	**Parts per build**	397
Cost per part	$4.44 - $5.65	**Throughput per week**	2,933

PureSinter™

Breakthrough vacuum furnace for high purity, high efficiency, and high reliability

Debind > Sinter

This affordable, state-of-the-art debinding and sintering furnace features an all-new design that was rethought from the ground up. It features an innovative vacuum retort to deliver ultra-high levels of purity that helps solve the challenges of traditional vacuum furnaces and improve reliability.

PureSinter delivers the highest quality sintered parts, on par or better than industrial furnaces with higher acquisition and operating costs. Even titanium can be easily sintered with a high degree of confidence without the complex preparations required with other furnaces.

Key innovations

- Specially designed retort built in high density silicon carbide, a material known for its high thermal conductivity and strength, and low thermal expansion
- Peclet gas flow seal and flexible graphite gasket at the mating surface of the base and dome, shielding parts from all oxygen and other contaminants
- Energy-efficient fans instead of expensive cold water-cooled walls where residue can collect allowing PureSinter to stay extremely clean and contamination free

Retort volume	15.8 L (0.56 ft³)	**Max temperature**	1,420°C (2,588°F)
Atmosphere	Partial-pressure sintering (5-500 Torr)	**Average heat load**	16,700 BTU/hr for 2 hours
Heating	(12) standard resistive heating elements surrounding a silicon carbide retort	**Max heat load**	83,300 BTU/hr for 2 hours
Gas Types	Argon, nitrogen, forming gas, or Clean Dry Air	**Thermal uniformity**	±5°C at sintering temperatures

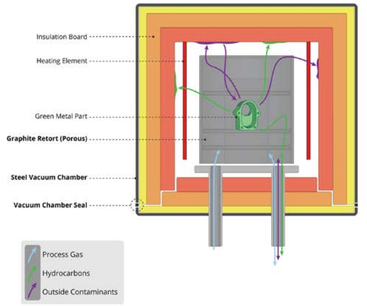
Total industry solution for debind and sintering

As the leaders in sinter-based additive manufacturing, Desktop Metal is dedicated to developing solutions that make sintering easier, faster, and more reliable. Just as our popular Live Sinter™ simulation software predicts and corrects for sintering deformation, the PureSinter furnace is a breakthrough for cleaner, more efficient, and reliable sintering.

Importantly, PureSinter is designed as a total industry solution — not just for sinter-based AM, but also for PM, MIM, and other sectors that could benefit from a compact, high-purity vacuum furnace for combined debinding and sintering.

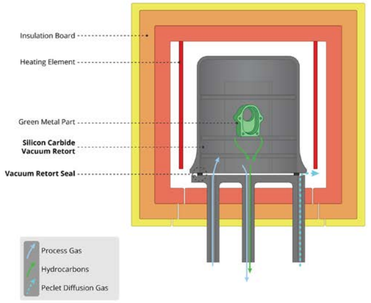
TRADITIONAL VACUUM FURNACE DESIGN

Most industrial furnaces develop contamination over time as carbon and other contaminants build up inside the processing environment.



NEW PURESINTER FURNACE DESIGN

PureSinter utilizes a revolutionary Vacuum Retort that keeps the heating elements and insulation on the outside and the working volume airtight and clean.



Ti-Tested™ | High-purity industrial sintering

PureSinter delivers a breakthrough for sintered powder metal applications with the ability to process a variety of metals and binders. PureSinter has sintered titanium to >98% density with properties that meet or exceed ASTM F2885 standards for HIPed PM Ti6Al4V material while using a much smaller energy footprint than conventional sintering furnaces.

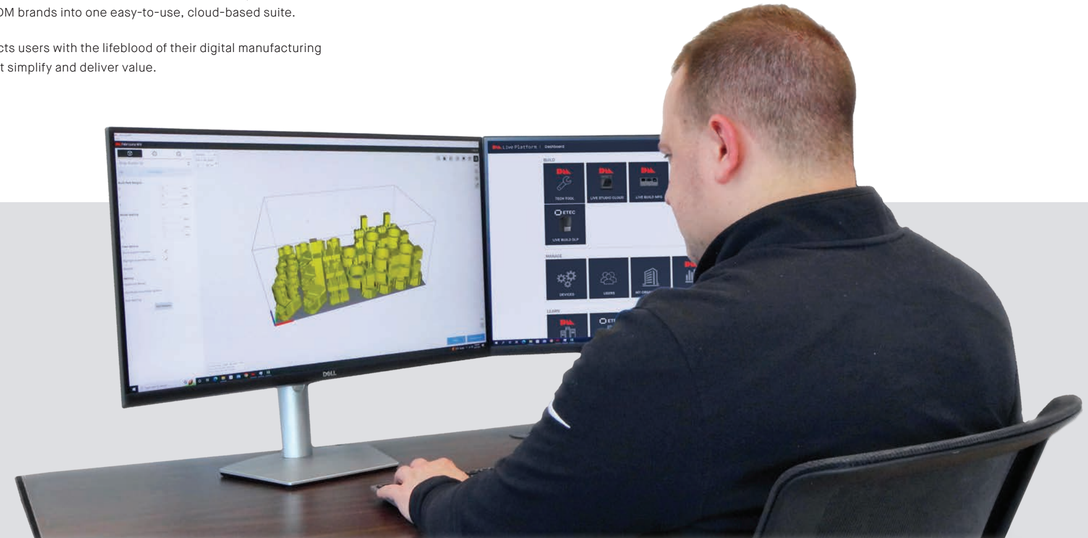
In testing with Ti64 — one of the most reactive and contamination-prone metals — we've verified the purity and repeatability of PureSinter for consistent results, cycle after cycle.

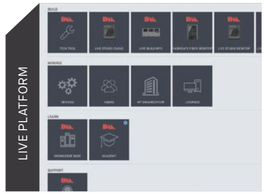
Live Suite™

Software to seamlessly manage 3D printers, accessories, and processes

As a digital manufacturing technology, 3D printing requires an integrated software workflow to help the process reach its true adoption potential. Live Suite is a package of premium software applications with all-new functionality for users of our Additive Manufacturing 2.0 systems that integrates software across Team DM brands into one easy-to-use, cloud-based suite.

