



# Selective Laser Sintering Printers

Production thermoplastic parts with ProX<sup>®</sup> and sPro™ SLS printers



# Limitless Possibilities with Tool-less Manufacturing

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## ELIMINATE THE TIME AND EXPENSE OF TOOLING

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

## STREAMLINE YOUR WORKFLOW

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

## INCREASE MANUFACTURING AGILITY

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

## 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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## SLS APPLICATIONS INCLUDE:



### HOUSINGS

Manufactured in small to medium lot sizes, often bridging 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 within tight space envelopes 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

The 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 technology relied on for the toughest applications, year after year.

## 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<sup>®</sup> SLS 500

## The economical path to lot production

The newest generation in SLS printers, creating the smoothest surfaces and highest resolution thermoplastic parts.

### UNIFORM PROPERTIES

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

### UNPRECEDENTED MATERIAL EFFICIENCY

Of every kilogram of material you buy, up to 950 grams are turned into parts. Economical and environmentally friendly.

### STREAMLINE YOUR WORKFLOW

Automated production tools, powder handling and recycling functions, and mobile production controls allow you to accelerate your 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.



Manifold printed in DuraForm ProX PA



Housing for a laser sensor printed in DuraForm ProX PA



Wrist brace printed in DuraForm ProX PA

### 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 Parts

Select from a wide range of DuraForm® materials and match the material performance required for your specific application.

## **DuraForm ProX PA** *(Exclusive to the ProX SLS 500)*

Extra strong thermoplastic with superior mechanical properties and finest surface quality.

## **DuraForm ProX GF** *(Exclusive to the ProX SLS 500)*

Glass-filled material for excellent stiffness and thermal resistance.

## **DuraForm ProX HST Composite** *(Exclusive to the ProX SLS 500)*

Fiber-reinforced material with an ideal mix of stiffness, strength and resistance from thermal conditions.

## **DuraForm PA**

Durable engineering plastic with balanced mechanical properties and fine-feature surface resolution.

## **DuraForm EX Black/Natural**

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

## **DuraForm GF**

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

## **DuraForm TPU Elastomer**

Flexible material with excellent memory and abrasion resistance.

## **DuraForm HST Composite**

A fiber-reinforced thermoplastic with excellent stiffness, strength and temperature resistance.



Production running shoe with midsole printed in DuraForm TPU Elastomer



Complex ducting for optimized air flow printed in DuraForm EX Black

Electronic component printed in DuraForm ProX PA

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

## **SLS TECHNOLOGY FROM 3D SYSTEMS**

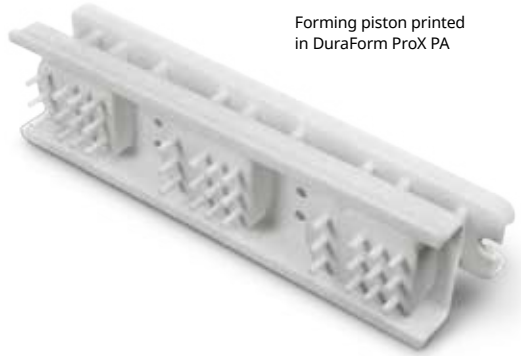
SLS production 3D printers are the proven industry standard. You benefit from 3D Systems' experience with our global product support team, offering dedicated service and application engineers to meet your rigorous quality requirements at facilities around the world.

**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 (381 x 330 x 460 mm)	15 x 13 x 18 in (381 x 330 x 460 mm)	22 x 22 x 18 in (550 x 550 x 460 mm)	22 x 22 x 30 in (550 x 550 x 750 mm)
Build material	DuraForm ProX PA DuraForm ProX GF DuraForm ProX HST	DuraForm PA DuraForm GF DuraForm EX DuraForm HST DuraForm TPU DuraForm Flex CastForm PS	DuraForm PA DuraForm GF DuraForm EX DuraForm HST	DuraForm PA DuraForm GF DuraForm EX DuraForm HST
Layer thickness range (typical)	0.003 – 0.006 in (0.08 – 0.15 mm) (0.004 in, 0.10 mm)	0.003 – 0.006 in (0.08 – 0.15 mm) (0.004 in, 0.10 mm)	0.003 – 0.006 in (0.08 – 0.15 mm) (0.004 in, 0.10 mm)	0.003 – 0.006 in (0.08 – 0.15 mm) (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

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