3D SYSTEMS

# Selective Laser Sintering Printers

Production thermoplastic parts with ProX® and sPro™ SLS printers

# Limitless Possibilities with Tool-less Manufacturing

### ELIMINATE THE TIME AND EXPENSE OF TOOLING

Direct 3D production from a CAD file eliminates the cost and time involved in tooling and fixtures.

### INCREASE MANUFACTURING AGILITY

Additive manufacturing requires no tooling, reducing overhead and increasing economies of scope.

### STREAMLINE YOUR WORKFLOW

Eliminate extensive programming and fixturing to free up your machinists. Drastically reduce assembly times by reducing total part count.

### DESIGN FOR FUNCTION

SLS technology frees designers from the restrictions of traditional manufacturing. Complete assemblies can be printed as one part, improving functionality, reducing cost and increasing reliability.

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### HOUSINGS

Manufacture in small to medium lot sizes, and bridge the time until final tools are manufactured.

### MACHINERY COMPONENTS

Integrate functionality and replace complex assemblies.

### FUNCTIONAL TESTING

Test your prototypes for functionality—such as heat run cycle tests.

### JIGS AND FIXTURES

Print complex assembly aids and free up CNC time for other projects.

### DUCTING

Optimize flow and fit in tight spaces with the freedom to print duct-work that is impossible to mold.

### CONSUMER GOODS

High-speed production for small lots and custom products.

# sPro™ 60, 140 & 230

## Accurate, tough production parts

3D Systems sPro SLS systems share a common architecture to produce high-resolution, durable thermoplastic parts available in medium to large build volumes.

Sander tool housing printed in DuraForm PA material

Back cover of vacuum cleaner printed in DuraForm EX Black

### TOUGH AND DURABLE PARTS

Industrial-grade performance delivers the toughest applications, print after print.

### EXCELLENT PART RESOLUTION, SURFACE FINISH AND EDGE DEFINITION

Print small to large parts with fine detail and sharp edges.

### FLEXIBILITY THROUGH UPGRADE OPTIONS

Upgradeable with the flexibility to increase speed and resolution to match your needs now and in the future.

### OPEN MATERIAL ARCHITECTURE

Broad choice of materials through flexible print parameters.

sPro™ 60

sPro™ 230

### TECHNOLOGY LEADERSHIP

3D Systems' patented Precision Counter Rotating Roller system spreads and compacts each layer of powder materials to create strong, dense parts with very smooth surfaces.

# ProX® SLS 500

## Production ready for tough, functional parts

Go beyond prototyping with production-ready SLS—highest accuracy, durability, repeatability and lowest total cost of operations.

### UNIFORM PROPERTIES

Tough and durable parts with uniform 3D mechanical properties: machine vs. machine, print after print, independent of part orientation.

### UNPRECEDENTED MATERIAL EFFICIENCY

High material efficiency delivers up to 95% return for economical and environmentally friendly operation.

### STREAMLINE YOUR WORKFLOW

Automated production tools, powder handling and recycling functions, and mobile production controls accelerate time to part.

### UNMATCHED PART QUALITY

Best resolution, surface finish and edge definition of any 3D sintering technology.

### MAXIMIZE YOUR INVESTMENT

Lower your cost of ownership with automated production tools, remarkably high throughput, material efficiency and repeatability.

Working buckle closure printed in metallic DuraForm ProX AF+

Hose fitting printed in DuraForm ProX GF

Manifold printed in DuraForm ProX FR1200

### MATERIAL QUALITY CONTROL SYSTEM (MQC)

Engineered specifically for the ProX SLS 500, the MQC ensures excellent parts and efficient use of material. It automatically collects, recycles and blends material, letting the printer run 24/7 for maximum productivity.

# Thermoplastics and Elastomers for Robust Production Parts

Select from a wide range of DuraForm® materials to match material performance with your specific application requirements. ProX materials are exclusive to the ProX SLS 500.

**DuraForm PA / DuraForm ProX PA**

Extra strong thermoplastic with superior mechanical properties and surface quality. This durable engineering plastic has balanced mechanical properties and fine-feature surface resolution.

**DuraForm GF / DuraForm ProX GF**

A glass-filled nylon engineering plastic with high stiffness, elevated temperature resistance, and isotropic properties.