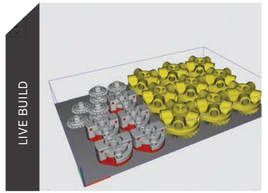
Desktop Metal's Live Suite connects users with the lifeblood of their digital manufacturing systems — data — in new ways that simplify and deliver value.





Live Platform™

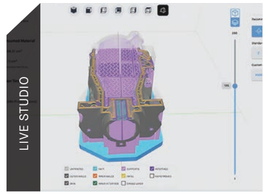
A cloud-based hub for managing the entire manufacturing workflow, with features like single sign-on and multifactor authentication. Live Platform centralizes printer and user provisioning, firmware updates, and technical support with a wide range of optional features such as remote monitoring and part serialization.



Live Build™ MFG

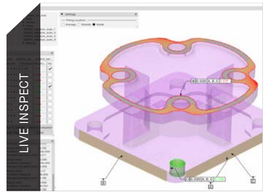
A desktop-based build preparation software with versions available for metal, sand, and ceramic binder jetting systems, as well as for ETEC digital light processing (DLP) platforms. Live Build prepares models for printing with automatic nesting and interactive slice preview, as well as print time and material and binder usage estimations.

Live Sinter simulates part behavior during the sintering process, including shrinkage and distortion (left). The software generates a negative offset geometry that prints and sinters to compensate for these effects (right)



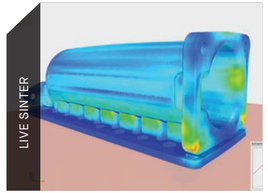
Live Studio™

A cloud-based build preparation software that supports slicing and build preparation for the Bound Metal Deposition™ technology of the Studio System. Live Studio enables a simple and seamless workflow from digital file to sintered part to reduce operator burden, ensure process efficiency, and automatically optimize fabrication of high-quality metal parts.



Live Inspect™

A tool to analyze features on a scan, provide GD&T style tolerance analysis, and then automatically scan-adjust the green part at the feature level, ensuring that corrections are precise and targeted, leading to significantly improved part accuracy. It can correct for defects across TeamDM systems and other 3D printing platforms.



Live Sinter™

A powerful, multi-physics sintering simulation application that simplifies binder jetting to deliver final parts with tight tolerances. Live Sinter helps compensate for shrinkage and distortion that can occur during sintering. It predicts and corrects for errors by creating a negative offset design that sinters to meet dimensional tolerances.

Studio System™

Office-friendly metal 3D printing with two steps and nine materials

Print > Sinter

The easy-to-use Studio System leverages proprietary Bound Metal Deposition™ (BMD), an extrusion-based metal additive manufacturing process where metal rods — metal powder held together by wax and polymer binder — are heated and extruded onto the build plate, shaping a part layer by layer. Once printed, the binder is removed via the debind process and then sintered, causing the metal particles to densify.

The Studio System 2 is even easier to use than ever before, with new material formulations allowing printed parts to be placed directly into the furnace without the need for a solvent debind. The result is a streamlined, two-step process with a nearly hands-free experience. Nine materials are available, including a range of steels, copper, and nickel and titanium alloys.

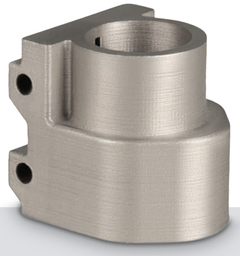
Key benefits

- Easy, two-step processing
- User-friendly, software-controlled workflow
- Patented smart Separable Supports™ technology for quick post-processing
- Qualified for nine materials
- Designed for office-friendly printing
- A trusted system used worldwide with success

Print technology	Bound Metal Deposition	**Layer height**	50–300 µm
Build envelope (L×W×H)	300×200×200 mm (12×8×8 in)	**Nozzle diameter**	250–400 µm

Simplified metal part production using safe-to-handle bound metal rods

The Desktop Metal Studio system creates metal parts for functional prototypes, tooling, jigs, and fixtures, and low-volume production applications with expert metallurgy built-in. Easily produce difficult-to-machine parts featuring complex geometries, like undercuts and internal channels, to optimize metal components in an office setting.



Gear lab coupling fixture

Material	17-4 PH	**Desktop Metal cost**	$110.00
Traditional cost	NA	**Savings**	62%

UHT atomizer

Material	316L	**Desktop Metal cost**	$124.20
Traditional cost	$1,089.00*	**Savings**	89%

*Not possible to machine, DMLS cost.

Herringbone gears

Material	4140	**Desktop Metal cost**	$40.67
Traditional cost	$153.43†	**Savings**	73%

†Economy price from Xometry.

See the full list of printable materials, p. 52

X-Series™

Binder jetting for specialty materials with Triple ACT

The Desktop Metal X-Series offers scalable binder jet 3D printing of specialty materials, including metals and ceramics, with high density and repeatability for precision end-use parts, and tooling in a range of build areas. These open material systems feature industrial printheads and patented Triple ACT advanced compaction technology, which dispenses, spreads, and compacts ultra-fine powders independently with tight control.

Triple ACT enables the use of both high- and low-flow metal and ceramic powders with large and small particle sizes. The X-Series is used to process stainless steels, tool steels, nickel alloys, aluminum and titanium alloys, and metal composites as well as technical ceramics such as silicon carbide and aluminum-infiltrated boron carbide (B_4C).

See the full list of printable materials, p. 52

More Binders, More Applications

Piezoelectric printheads allow the X-Series to process various binders tailored to meet a range of manufacturing challenges.

