



## 2008 Rapid Prototyping/3D Printing Vendor Directory

January 2008

In this Special Report ConnectPress brings Community Members groundbreaking coverage on key players and issues in the rapid prototyping industry—including the latest trends and the future of rapid prototyping.

In the 2008 ConnectPress Rapid Prototyping Roundup we present a plethora of feature stories and case studies relating to the challenges and capabilities of the various rapid prototyping technologies.

This extensive report would not have been possible without all the contributor's that shared their expertise with ConnectPress and the financial support of this year's 2008 ConnectPress Rapid Prototyping Roundup sponsors: American Precision Prototyping, Dimension 3D Printing, 3D Systems, Wohlers Associates and 3D Prototype Design.

### **ConnectPress presents this outstanding selection of articles:**

*Wohlers Talk: Design and Manufacturing in the Future* By Terry Wohlers, Wohlers Associates - Terry Wohlers shares some statistics from Wohlers Report 2007, an industry study focusing on the advances in additive fabrication technology.

*Industries Benefiting from Additive Fabrication Technology* By Terry Wohlers - Terry Wohlers discusses how advances in additive fabrication will lead to a new wave of unimaginable design.

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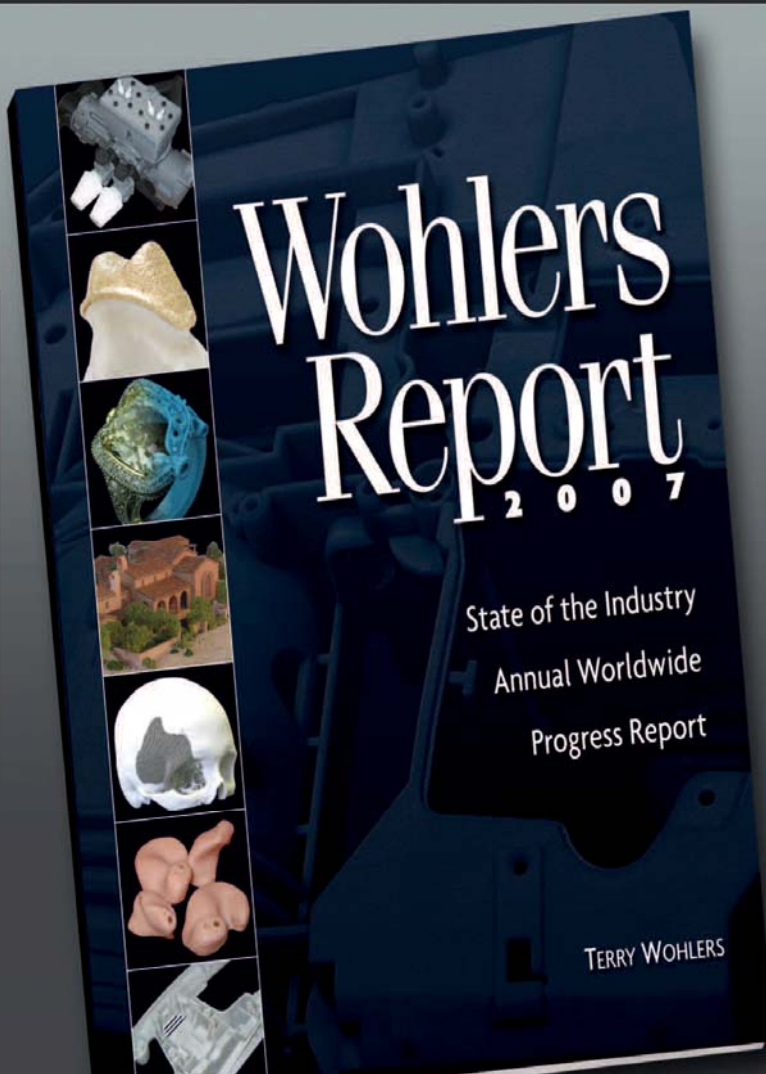
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**AND DID WE MENTION STRONGER?**



*Massachusetts Institute of Technology (MIT) Enhances Architectural Learning and Research Using a Z Corp. 3D Printer* By Z Corporation - learn how the MIT School of Architecture and Planning, Department of Architecture utilized Z Corporation's 3D printer to produce architectural models. Lawrence Sass, assistant professor in MIT's Department of Architecture fulfilled his research project in the late 1990's by completing a replication of famous architect Andrea Palladio's Italian Villas by constructing accurate scaled models. The case study also looks at how Sass encouraged MIT to use the Z Corporation printer to teach students how to use rapid prototyping techniques in a class called *Advanced Course in Digital Fabrication*.

