Direct Metal Solutions

Precision production metal printing with the DMP printer series, 3DXpert™ software and LaserForm® materials
Go further with Direct Metal Printing

UNLOCK YOUR PRODUCT’S POTENTIAL
With complete design freedom, direct metal 3D printed parts can be stronger, lighter, longer lasting and higher performing than machined or cast assemblies. Manufacture superior performing products faster and at a lower cost than with traditional fabrication methods.

ACCELERATE TIME-TO-MARKET
Conduct R&D, prototyping and production all in the same system. DMP users around the world are designing faster and compressing production times. Transform complex assemblies that take hundreds of hours to machine and assemble into a single high value part printed in hours or days.

STREAMLINE SUPPLY CHAINS
With DMP, you have complete control over your production, without relying on specialty components from suppliers. Print entire assemblies on demand, with fewer components, as needed.

INCREASE MANUFACTURING AGILITY
Metal additive manufacturing requires no tooling, reducing overhead and increasing economies of scale. You are able to update designs and change your production mix to meet changing market demands.

CONFORMAL COOLING
Direct integration of conformal cooling channels into this blow mold increases efficiency by 30%.

SIMPLIFIED ASSEMBLIES
Replacing a complex assembly, this single burner component contains nine under-cuttings and six internal cavities.

REDUCED WEIGHT
Complex lattice structures allow significant weight reduction for this combustion chamber.

ENHANCED FLUID FLOW
For this turbine inlet guide vane, computed fluid dynamics simulation predicts a 70% reduction in shock intensity.

TOPOLOGY OPTIMIZATION
Topology optimized aerospace bracket reduces weight by 35%.

MASS CUSTOMIZATION
Designed to perfectly fit the obstructed zone, this reconstruction corrects the patient’s facial asymmetry.
Flexible Metal AM, exceptional quality

DMP Flex 100, ProX® DMP 200 & 300

The DMP Flex 100, ProX DMP 200 and 300 share a common architecture to print exceptionally detailed, high quality parts in an automated and repeatable process that is ideal for R&D and serial part manufacturing at the tightest tolerances in direct metal printing.

INDUSTRY’S BEST SURFACE FINISH
Reduce machining or polishing of final parts.

CLEAN AND SAFE
Sealed powder loading and recycling prevents material contamination and increases operator safety.

EXCEPTIONAL MECHANICAL PROPERTIES
Roller compaction yields higher density and uniform mechanicals.

UNMATCHED PRECISION
Print the finest features with exceptional accuracy.

INTEGRATED METAL PRINTING
ProX DMP printers, 3DXpert™ software and LaserForm® materials are fine-tuned for process reliability and repeatability.

PRINT IN CERTIFIED ALLOYS
Count on your results with certified LaserForm materials and extensively tested print parameters.

3DXPERT FOR FASTER DATA PREPARATION AND EXCEPTIONAL BUILD OPTIMIZATION
3DXpert software, 3D Systems’ precision metal printing solution, is delivered with every DMP printer. Benefit from intelligent design tools and fast build preparation, relying on the extensively tested build parameter database for your material of choice. No other software lets you localize print strategies for increased precision of metal parts.
High precision, high throughput
DMP Flex 350 and DMP Factory 350

DMP Flex and Factory 350, developed from the outcome of nearly half-a-million prints, offers fast build
turnaround times in demanding 24/7 production environments. DMP Flex 350 is upgradeable to DMP Factory
350, which has an integrated material handling system.

INTEGRATED METAL PRINTING
DMP printers, 3DXpert™ software and LaserForm® materials are fine-tuned for
process reliability and repeatability.

STRONGER MECHANICAL PROPERTIES
The lowest O₂ during builds (<25 ppm) for
exceptionally strong parts of high chemical purity.

EXTENSIVELY TESTED MATERIALS
Thousands of hours of parameter optimization
ensure predictable and repeatable print quality
with a broad range of LaserForm materials.

LOW TOTAL COST OF OWNERSHIP
Shared ancillary equipment maximizes printer
throughput and efficient consumables management
reduces operating cost.

HIGH QUALITY POWDER MANAGEMENT
DMP Factory 350 comes with integrated powder
management. An in-unit viewing panel enables
visual inspection of the ultrasonic sieve to ensure
incident-free operation.

DMP MONITORING FOR
REAL-TIME PROCESS MONITORING
Advanced Manufacturing requires close monitoring
of process variables. DMP Monitoring is a process
monitoring and non-destructive quality control
system, providing a wealth of data for informed
decisions on product quality and also serving as
process traceability and documentation for highly
regulated industries.
Metal Alloys for the DMP Series

3D Systems’ broad range of ready-to-run LaserForm® materials is formulated and fine-tuned specifically for 3D Systems DMP 3D printers to deliver high part quality and consistent part properties. The print parameter database that 3D Systems provides together with the material has been extensively developed, tested and optimized in 3D Systems’ part production facilities that hold the unique expertise of printing 500,000 challenging metal production parts in various materials year over year. And for your 24/7 production 3D Systems’ thorough Supplier Quality Management System guarantees consistent, monitored material quality for reliable results.