- FluidFuse™: Excellent general purpose properties for a variety of materials, including reactive powders
- PhenolFuse™: For high-temperature non-metallic carbides

InventX™

In production since 2016, this compact, easy-to-use system produces high-quality small parts

- Education and research
- Prototyping and rapid product development
- Short-run or batch production without tooling

Print technology	Triple ACT binder jetting
Build envelope (L×W×H)	160×65×65 mm (6.3×2.5×2.5 in)
Build volume	0.676 l (41 in³)

Max build rate	54 cc/hr at 65 µm layer thickness
Print resolution	
80pL printhead	400 dpi
30pL printhead	600 dpi
10pL printhead	800 dpi

X25Pro™

This flexible, mid-sized binder jet system can produce a wide range of geometries and help businesses scale from low to mid-volume production

- Research
- Prototyping and rapid product development
- Scalable batch or bridge production without tooling

Print technology	Triple ACT binder jetting
Build envelope (L×W×H)	400×250×250 mm (15.75×9.84×9.84 in)
Build volume	25 l (1,526 in³)

Max build rate	1,200 cc/hr at 65 µm layer thickness
Print resolution	
80pL printhead	400 dpi
30pL printhead	400 dpi
10pL printhead	800 dpi

X160Pro™

The largest commercially available binder jetting platform for the production of large parts and specialty materials

- World's largest binder jet build volume
- Prototyping and rapid product development
- Large or high-volume part production without tooling

Print technology	Triple ACT binder jetting
Build envelope (L×W×H)	800×500×400 mm (31.5×19.7×15.8 in)
Build volume	160 l (9,763 in³)

Max build rate	3,120 cc/hr at 65 µm layer thickness
Print resolution	
80pL printhead	400 dpi
30pL printhead	400 dpi
10pL printhead	800 dpi

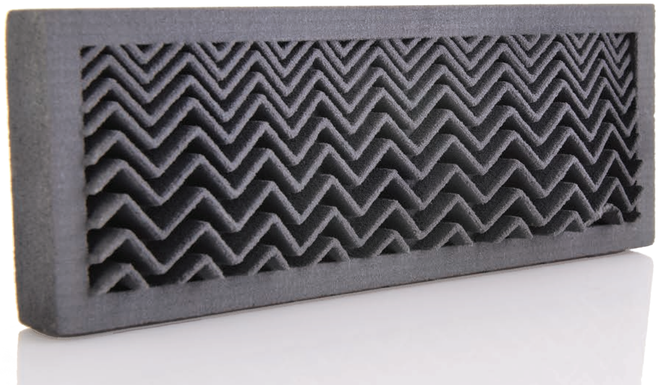
3D Printing Technical Ceramics

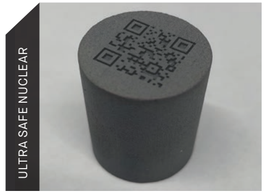
The best-kept secret in binder jetting

Forming technical ceramics the traditional way can be expensive, with long lead time molds and expensive post-processing, such as precision cutting and grinding. Advanced, high-hardness ceramics often require an ultrahard diamond tool for precision finishing.

With the flexibility of binder jetting, however, creating precision geometries that can be sintered or infiltrated to create ceramic composites is relatively easy. Virtually any geometry, regardless of complexity, including lattices or hollow structures, can be created — bringing the many benefits of technical ceramics to new forms and products. Final parts can also be porous or high-density, and various composite types are also possible. Binder jetting allows the ability to tailor the porosity and microstructure of a part by controlling the particle size and binder droplet strategy. What's more, it allows for a wide range of post-processing opportunities, from high-density sintering and chemical vapor infiltration (CVI) to reaction bonding and physical vapor deposition (PVD).

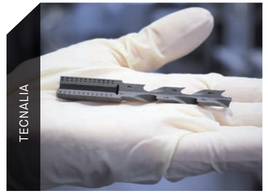
The flexibility of Desktop Metal binder jet systems allows manufacturers to print ceramics on our extra-large ExOne sand 3D printing systems as well as our Desktop Metal X-Series and Production System™ 3D printing platforms.





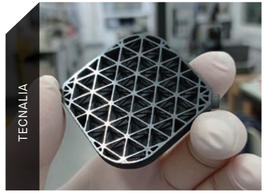
3D printing a new nuclear future with silicon carbide

Ultra Safe Nuclear uses X-Series binder jetting machines to 3D print highly pure, crystalline, nuclear-grade SiC into bespoke shapes that can safely surround a nuclear fuel particle, enabling Fully Ceramic Microencapsulated (FCM®) innovations.



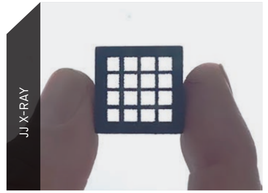
Binder jetting tungsten carbide cobalt hard metal

To meet the demands of the harsh conditions in modern machining operations, tools with excellent mechanical properties are required. TECNALIA 3D print WC-Co drills with tailored cooling channels and unique geometries unmanufacturable with other methods.



Sending optimized silicon carbide into space with binder jetting

Silicon carbide's strength and thermal properties make it ideal for the harsh environments of space, but also extremely difficult and expensive to process. TECNALIA uses binder jetting to build near-net parts that reduce post-processing and improve weight performance.



2D collimator 3D printed in enriched boron carbide

Common collimator designs are based on blades that inherently collimate in only one dimension. Researchers at JJ X-Ray are advancing 2D collimation with the new innovations using the design freedom of Desktop Metal binder jet 3D printing.

Scaling 3D printing of technical ceramics with binder jetting

Scalability is important as Saint-Gobain Research North America develops technical ceramic materials and 3D printing applications. Using two Desktop Metal X-Series binder jetting systems, the team researches, develops, and scales technical ceramic applications.

Download the details

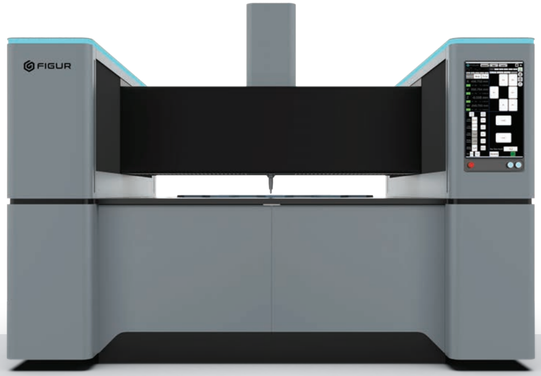
See our library of complete case studies
TeamDM.com/CeramicSuccess

Figur G15

Revolutionizing sheet metal forming

Traditional sheet metal forming is a capital- and time-intensive process that requires an expensive stamping press, which often costs about $1 million, as well as tools and dies that take months to produce. Figur's patent-pending Digital Sheet Forming (DSF) technology eliminates the need for a traditional stamping press or tools and dies, delivering sheet metal forming that is accessible, flexible, and cost-effective, even at low volumes.