*Differences in Rapid Prototyping and 3D Printing* By Rita Stange, ConnectPress Staff Writer - Learn about the differences between rapid prototyping and 3D printing in this interview with Dimension 3D Printing Vice President Jon Cobb where he discusses the two methods and also touches on the process of fused deposition modeling, trends in the industry and Dimension 3D Printings offerings. Plus, find out what Cobb thinks are five key factors that will fuel the market going forward.



An in-depth study on the advances in 3D printing, additive fabrication, and rapid manufacturing

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- New developments and business opportunities
- Industry growth estimates and forecasts
- Emerging industrial applications
- Research and development
- What the future holds



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Quickparts Talks SLA and Future of Rapid Prototyping By Rita Stange, ConnectPress Staff Writer - ConnectPress got with Quickparts for the inside scoop on rapid prototyping and the ins and outs of stereolithography (SLA). Get a crash course on Quickparts' services and more in this insightful interview with Quickparts' Vice President of Sales Patrick Hunter.

*American Precision Prototyping* By John Myers, ConnectPress Staff Writer – Jason Dickman, co-founder of American Precision Prototyping, explains the differences between stereolithography and selective laser sintering.

*Proto Labs* By John Myers, ConnectPress Staff Writer – A profile of Proto Labs who rapidly creates useable parts from 3D geometry.

*Faster Prototypes, Faster Sheet Metal* By John Myers, ConnectPress Staff Writer – An interview with Jay Jacobs, Rapid Sheet Metal president, who create prototypes in two weeks or less.

3

3-D prototype design inc



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PD&M: **Booth 3513** in the CAD/CAM & Rapid Prototyping Pavilion Hall C

AD&M: **Booth 501** in the CAD/CAM/RP Area

*ExtrudeHone Creates Metal Tools with MIT's 3DP Technology* By MIT - Metal parts for injection molding tooling inserts and for direct use have been built using MIT's patented 3DP process and placed into use. ExtrudeHone Corporation has licensed the 3DP technology for the fabrication of metal parts and tools. Read how this company's parts have been created in an increasingly diverse range of materials including stainless steel, tungsten and tungsten carbide. Printed parts are sintered for strength, then infiltrated with low melting point alloys to produce fully dense parts. The 3DP process is easily adaptable to a variety of materials systems, allowing the production of metallic/ceramic parts with novel compositions.

*What is 3D Printing and How Can it Help Me?* By Kirsten Fox, ConnectPress Senior Editor - This feature offers an industry outlook for rapid prototyping and 3D printing. Learn about the technology, techniques and trends. Many manufacturers and designers are bringing 3D printing in-house. The benefits of 3D printers for reducing design and turn-around time and improving product quality are high, allowing developers to validate design early. Also, it provides manufacturers with the flexibility for managing and prioritizing their own model production queues. In-house printing does have its drawbacks, leading many to outsource a lot of projects that demand precise results. Read why this exploding and dynamic field provides fast, relatively inexpensive prototypes.

*Cut from a Different Mold* By Kirsten Fox, ConnectPress Senior Editor - Here's a look at what rapid prototyping industry players are doing. Technology academic leader MIT's 3DP department develops 3D printing for the rapid and flexible production of prototype parts, end-use parts, and tools directly from a CAD model. Their cutting edge technology creates parts of any geometry, and out of any material, including ceramics, metals, polymers and composites. Furthermore, it can exercise local control over the material composition, microstructure, and surface texture. 3DP commercial licensees include ExtrudeHone, Soligen, TDK Corporation and Z Corporation.

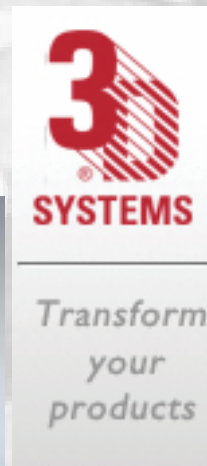
Soligen uses MIT-based DSPC (Direct Shell Production Casting) to produce the actual ceramic molds for metal castings directly from 3-D CAD designs. No tooling or patterns are required. DSPC is a patternless casting process developed at Soligen, Inc., which licenses MIT's 3DP technology for use in metal casting. DSPC machines produce the actual ceramic molds for metal casting.