**DuraForm HST Composite / DuraForm ProX HST Composite**

A fiber-reinforced material with an ideal mix of stiffness, strength and high temperature resistance.

**DuraForm ProX AF+**

Aluminum-filled nylon 12-based powder that produces stiff and rigid metallic appearing parts.

**DuraForm EX Black and Natural / DuraForm ProX EX BLK**

Impact-resistant thermoplastic with the toughness of injection-molded polypropylene (PP) and ABS.

**DuraForm FR1200 / DuraForm ProX FR1200**

A flame-retardant nylon 12 material that meets aerospace industry standards for flammability, smoke density and smoke toxicity.

**DuraForm TPU and DuraForm Flex**

Flexible materials with excellent memory and abrasion resistance.

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

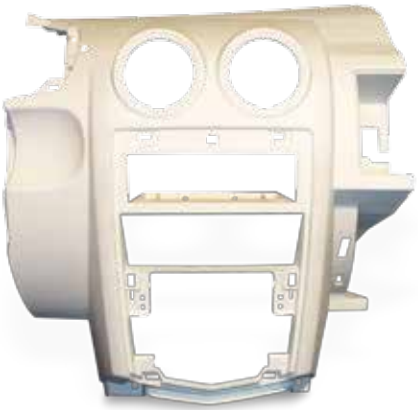
## SLS TECHNOLOGY FROM 3D SYSTEMS

SLS production 3D printers are the proven industry standard. Benefit from 3D Systems' experience with our global product support team, offering dedicated service and application engineers to meet your rigorous quality requirements at facilities around the world.

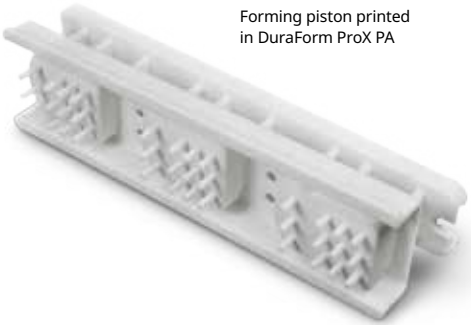
Complex ducting for optimized air flow printed in DuraForm EX Black

Electronic component printed in DuraForm ProX PA

| | ProX SLS 500 | sPro 60 HD-HS | sPro 140 | sPro 230 |
|---|---|---|---|---|
| Max build envelope capacity (X x Y x Z) | 15 x 13 x 18 in<br>(381 x 330 x 460 mm) | 15 x 13 x 18 in<br>(381 x 330 x 460 mm) | 22 x 22 x 18 in<br>(550 x 550 x 460 mm) | 22 x 22 x 30 in<br>(550 x 550 x 750 mm) |
| Build material | DuraForm ProX PA<br>DuraForm ProX GF<br>DuraForm ProX HST<br>NEW DuraForm ProX AF+<br>NEW DuraForm ProX EX BLK<br>NEW DuraForm ProX FR1200 | DuraForm PA<br>DuraForm GF<br>DuraForm EX<br>DuraForm HST<br>DuraForm TPU<br>DuraForm Flex<br>CastForm PS<br>NEW DuraForm FR1200 | DuraForm PA<br>DuraForm GF<br>DuraForm EX<br>DuraForm HST | DuraForm PA<br>DuraForm GF<br>DuraForm EX<br>DuraForm HST |
| Layer thickness range *(typical)* | 0.003 – 0.006 in<br>(0.08 – 0.15 mm)<br>*(0.004 in, 0.10 mm)* | 0.003 – 0.006 in<br>(0.08 – 0.15 mm)<br>*(0.004 in, 0.10 mm)* | 0.003 – 0.006 in<br>(0.08 – 0.15 mm)<br>*(0.004 in, 0.10 mm)* | 0.003 – 0.006 in<br>(0.08 – 0.15 mm)<br>*(0.004 in, 0.10 mm)* |
| Volume build rate | 1.8 l/hr | 1.8 l/hr | 3.0 l/hr | 3.0 l/hr |
| Powder recycling and handling | Fully automatic | Manual | Automatic | Automatic |



DuraForm PA Dashboard



Forming piston printed in DuraForm ProX PA

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.

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