The Figur G15 is the first commercial platform of its kind to shape sheet metal on demand directly from a digital file. High precision is maintained by the proprietary build box design that reduces force distribution across the sheet during the build — a challenge that can impede accuracy, is difficult to predict, and has hindered other efforts to digitize sheet metal forming in the past. Parts have a high-quality surface finish directly off the machine, with little to no post-finishing required.



Key benefits

- Faster, more predictable, and more accurate than traditional incremental sheet forming
- Adjustable width to process different sheet sizes
- Proprietary ceramic forming toolhead
- Magnetic urethane backing controls
- Replaces die stamping with modern, flexible, on-demand manufacturing

Technology	Digital Sheet Forming
Max sheet size	1,600 × 1,200 mm (63.0 × 47.2 in)
Capacity - Aluminum	2.5 mm (10 Ga)
- Steel	2.0 mm (14 Ga)
Z travel	400 mm (15.7 in)
Forming force	2,000 lbs X, Y, & Z
Forming speed	1 m/s

Commercializing Digital Sheet Forming

Figur's breakthrough and patent-pending DSF technology is ready to unlock the benefits of digitization for sheet metal manufacturers, making them more agile and making sheet metal forms more accessible to new markets. Easy-to-use software creates the toolpath for a ceramic tool on an XY gantry to shape sheet metal with up to 2,000 lbs of force.

Breakthrough DLP printers and materials

ETEC is focused on meeting the goals of general manufacturing and end-use industrial applications

With an all-new category of proprietary DuraChain™ photopolymers that produce tough, rubber-like elastomers and FDA Class II-cleared Flexcera™ material that goes right into the mouth for demanding ceramic-like dentures, we're elevating the game in polymer 3D printing.

Desktop Metal's new industrial polymer printing brand for general manufacturing, ETEC, is rooted in the 2021 acquisitions of EnvisionTEC and Adaptive3D. Together, they're delivering breakthrough new value focused on delivering more reliable, easy-to-use technology paired with groundbreaking materials, with even more exciting, production-minded innovations on the horizon.

Our portfolio of photopolymers for industrial applications includes hard and high-temperature plastics, castable clean-burnout resins, and elastomers, including our new DuraChain innovations, such as FreeFoam™ expandable 3D-printed foam and Elastic ToughRubber™. Trusted third-party resin providers, such as Henkel LOCTITE®, are also qualified on many of our systems.

- Elastomer and foam parts on demand
- Premium desktop DLP for industrial customers
- The world's largest, production-grade DLP system
- DLP 3D printing customer success stories

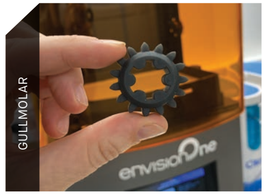
Polymer Success Stories

From faster-to-market prototypes to end-use parts at production scale

ETEC customers use the most advanced portfolio of precision polymer printers and materials on the market. Our DLP solutions are trusted by manufacturers around the world to deliver isotropic parts with the quality needed for demanding end-use applications. Components are 3D printed without tooling, enabling fast turnarounds, easy design iterations, faster product development lifecycles, and competitive part costs.

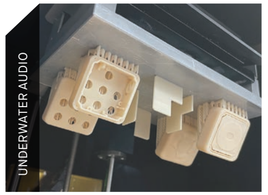
Ultimate guide to Digital Light Processing

Looking to expand the size of the industrial polymer solutions it could offer, the Centre for Innovation in Manufacturing at Red Deer Polytechnic installed an Xtreme 8K to explore DLP for printing complex components otherwise produced with more laborious and time-consuming urethane casting.



DLP gets fish processing equipment to market faster

Two Envision One DLP systems print designs on-demand to test for fit, functionality, and final manufacturability without any tooling investment. Designs are quickly advanced from plastic to metal 3D printing, reducing time to market by an entire year.

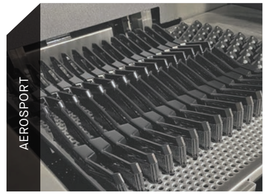


Precision prototyping for fit and function

Underwater Audio manufactures waterproof electronics that require high-precision assemblies. With the ETEC D4K, manufacturability and fit can be tested while eliminating tooling for small- to medium-volume production.

Revolutionizing footwear manufacturing

Made Plus uses an on-demand manufacturing model to change the way footwear is made. The speed of the Xtreme 8K enables production of Elastic ToughRubber material with the durability and flexibility for consumer end use.



Rewriting the rules for producing rubber parts

Aerosport Additive 3D prints prototypes, working models, and volume applications to shorten lead times and reduce per part costs in Elastic ToughRubber™, a tough yet pliable material available exclusively on the ETEC Xtreme 8K.

Download the details

See our library of complete case studies, videos, and more
TeamDM.com/DLPSuccess

ETEC

Industrial-grade DLP printing with high throughput, precision, and performance

Established from Desktop Metal's 2021 acquisition of EnvisionTEC, the original inventor of digital light processing (DLP) technology, ETEC has long roots in the additive manufacturing industry. Today, ETEC has one of the most advanced portfolios of precision photopolymer printers and materials in the market, with a strong reputation for extreme levels of accuracy and surface finish.

ETEC professional and production-grade printers are the only systems in the market that support proprietary breakthrough DuraChain™ resins, an all-new category of resilient and durable photopolymers that includes Elastic ToughRubber™ and FreeFoam™, as well as print a range of industrial photopolymers from widely trusted brands, such as Loctite.

Breakthrough materials

New levels of energy density from dual projectors and a custom optical train are empowering new material properties with the Xtreme 8K. DuraChain™ elastomers and foams, offered exclusively with top-down DLP technology, cure into durable, resilient parts with breakthrough properties. Our materials team continuously works with third-party companies to qualify new materials like a variety of tough, rigid plastics.