This article also discusses how DSM Somos has been rapid prototyping materials since the late 1980's. Learn about Somos' first commercial stereolithography resin in 1992 to today's introduction of DMX-SL 100.

*Professional to the Core* By Kirsten Fox, ConnectPress Senior Editor - Pro CNC, a full-service precision CNC (computer numerical control) machining facility, performs production CNC milling and turning, assembly, design for manufacturing and quick-turn prototype machining. The fast growing Washington company, which also operates a British Columbia division, primarily serves the aerospace industry, but it also caters to medical and commercial industries. Read about this company's prototype capabilities.

*Custom Sports Car Benefits from FDM* By Materialise - Yoshiyuki Hayashi, a Japanese car collector, commissioned the design of a one-off sports car to Zagato's company, who turned to Materialise to assist in the building of the headlights. Read how Materialise used Fused Deposition Modeling (FDM) for headlight design. FDM was chosen for the durability of the material used, the stability of the mechanical properties over time and the quality of the part.

ConnectPress would like to thank



for their sponsorship of the 2008 ConnectPress Rapid Prototyping Roundup.

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Data provided on the following pages was compiled using submissions from participating companies. It is not exhaustive and does not include all the products and services available from each company. We have, however, attempted to include the major software solutions and services. ConnectPress, Ltd. cannot guarantee the accuracy of this data. We suggest you contact the participating companies for details, particularly to confirm technical specifications.

### 3-D Prototype Design Inc.

**Fully Functional and Testable Rapid Prototypes in Nylon or Rubber-Flex materials, also available in color using our newly developed process!**

3-D Prototype Design is a service bureau operating in-house SLS (Selective Laser Sintering) equipment, which allows us to keep your projects on site, on time, confidential and within our control.

Offering nylon as well as rubber-like material, our parts can be tested, evaluated and assessed without fear of damage. Producing living hinges, snap fit and working spring components are commonplace for us.

To request a copy of our FREE report '5 Things You Need To Know About Rapid Prototyping', receive a quote or obtain contact information, please visit [www.3dprototype.com](http://www.3dprototype.com).

### Advanced Design Concepts

Advanced Design Concepts (ADC) is a fully integrated engineering design and prototype development studio. A sample of ADC's services include: new product design and product refinement, reverse engineering and scanning; rapid prototyping, tool design, first article inspection, injection molding, finite element analysis (FEA), and Pro/ENGINEER consulting and training. Companies turn to ADC for one of four main reasons: capacity, speed, expertise, and innovation. Oftentimes ADC is selected for a project because our clients do not have the internal manpower (capacity), specific knowledge base required (expertise), cannot achieve a deadline (speed), or need a unique solution to a problem (innovation). ADC recently expanded its services by investing in the Objet 3D Printing System, a new pioneering technology which utilizes PolyJet Polymer Jetting. PolyJet technology offers accurate, clean, smooth and highly detailed 3-Dimensional models. With this system, ADC offers: 3D durable parts, a compressed design process and precise functional prototypes.

For more information visit: [www.adcinc1.com](http://www.adcinc1.com).

## American Precision Prototyping

**The APP Advantage** — American Precision Prototyping, LLC (APP) is the premier rapid prototyping and manufacturing facility in the Midwest. We set ourselves apart from other facilities by offering instant online quoting 24/7, complete project solutions from design to production using the latest materials and equipment in-house, providing unsurpassed customer service and offering our customers a 100% quality guarantee. As an approved 3D Systems Preferred Service Provider (PSP), we only use the latest additive manufacturing technologies and materials to deliver the highest quality parts to our customers.

**APP Services** — include 2D to 3D CAD conversion, Design Services, Standard and Hi-res Stereolithography (SLA), Selective Laser Sintering (SLS), Polyjet 3D Printing, Fused Deposition Modeling (FDM), Cast Urethanes, Rapid Metal Castings, CNC Machining (AS9100 certified) and Injection Molding.

**APP Materials** — We offer a full line of Accura SLA, Duraform SLS, FDM, Objet, Polyjet, and various casting and CNC materials.