Extra High Productivity Upgrade for LaserForm Ti Gr5 (A) and Ti Gr23 (A)
Count on up to 34% speed increases and decisive per part cost reductions while maintaining the high level of consistent, repeatable part quality as published in our LaserForm data sheets.

* Availability varies by printer model (see details on the last page).

YOUR SCALABLE DMP FACTORY NETWORK
DMP 350 platform is easily scalable for high volume part production. A central server manages print jobs, materials, settings and maintenance for 24/7 productivity. Shared resources, including cooling and powder recycling systems, increase efficiency.
<table>
<thead>
<tr>
<th></th>
<th>DMP Flex 100</th>
<th>ProX DMP 200</th>
<th>ProX DMP 300</th>
<th>DMP Flex 350</th>
<th>DMP Factory 350</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Build volume</strong></td>
<td><strong>W x D x H</strong>¹</td>
<td><strong>E x E x E</strong></td>
<td><strong>E x E x E</strong></td>
<td><strong>E x E x E</strong></td>
<td><strong>E x E x E</strong></td>
</tr>
<tr>
<td><strong>DMP Flex 100</strong></td>
<td>3.94 x 3.94 x 3.15 in</td>
<td>5.51 x 5.51 x 3.94 in</td>
<td>9.84 x 9.84 x 12.01 in</td>
<td>10.82 x 10.82 x 14.96 in</td>
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<tr>
<td><strong>(100 x 100 x 80 mm)</strong></td>
<td><strong>(140 x 140 x 100 mm)</strong></td>
<td><strong>(250 x 250 x 305 mm)</strong></td>
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</tr>
<tr>
<td><strong>DMP Factory 350</strong></td>
<td><strong>LaserForm CoCr (B)</strong></td>
<td><strong>LaserForm CoCr (B)</strong></td>
<td><strong>LaserForm CoCr (B)</strong></td>
<td>**LaserForm Ti Gr1 (A)**²</td>
<td>**LaserForm Ti Gr5 (A)**²</td>
</tr>
<tr>
<td><strong>LaserForm 17-4PH (B)</strong></td>
<td><strong>LaserForm 17-4PH (B)</strong></td>
<td><strong>LaserForm 17-4PH (B)</strong></td>
<td>**LaserForm Ti Gr23 (A)**³</td>
<td>**LaserForm 17-4PH (A)**³</td>
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<tr>
<td><strong>LaserForm Maraging Steel (B)</strong></td>
<td><strong>LaserForm Maraging Steel (B)</strong></td>
<td><strong>NEW</strong></td>
<td>**LaserForm AISi7Mg0.6 (A)**²</td>
<td>**LaserForm Ni625 (A)**³</td>
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<tr>
<td><strong>LaserForm AlSi12 (B)</strong></td>
<td><strong>LaserForm AlSi12 (B)</strong></td>
<td></td>
<td></td>
<td>**LaserForm Ni718 (A)**³</td>
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<tr>
<td><strong>Layer thickness</strong></td>
<td>10 μm - 100 μm</td>
<td>10 μm - 100 μm</td>
<td>10 μm - 100 μm</td>
<td></td>
<td></td>
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<tr>
<td><strong>Preset</strong></td>
<td>30 μm</td>
<td>40 μm</td>
<td>10 μm and 60 μm</td>
<td></td>
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<tr>
<td><strong>Minimum feature size</strong></td>
<td>x=20 μm, y=20 μm, z=20 μm</td>
<td>x=100 μm, y=100 μm, z=20 μm</td>
<td>100 μm</td>
<td></td>
<td></td>
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<tr>
<td><strong>Minimum wall thickness</strong></td>
<td>150 μm</td>
<td>150 μm</td>
<td>150 μm</td>
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<tr>
<td><strong>Typical accuracy</strong></td>
<td>± 0.1-0.2% with ≤ 50 μm minimum</td>
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<td></td>
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</tr>
<tr>
<td><strong>Powder Management</strong></td>
<td>Optional external</td>
<td>Optional external</td>
<td>Automatic</td>
<td>DMP Flex 350: Optional external</td>
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<tr>
<td><strong>Interchangeable build modules</strong></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>DMP Flex 350: Yes</td>
<td></td>
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<tr>
<td><strong>Real-time monitoring</strong></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>DMP Factory 350: N/A</td>
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</tbody>
</table>

¹Maximum available part size using standard build plate ²Set up A ³Set up B  Complete specifications available at www.3dsystems.com

Warranty/Disclaimer: The performance characteristics of these products may vary according to product application, operating conditions, material combined with, or with end use. 3D Systems makes no warranties of any type, express or implied, including, but not limited to, the warranties of merchantability or fitness for a particular use.