Learn More about soft, flexible parts at TeamDM.com/ToughRubber

Desktop

D4K

Desktop production of high-resolution, polymer end-use parts

Print technology	Digital Light Processing (DLP)
Build envelope (L × W × H)	148 × 83 × 110 mm (5.8 × 3.3 × 4.3 in)
Native pixel size	50 µm
Z resolution	25–100 µm (material dependent)

Desktop

Envision One

Rapid production of strong, fully isotropic end-use parts

Print technology	Continuous Digital Light Manufacturing (CDLM)
Build envelope (L × W × H)	180 × 101 × 175 mm (7.09 × 3.98 × 6.9 in)
Native pixel size	93 µm
Z resolution	50–150 µm (material dependent)

See the full list of printable materials, p. 54

Production

Pro XL

Affordable, ultra-high resoltuion end-use parts

Print technology	Digital Light Processing (DLP)
Build envelope (L × W × H)	249.1 x 140.1 x 165.1 mm (9.8 x 5.5 x 6.5 in)
Native pixel size	65 µm
Z resolution	25–100 µm (material dependent)

Production

Xtreme 8K

A top-down DLP printer with two projectors for high-volume production of large end-use parts or high throughput of smaller parts

Print technology	Top-Down Digital Light Processing (DLP)
Build envelope (L × W × H)	450 × 371 × 399 mm (17.72 × 14.61 × 15.71 in)
Native pixel size	150 µm
Z resolution	100–175 µm (material-dependent)

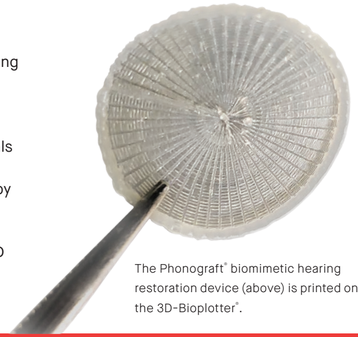
Medical & dental 3D printing

The healthcare brand of Desktop Metal, Desktop Health™ delivers 3D printing technology trusted for 20+ years to improve patient lives

With industry-leading materials like FDA Class II-cleared Flexcera™ for permanent, temporary, and removable dental restorations, and continuous innovations in our breakthrough and CE marked bioprinter, the 3D-Bioplotter® for tissue engineering and more, we are elevating the healthcare game with our promise to deliver personalized, patient care.

Desktop Metal's 3D printing brand for healthcare manufacturers, Desktop Health, is rooted in the 2021 acquisition of EnvisionTEC. Today, Desktop Health is focused on delivering breakthrough solutions to personalize patient care by leveraging additive manufacturing to develop and commercialize applications across a range of healthcare specialties, including dental, medical, and biofabrication. Our customers use Desktop Health technology to deliver new innovations to the marketplace such as CMFlex™, a new, 3D-printed regenerative bone graft device that recently received FDA 510(k) clearance.

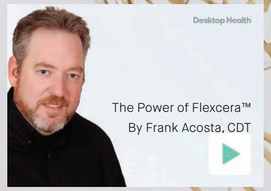
- Proven, high-precision 3D printers for demanding applications
- Medical-, dental-, and research-grade materials
- 3D-printed parts used by patients for decades
- Backed by rigorous R&D



The Phonograft® biomimetic hearing restoration device (above) is printed on the 3D-Bioplotter®.

Desktop Health DLP printers, such as the Einstein Pro XL (right), are popular for printing dental and orthodontic models as well as restorations.

Digital Dentistry Resource Hub



On-demand webinars

Taught by our own users, Desktop Health webinars can get you started on the Digital Dentistry journey — or take you the extra mile to help you become an expert. Learn more at TeamDM.com/DentalWebinars

Meet Ray

Ray's two-decade struggle with tooth loss led him to seek out Amazing Smiles, a practice that could help him regain his "Al Green smile." With the help of Flexcera™ and 3D printing technology, we made his dream a reality. Watch Ray's joyful journey to reclaim his smile.

Meet Maria

Every smile has a story. Discover Maria's joy as she flashes her pearly whites with confidence, a testament to the transformative power of Flexcera. Grinning broadly has never been this effortless and rewarding! An avid runner, she now loves to take selfies on the trail to show off her beautiful Flexcera Smile to everyone.

Meet Debbie

Debbie's journey towards a brighter smile began with Flexcera. For two years, she held back her smiles. Now, she's rediscovered the joy of expressing her happiness freely. Beyond the beauty, she appreciates how she can now eat what she wants thanks to the function and fit of her Flexcera Smile.

Meet Beth

Beth found a renewed zest for life with Flexcera. Discover her journey towards a vibrant, natural-looking smile, and understand how our high-accuracy 3D printers and premium biocompatible materials have given Beth her confidence back. She used to hide her smile, but now, "I just let 'em flash... I can't stop smiling."

Meet Patty

Patty used to hide her smile with her hand. Today, she's happily sharing her smile with friends, family, and clients. Flexcera improved not just Patty's smile; it's boosted her confidence and self-esteem. "I smile in the car just driving all by myself — I love it."

Patients love Flexcera

Watch our customer stories and experience these life-changing transformations at TeamDM.com/FlexceraSmiles

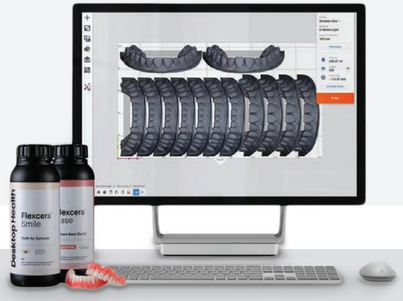
Desktop Health

Superior 3D printing machines and materials designed for dental professionals

Meticulously designed for dental professionals, the Einstein series hits on all the key features essential to superior 3D printing: accuracy, throughput, and versatility.

The Einstein™ Pro XL is built for high production, and the Einstein™ is equipped for speed. Harnessing the efficiency of our proprietary 385 nm wavelength projector coupled with our Hyperprint™ technology combines the power of heat and a closed-loop software, allowing you to fabricate a variety of dental applications, from models to dentures and everything in between, with ease and at up to 50% faster speed than its predecessor.

	Einstein	Einstein Pro XL
Print technology	Digital Light Processing (DLP)	Digital Light Processing (DLP)
Build envelope (L×W×H)	190×107×101 mm / (7.48×4.21×4 in)	249×140×165 mm / (9.8×5.5×6.5 in)
LED Wavelength	385 nm	385 nm
Chip	Industrial-grade resolution	Industrial-grade 4K resolution
HyperPrint	Heat + closed loop printing	Heat + closed loop printing
Native XY	99 µm	65 µm
Effective XY	65 µm	45 µm
Layer Options	25, 50, 75, 100, and 150 µm	25, 50, 75, 100, and 150 µm



Fit for a genius: Einstein™ series + Flexcera™ family of resins

Einstein prints the proven Flexcera family of dental materials, which includes Flexcera Base, Smile, and Smile Ultra+. This proprietary material was developed over 3 years, tested, and selected from more than 200 formulations to deliver ceramic-like strength and life-like esthetics to give each individual patient a beautiful, functional smile. With high fracture rates and resistance to moisture, adopting the Einstein and Flexcera workflow empowers dental providers to print crowns, bridges, veneers, inlays/onlays, and full and partial dentures with a predictable and reliable fit and finish.