**The APP Guarantee** — Our parts are backed with a 100% quality guarantee. If for any reason, you are unsatisfied with the quality of our product, we will do whatever it takes to make you a happy customer.

For more information visit: [www.approto.com](http://www.approto.com) or email [sales@approto.com](mailto:sales@approto.com) or call 918-266-1004.

## Arptech Pty. Ltd.

**Services:** 3D Printing, FDM, SLA, CNC Machining, Vacuum Casting & CAD services.

**Description:** Arptech provides one stop solution for all your prototyping needs. We are also specialized in short to medium run production jobs using CNC machining out of various grades of plastics and metal.

For more information visit: [www.arptech.com.au](http://www.arptech.com.au).

## C.ideas Inc.

Founded in 1998 and currently the largest independently owned FDM bureau in the U.S., C.ideas specializes in FDM (ABS and polycarbonate) as well as, Polyjet (rigid and elastomer) rapid prototyping and direct digital manufacturing.

At C.ideas, we realize that an engineer's needs change frequently, which is why we cater to processes and materials with characteristics such as strength, elasticity, RF friendly, high resolution, high temperature, large geometry or production "like" multiples.

Having produced the two largest sculptures to ever incorporate raw unaltered RP parts, it might be quite surprising to know that prototypes can be purchased for less than \$10. There are no minimums orders, C.ideas does not subscribe to holiday rates or rush charges and most jobs ship within one to three days.

With more than 17 in-house machines and 12 different materials to choose from, C.ideas continues to invest in a variety of technologies that compliment each other. We will go the extra mile to exceed your expectations with honest leadtimes and guaranteed satisfaction.

### Products

- Fourteen in-house FDM Machines; ABS and polycarbonate thermal plastics
- Eden 500v and 350v high resolution Polyjet (0.006" Z)
- 4 Rigid Acrylic Resins & 3 Elastomer; Including the "All New" Tango Plus
- Invision MJM SR200 acrylic for complex assemblies
- SLA 11120, 18420, DMX-SL 100 and NanoTool
- Finishing services and urethane castings
- STL repair, file conversion and engineering services
- Single piece parts as large as 23.9" x 19.9" x 23.9", sectioning available for larger parts
- Average one to three day leadtimes for Polyjet, FDM and MJM
- No minimum orders or rush charges. International shipping available
- Purchase orders, credit cards and Paypal accepted

For more information visit: [www.rapid3d.com](http://www.rapid3d.com).

## Delft Spline Systems

DeskProto is a 3D CAM software package for Rapid Prototyping. It's aimed at designers and model makers to quickly create models of new product designs, and at mold makers to easily CNC machine models and cavities based on STL data. Main advantages are the ease of use and the price: a small CNC milling machine combined with DeskProto is affordable: offering Desktop Prototyping. Advantages over additive RP are the free choice of materials, the superb surface quality and the availability of very large machines.

Main application areas of DeskProto are Concept Modeling (using physical models during the concept stage of the design process) and the creation of styling block models for presentation purposes. In some cases even manufacturing is possible: for instance wax models for jewelry (investment casting). The advantages of in-house RP are clear: you no longer have to wait a number of days, your prototype is ready within hours! The design process will clearly be accelerated.

For more information visit: [www.deskproto.com](http://www.deskproto.com).

## Dimension 3D Printing

**The Dimension Solution** — Functional 3D models, created on a Dimension 3D Printer enable the designer and all others on the design team to make better informed design decisions, resulting in fewer design changes, better product designs, lower production costs and lower product costs. Historically, businesses that have relied on RP parts have either used expensive, time consuming service bureaus or have utilized high-end RP systems that require dedicated operators, modified site requirements and a long learning curve. Today companies are turning to low cost 3D Printing systems that deliver quality parts, allowing the designer to iterate designs quickly, testing for form, fit and function.

**Dimension – The Affordable Solution** — Priced at \$18,900\*, Dimension can pay for itself faster than you think. If you send service bureaus one part a week, Dimension could pay for itself in under a year.

\*Manufacturers' world wide list price

**Dimension Materials** — Dimension 3D Printers generate durable models in ABS plastic. ABS is the most commonly used plastic in manufacturing today. ABS models can be drilled, tapped, sanded and painted. ABS is the material of choice by leading manufacturers and is a major reason why Dimension is the fastest selling, office-friendly machine of it's kind.