Desktop Health

3D-Bioplotter is the most researched biofabrication printer in the industry

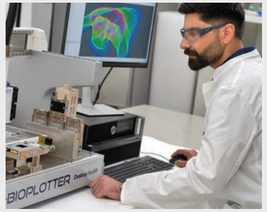
The Desktop Health 3D-Bioplotter is a state-of-the-art, extrusion-based printing system that can process a range of materials and has been unmatched in the marketplace for more than two decades. First launched in 2002, the 3D-Bioplotter is cited in more than 2,490 research papers, with more than 600 peer-reviewed papers published based on research done with the 3D-Bioplotter across a wide range of categories.

Today, a variety of medical devices and products are being researched and developed on the 3D-Bioplotter, with some of the first applications now being cleared by regulators. As one of the world's most sophisticated extrusion systems, the 3D-Bioplotter is also used for non-medical purposes as well, including 3D printing of metals and foods.

3D -Bioplotter System Configurations

	Developer Series	Manufacturer Series
Footprint (L×W×H)	976 x 623 x 773 mm (38.4 x 24.5 x 30.4 in)	976 x 623 x 773 mm (38.4 x 24.5 x 30.4 in)
Build envelope (L×W×H)	200×220×140 mm (7.87×8.66×5.51 in)	200×220×140 mm (7.87×8.66×5.51 in)
Temperature-controlled build platform, heated and cooled; -10 °C to 80 °C (14 °F to 176 °F)	Optional	Standard
Needle tip calibration accuracy (XY)	30 µm	9 µm
Needle tip calibration accuracy (Z)	30 µm	30 µm
High-resolution camera for recording logs	Not offered	Standard
Method of calibration	Automated with light sensor for XYZ	Automated with on board camera for XY; Needle tip pressure sensor for Z
Modular printhead stations	3 available	5 available
Module printhead availability	2 come standard with system, 8 available	2 come standard with system, 8 available
Filters, particle and sterile	Standard	Standard

Read about CMFlex™ and Phonograft®



The first medical devices enabled by R&D on the 3D-Bioplotter are on their way toward commercialization. Read more about CMFlex, which recently received FDA 510(k) clearance after being developed and manufactured on the 3D-Bioplotter by Chicago-based Dimension Inx. Also follow the story of the Phonograft biomimetic hearing restoration device, shown printing (right).

Download the 3D-Bioplotter brochure at TeamDM.com/3DBioplotter

Developer Series for research & development

Designed as an affordable, still highly capable bioprinter for research groups new to bioprinting. Consists of the same base hardware and software as the Manufacturer Series, but with reduced functionality. Not upgradeable to the same capability of the Manufacturer Series.

See the full list of biofabrication materials, p. 55

Manufacturer Series for commercialization

Designed as a tool for both advanced research and commercial production. Capable of using all hardware and software options of the 3D-Bioplotter Series. Key differences include accuracy delivery, camera, and build plate temperature controls.

Pioneering digital metalcasting

ExOne printing systems produce sandcasting molds and cores for foundries and manufacturers without traditional tooling, unleashing new innovations and value

Around the world, ExOne sand 3D printers deliver valuable, modern technology that is transforming the centuries-old method of sandcasting. By eliminating the time and cost of traditional hard tooling, ExOne printers help foundries and manufacturers stay competitive by directly producing sand molds and cores for castings of any volume, usually within days.

The benefits don't stop there. While casting prototypes or end-use production parts with digital casting gets products to market faster, the technology also enables part consolidation and organic designs that deliver meaningful weight savings to new products, as well as innovative new designs that were once impossible. Foundries are using ExOne systems to print consolidated cores, reducing assembly labor, and incorporate previously impossible rigging features into molds that help deliver done-in-one pours.

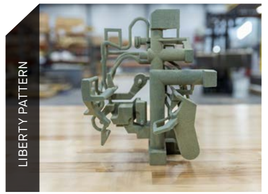
- Binder jetting systems for every foundry
- Growing business with fast production
- Working efficiently with less labor
- Increasing yield with reduced core assemblies

Sand Success Stories

Real foundries, real binder jet solutions

Foundries around the world use our binder jet 3D printing technology to deliver meaningful solutions to their customers and their bottom line. From eliminating the need for hard tooling and operating more efficiently in the absence of labor to consolidating core assemblies and innovating lightweight designs, ExOne customers are revolutionizing metalcasting with digital sand production.

Image courtesy of GF Casting Solutions Leipzig



Core consolidation from 20+ parts to one complex print

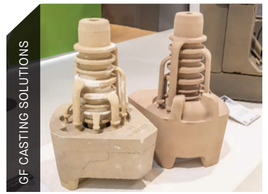
Hybrid tooling is a main offering at Liberty Pattern, combining both traditional hard tooling for large mold sections and 3D printing for complex internal features. A traditional assembly of over 20 segments was 3D printed as a complex single-piece core for an aerospace application.

Advancing automotive seat mold tooling with binder jetting

Dundee Castings is a Tier 2 supplier of premium, automotive seating molds to most of the world's leading global automakers. By using binder jetting and printing complexity, the foundry has improved consistency and quality by eliminating tolerance stacking through digital sand production.

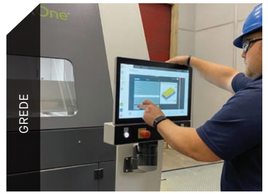
Lightweighting with digital sandcasting technology

Ventana showcases the design possibilities of digital sand core production for lightweight components. With topology optimization and a 3D-printed sand core, this cast magnesium aircraft door hinge was 40% lighter than the traditional aluminum component.



12-piece assembly consolidated into one 3D-printed complex core

Before the introduction of 3D printing, GF Casting Solutions had to produce 12 sub-cores, then assemble and glue them together. With binder jetting on S-Max machines with cold hardening phenolic binder, the foundry is able to print a single core that saves time and skilled labor.



Two-shift productivity in one shift with lights-out 3D printing

One of the largest producers of critical cast-iron components in the U.S., Grede recognized that advanced processes like binder jet 3D printing was key to their future growth. Its two ExOne systems enable them to do more with less, consolidating core assemblies and decreasing delivery times.

Download the details

See our library of complete case studies with videos
TeamDM.com/SandSuccess

ExOne

Digitally optimizing sandcasting for complex, quick-turn metal parts

ExOne's family of sand 3D printers is the most popular in the world for digital manufacturing of sand cores and molds for sandcasting, solving production challenges for applications across a variety of industries. Our trusted machines support prototyping, serial production, and parts on demand, enabling foundries to go from design to metalcasting in hours or days instead of weeks and months.

No more patterns needed for sand molds. No more core boxes needed for blowing cores. No jigs or fixtures needed for core assembly. Print complex cores in one piece. This is how cores were meant to be made.

S-Max® Flex

Robotic system to provide faster payback and easy integration into digital casting

- User-friendly design
- Fast, flexible production
- Robust scalable architecture

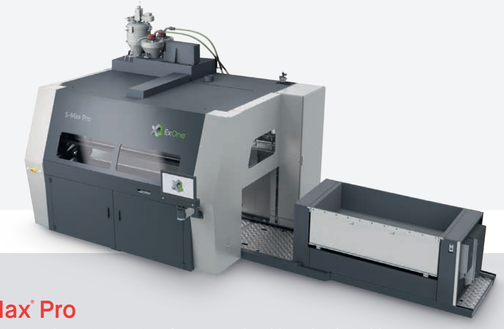
Job box (L×W×H)	1,750×850×700 mm (68.9×33.5×27.6 in)	**Dimensional accuracy**	± 0.5 mm ± 0.15% over 500 mm
Max throughput	73 l/hr	**Print media**	Silica
Layer thickness	0.4 mm	**Binder system**	Furan

S-Max®

The original S-Max for trusted, reliable core and mold production

- Rapid product development
- Short-run production
- Optional second job box

Job box (L×W×H)	1,800×1,000×700 mm (70.9×39.4×27.6 in)	**Dimensional accuracy**	+/- 0.5 mm +/- 0.1 % over 500 mm
Max throughput	145 l/h	**Print media**	Silica and synthetic medias
Layer thickness	0.2–0.5 mm	**Binder system**	Furan, CHP



S-Max® Pro

Our fastest and smartest system for core and mold production with the widest range of binders, including inorganic

- Remote monitoring options
- Interchangeable job box
- 24/7 production
- Siemens MindSphere enabled

Job box (L×W×H)	1,800×1,000×400/700 mm (70.9×39.4×27.6/15.8 in)	**Dimensional accuracy**	+/- 0.5 mm +/- 0.1 % over 500 mm
Max throughput	145 l/h	**Print media**	Silica and synthetic medias
Layer thickness	0.2–0.5 mm	**Binder system**	Furan, CHP, HHP, inorganic

Team DM master materials list

At Desktop Metal, we offer more than metals now. Our materials library spans virtually every category, from metals and polymers to ceramics, composites, and even upcycled materials such as wood.

In an effort to drive production 3D printing to the masses, our qualified materials are designed to ensure that you can 3D print with success and deliver the high-quality parts you need for end-use production. In fact, you won't find a more flexible additive manufacturing partner for the long term.

Our materials have been developed by an in-house team of world-leading materials scientists, as well as leading industry partners. Explore our portfolio.

Qualified
Printing and sintering profiles developed by Desktop Metal, with fully characterized material and mechanical properties.

Customer Qualified
Printing and sintering profiles developed by or in partnership with customers and/or partners, with material and mechanical properties suitable for customer/partner applications.

R&D
Initial testing completed by Desktop Metal demonstrating binder and process compatibility. Printing and sintering profiles under final development.

Metal

Industry standard metals trusted by manufacturers	Desktop Metal			
	Studio System	Shop System	X-Series	Production System
TECHNOLOGY	BOUND METAL DEPOSITION	PLUG-AND-PLAY BINDER JETTING	BINDER JETTING WITH TRIPLE ACT	BINDER JETTING WITH SINGLE PASS JETTING
17-4 PH Stainless Steel	Qualified	Qualified	Qualified	Qualified
304L Stainless Steel		Qualified	Qualified	
316L Stainless Steel	Qualified	Qualified	Qualified	Qualified
4130 Low-Alloy Steel			R&D	
4140 Low-Alloy Steel	Qualified		R&D	Qualified
420 Stainless Steel				Qualified
440C Stainless Steel				Qualified
4340 Low Alloy Steel			R&D	
8620 Alloy Steel			R&D	
A2	Qualified			
Aluminum 6061			Customer Qualified	R&D
Bronze			R&D	
C18150				Qualified
Cobalt Chrome		Qualified*	Customer Qualified	
Copper	Qualified		Customer Qualified	Qualified
CM247		R&D	R&D	
D2 Tool Steel	Qualified			Qualified
DM HH Stainless Steel				Qualified
Gold			Customer Qualified	Customer Qualified
H13 Tool Steel	Qualified		Customer Qualified	Qualified
Hastelloy			R&D	
Haynes 282			R&D	
M2 Tool Steel			Qualified	
Nickel Alloy IN625	Qualified	Qualified	Qualified	Qualified
Nickel Alloy IN718		Qualified	Qualified	Qualified
Nickel-Free Austenitic Stainless Steel			R&D	Qualified
Platinum				Customer Qualified
S7 Tool Steel				Qualified
Silver			Customer Qualified	Qualified
Titanium (Ti64)	Qualified		Customer Qualified	Customer Qualified
Tungsten Carbide Cobalt			Customer Qualified	R&D
Tungsten Heavy Alloy			Customer Qualified	
TZM Molybdenum			R&D	

*Not currently qualified for medical applications. Material availability as of June 2024. Subject to change.