For more information visit: [www.dimensionprinting.com](http://www.dimensionprinting.com) or email [info@dimensionprinting.com](mailto:info@dimensionprinting.com).

## Eagle Design and Technology

Eagle Design & Technology, Inc. is located in Zeeland, MI. We are currently in our 14<sup>th</sup> year of serving in the rapid prototyping industry. We have many years of combined experience in most of the prototyping technologies. Eagle has been involved with countless unique projects ranging from concept design to production parts.

We have 2 SLA 7000 machines and run 5 different DSM SOMOS resins: 9420, 18420, 15120, 11122, and DMX-SL100. Eagle Design also has a large silicone molding and urethane casting department with both VPU and MCP casting systems to fit any project. We run many different urethane materials and can always find the most fitting material for each project. Our other capabilities include product design, CNC machining, injection mold tooling and running production parts.

For more information visit: [www.eagleddesign.com](http://www.eagleddesign.com).

## EMS

EMS provides product design and development, rapid prototyping, 3D scanning and reverse engineering services. With 5 in-house prototyping machines and 3 – 3D Scanners EMS can help you bring your ideas to life. Visit our web site to learn more and receive an instant price quote for rapid prototype models with no file upload or login require. Save 50% or more on your next prototype.

For more information visit: [www.ems-north.com](http://www.ems-north.com).

## EnvisionTEC

EnvisionTEC makes Rapid Prototyping and Manufacturing equipment, including hardware, software and materials. They are 4-5 times faster, with finer tolerance, and more materials, all of which are non-hazardous. Machines range in build envelopes of 4x3x4 inches to 25x22x25 inches. The Desktop version makes RP affordable for the professional in Micro, Medical, Dental and Bio-Technologies and jewelry production. The Perfactory allows the production of high volumes of individually designed hearing aids dental products such as crowns, caps and dentures, along with conventional RP.

Vanquish and Xede machines allow design verification and direct manufacturing to occur quickly with high surface quality. There are two to five moving parts requiring little maintenance. No expensive lasers to align or replace and no noxious chemicals requiring a special environment. Our patented process involves making thin images of an STL of the part. Each image is projected with a TI Digital Light Projector (DLP) through a lens onto a glass tray containing liquid photosensitive plastic. The light hardens the plastic to an upper plate, which is raised for the next exposure. As each image is exposed, the part builds until completed. The materials are waxy plastic for direct investment casting; acrylic, epoxy or ABS material for a functionally strong part, E-Shell FDA approved medical devices including clear, and an 85% filled material that sinters into a Zirconia dental or other ceramic. Excellent for straight, warp-free parts with threaded holes and fine details.

For more information visit: [www.envisiontec.com](http://www.envisiontec.com).

## EOS GmbH (Electro Optical Systems)

EOS, founded in 1989, is the world leading manufacturer of laser-sintering systems for rapid prototyping and manufacturing. EOS systems create prototypes, tools or mold inserts, and end-use parts from a variety of materials, including polymers and metals. The machines manufacture individual or batch parts fast, efficiently and cost-effectively, and directly from 3D CAD data, an approach which we call "e-Manufacturing." Our equipment is widely used in the aerospace, automotive, dental, medical, electronic, biopharmaceuticals, precision mechanics, optics, ACE, and consumer products industries.

Recent innovations include the EOSINT P 730 for plastics sintering and the EOSINT M 270 for Direct Metal Laser-Sintering (DMLS). The P 730 is an advanced version of the EOSINT P 700, the world's first double-laser system for laser-sintering of plastics. The P 730 offers a large build envelope, high productivity, fast building speed, and excellent part quality. The EOSINT M 270 combines a solid-state fiber laser, fine focusing optics, and a variable focus diameter to offer high productivity and quality and broad process control for metal products. The M 270 builds parts from bronze-based alloys, tool steel, stainless steel, cobalt-chromium, and titanium.

For more information, visit [www.eos.info](http://www.eos.info) or email in the US [jim.fendrick@eos.info](mailto:jim.fendrick@eos.info) or in Germany [info@eos.info](mailto:info@eos.info).