Images (left to right):
Silver rings
17-4 PH golf club putter
IN625 gears
H13 injection mold

Ceramic & Composite

	Desktop Metal		ExOne			
	X-Series	Production System	S-Max Flex	S-Print	S-Max	S-Max Pro
TECHNICAL AND NATURAL CERAMICS						
Alumina	R&D					
Aluminum Nitride	R&D					
Carbon	R&D			CustomerQualified		
Glass	R&D					
Natural Sands			Qualified	Qualified	Qualified	Qualified
Silicon Carbide	CustomerQualified			CustomerQualified		
Synthetic Sands				Qualified	Qualified	Qualified
Tungsten Carbide Cobalt	CustomerQualified	R&D				
+CERAMIC						
Boron Carbide i/w Aluminum	R&D					
Silicon Carbide i/w Silicon	CustomerQualified					
+METAL						
316i	Qualified					
420i	Qualified					
Iron i/w Bronze	R&D					
Tungsten i/w Bronze	Qualified					
Tungsten i/w Copper	R&D					
Tungsten i/w Invar	R&D					

Polymer

Exclusive resins developed by ETEC and Adaptive3D as well as trusted providers such as Loctite, Evonik, and BASF	Envision One	D4K	ProXL	Xtreme 8K
CASTABLE RESINS				
Easy Cast 2.0			Qualified	
EPIC		Qualified		
PIC 100		Qualified	Qualified	
WIC100		Qualified		
ELASTOMERS				
DuraChain™ Elastic ToughRubber™ 70 Black				Qualified
DuraChain™ Elastic ToughRubber™ 90 Black				Qualified
DuraChain™ Elastic ToughRubber™ 90 White				Qualified
DuraChain™ Soft ToughRubber™ 30 Black				Qualified
DuraChain™ Chemical ToughRubber™				R&D
DuraChain™ FreeFoam™				R&D
LOCTITE® IND 402 Black	Qualified			
HARD PLASTICS				
E-Rigid Form Charcoal	R&D	R&D	Qualified	R&D
LOCTITE® 3843 Black	Qualified		Qualified	Qualified
LOCTITE® IND 405 Black	Qualified			Qualified
LOCTITE® IND 405 Clear	Qualified		Qualified	
LOCTITE® MED 413 Clear	Qualified			
Q-View		Qualified		
RC70		R&D	R&D	
RC90		R&D		
HIGH TEMPERATURE				
Ultracur3D® RG 3280			Qualified	
INFINAM® FR 4100L			Qualified	Qualified
INFINAM® ST 6100 L			Qualified	Qualified
HTM 140		R&D	Qualified	
LOCTITE® IND 147 Black	Qualified			R&D
LOCTITE® IND 406 Black	Qualified			

	Envision One	D4K	Desktop Health: Einstein	Desktop Health: Einstein Pro XL
DENTAL APPLIANCES				
E-Guard	Qualified	Qualified	Qualified	Qualified
E-Guide	Qualified	Qualified	Qualified	Qualified
E-IBD	Qualified	Qualified	R&D	R&D
E-Tray	Qualified	Qualified	Qualified	Qualified
Flexcera™ Base	Qualified	Qualified	Qualified	Qualified
Flexcera™ Smile	Qualified	Qualified	Qualified	Qualified
Flexcera™ Smile Ultra+	Qualified	Qualified	Qualified	Qualified
Keysplint Soft	Qualified	Qualified	Qualified	R&D
SmileGuard™	Qualified	Qualified	Qualified	Qualified
MEDICAL MODELS				
E-Gum	Qualified	Qualified		
E-Model Beige	Qualified	Qualified		
E-Model Light	Qualified	Qualified	Qualified	Qualified
E-OrthoShape	Qualified	Qualified		
Model X	Qualified	Qualified	Qualified	Qualified
Model Z	Qualified	Qualified	Qualified	Qualified
Press-E-Cast	Qualified	Qualified	Qualified	R&D

Biofabrication

HT High Temperature
LT Low Temperature

RG Research Grade
MG Medical Grade
TG Technical Grade

		Desktop Health: 3D-Bioplotter
2K Silicone 50A RG	Soft tissue materials	Qualified
LT Hydroxyapatite RG	Bone/cartilage materials	Qualified
HT PCL 50K RG	Bone/cartilage materials	Qualified
HT PCL 80K MG	Bone/cartilage materials	Qualified
HT PCL 120K MG	Support materials/other	Qualified
HT Support RG	Bone/cartilage materials	Qualified
LT Silicone TG	Support materials/other	Qualified
LT Support RG	Support materials/other	Qualified
LT TissueInk RG	Soft tissue materials	Qualified
UV Silicone 60A MG	Soft tissue materials	Qualified

Sheet Metal

Digital Sheet Forming technology to eliminate the need for a traditional stamping or tooling.
Please visit **TeamDM.com/Figur** for more information.

Wood

Rematerializing wood waste to produce beautiful end-use products.
Please visit **TeamDM.com/Forust** for more information.

Images (left to right):
Complete dentures 3D printed and assembled in Flexcera™ Base and Flexcera™ Smile.
A bicycle helmet 3D printed in LOCTITE® IND 405 on the Xtreme 8K.
The black shroud of the DustBuddie from Dustless® Technologies is 3D printed in Elastic ToughRubber™.
Propeller blades binder jet 3D printed from sawdust and bio-epoxy resin in a variety of finishes.

Additive Manufacturing 2.0

Metal | Polymer | Ceramic | Composite | Wood

3D printing solutions with the speed, quality, and repeatability suitable for mass production.

Desktop Metal is accelerating the transformation of manufacturing with an expansive portfolio of 3D printing solutions, from rapid prototyping to mass production. Founded in 2015 by leaders in advanced manufacturing, metallurgy, and robotics, the company is addressing the unmet challenges of speed, cost, and quality to make additive manufacturing an essential tool for engineers and manufacturers around the world.

Desktop Metal was named one of the world's 30 Most Promising Technology Pioneers by the World Economic Forum, included on MIT Technology Review's list of 50 Smartest Companies, and awarded the 2021 Fast Company's Innovation by Design Award in materials and Next Big Thing in Tech Award for sustainability.

Printer platforms

Desktop Metal

Desktop Health

ETEC

ExOne

FIGUR

Materials

ADAPTIVE3D

FORUST

Applications and more

aidro
Desktop Metal Company

Desktop Labs

DesktopMetal.com

63 Third Avenue | Burlington, MA 01803
(978) 224.1244

#TeamDM | NYSE:DM