## Harvest Technologies Inc.

Harvest Technologies Inc. is a full-service, high-capacity rapid prototyping and direct digital manufacturing service provider that produces top quality functional prototypes, show models, casting patterns, rapid tooling and end-use production parts. Using 17 cutting edge SLS and SLA systems in-house, an excellent network of secondary process partners, and an experienced technical staff, Harvest Technologies can handle projects of any size and scope. Additionally, Harvest is certified under the AS9100 and ISO 9001:2000 quality management systems.

Let our friendly and professional staff provide you with a rapid quote on your next project!

For more information visit: [www.harvest-tech.com](http://www.harvest-tech.com) or email [harvest@harvest-tech.com](mailto:harvest@harvest-tech.com).

## Hi-Res 3D

Hi-Res 3D specializes in state of the art SLA and SLS parts build on new machines. We build parts on Viper and Viper PRO SLA machines and Hi-Q SLS machines only. We can ship same day and next day when in a rush. Our pricing is competitive and our quality is at the highest level of any SLA or SLS provider in the US. If you build intricate prototypes with tight tolerances we are the best partner you could have.

References are available so contact us if you would like to speak to some of our happy customers and hear what they have to say!

For more information visit: [www.hi-res3d.com](http://www.hi-res3d.com).

## Javelin 3D

Javelin 3D specializes in medical product rapid prototyping. We provide high-resolution SLA prototypes and short run production of urethane parts via RTV molding. Javelin is the authorized reseller of the Velocity2 software product for 3D reconstruction of anatomical features from CT and MR scans.

Javelin also supplies 3D anatomical models. Priced at only \$95 US, their Body Replica collection contains over 25 high-quality anatomical files.

For more information visit: [www.javelin3d.com](http://www.javelin3d.com).

## Materialise

**Materialise** provides software and data services to the global additive-manufacturing industry, as well as industrial services to Europe and the UK. In Belgium we have the largest RP service-bureau under one roof, and we've used our years of real-world experience to develop top-of-the-line software.

- **Magics RP** software is the most comprehensive software for fixing and editing STL files. It contains tools to convert many formats to STL, quickly repair STL errors, modify existing geometry, completely prepare build platforms, slice, add visual textures, and much more. A service bureau running at capacity will find that Magics RP pays for itself.
- **3-matic** software combines data from multiple sources: CAD, optical scans, STL data, and CAE meshes. This package can manipulate these geometries in an STL environment and includes full CAD functionality – without reverse engineering! It saves time when doing design changes, scan repair, and remeshing for RP or CAE applications, and also provides IGES export options.
- **Mimics** software allows segmentation and 3-D modeling from slice data, typically CT or MRI scans. Often used with technical CT scans (e.g. a fully-assembled transmission) or anatomical scans (e.g. a patient's skull), Mimics can create accurate STL and IGES models that include internal geometry unavailable by optical scanning. This package is often used for custom implant design, CAE, and RP applications.
- **Software Services** get you what you need quickly. Hand-off your project to us; take advantage of our considerable technologies and avoid learning new software.

For more information visit: [www.materialise.com](http://www.materialise.com).

## Medical Modeling

Medical Modeling is a world leader in the production of custom anatomical models which enhance patient care and device development activities on a daily basis. The company's long history with additive manufacturing techniques and advanced medical imaging allow for unparalleled accuracy and quality in physical anatomical modeling. In addition to its rapid prototyping capabilities the company also provides rapid manufacturing services utilizing Arcam's Electron Beam Melting technique in titanium alloy. Below is a list of currently employed materials and processes at Medical Modeling:

### Materials

**SLA** – Huntsman YC 9300\*, Huntsman SL 5170, Huntsman SL 7810\*\*, Somos 11120

**3DP** – Zp 131/Zb60

**EBM** – Titanium Alloy (Ti6Al4V) to meet ASTM F136, F1108, F1472 and other specifications

\* USP Class VI tested material that can be sterilized – translucent with two color capability.

\*\* USP Class VI tested material that can be sterilized – opaque white finish.

### Machine Capability

**SLA** – Parts up to 20"x20"x14" in multiple materials

**3DP** – Full color parts from the Z510 in sizes up to 10"x14"x8"

**EBM** – Fully dense, fully porous or hybrid parts in titanium alloy (Ti6Al4V) up to 8"x8"x8"

For more information visit: [www.medicalmodeling.com](http://www.medicalmodeling.com).

## Morris Technologies Inc.

Morris Technologies, Inc. (MTI) is a Rapid Prototyping, Product Design and Engineering firm located in Cincinnati, OH. Founded in 1994, MTI has grown to be one of the leaders in the RP/RM industry with over (100) associates in five facilities covering a broad range of capabilities including:

- Engineering and Design
- Rapid Prototyping
- Advanced CNC Machining
- Rapid Tooling and Injection Molding
- Urethane Reproductions

Most recently, MTI has established itself as the global leader in Additive Metal Fabrication in terms of capacity and experience with over (7) DMLS machines and extensive supporting equipment. MTI currently offers (4) alloys, including the super alloy Cobalt Chromium for the most demanding applications and environments. DMLS is rapidly changing the way many companies prototype and create complex metal geometry and MTI is well positioned to meet this ever-increasing demand. Along with MTI's sister company, Rapid Quality Manufacturing, we cover the full spectrum of a customer's product life cycle, from prototype, to short-run to full production.

For more information visit: [www.morrstech.com](http://www.morrstech.com).

## nPower Software

Power NURBS is the most important advance in 3D modeling in years. Power NURBS combines the power of Solids Modeling, with the accuracy of Surface Modeling, the intelligence of feature modeling, and the ease of use of Sub-D modeling. Tight integration with the 3ds Max tools provides the first complete solids and surfacing environment that is both parametric and fully animatable. Powered by IntegrityWare's SOLIDS++ modeling kernel Power NURBS seamlessly blends solids modeling with surface modeling for the highest degree of accuracy and the greatest flexibility.

### Power NURBS Features

- Associative editing
- High continuity surfaces
- Class A surface blending
- Tangency / curvature control
- 3-Rail & Helical sweeps
- Surface / solid fillets
- Intelligent sketching tool
- Design history view
- Surface analysis tools
- Trimming / sewing

For more information visit: [www.nPowerSoftware.com](http://www.nPowerSoftware.com).

## Quantum Leap Associates Inc.

Quantum Leap Associates, Inc. is the oldest Authorized Reseller for Z Corporation in the Southeast, having signed on with them in early 2001. We sell their complete line of 3D Printers, and also provide Installation, Training and Service Contracts on their equipment.

Since 2001, we have also used their Color 3D Printers to make models for our customers, on a service bureau basis. Applications include Industrial Design, Product Development, FEA Simulations, Architecture, GIS, Fine Art, Education and the Medical industries. Due to low overhead, our prices are usually considerably less than competing services, and our quality is world class.

We can accept your 3D data file in several different file formats, including STL, VRML, PLY, ZPR and 3DS. Credit cards are accepted.

For more information visit: [www.quantumleap.cc](http://www.quantumleap.cc).

## Quickparts

Quickparts is your single source for custom manufactured plastic and metal parts, from rapid prototypes and low-volume custom manufactured plastic to metal production parts.

Quickparts offers instant online quotes for the rapid prototyping of:

- Stereolithography (SLA)
- Selective Laser Sintering (SLS)
- Fused Deposition Modeling (FDM)
- Cast Urethanes

Quickparts also offers offline quotes for:

- Injection Mold Tooling and Parts
- CNC Machined Parts
- Sheet Metal Prototypes

### Why Choose Quickparts?

- Instant online quotes generated in seconds not days provided by the patented QuickQuote software
- The best lead times in the industry
- Next Day ship options for Stereolithography (SLA) and Selective Laser Sintering (SLS)
- The largest offering of processes and materials
- The Quickparts store is always open, 24x7
- Advanced manufacturing technologies
- Quick and easy quoting and buying
- ISO 9001:2000 certified
- ITAR certified

### The Quickparts Advantage

Quickparts offers tools to aid in the product design process.

Quickparts tools include:

- The Material Advisor: designed to help the consumer decide which rapid prototyping material best meets their needs and provides ability to search materials based on a wide range of options.
- Rapid prototyping material sample kit allows customers to touch, feel and compare standard resins and finishes.

For more information visit: [www.quickparts.com](http://www.quickparts.com).

## Stratasys

Stratasys manufactures rapid prototyping and direct digital manufacturing systems that employ proprietary FDM technology. The FDM process manufactures real parts direct from digital data in a variety of production-grade thermoplastics, such as ABS, Polycarbonate, PPSF and other blends, so they can be either functionally tested or installed for end use. Because thermoplastics are stable, dimensional accuracy is fixed, which differs from many competitive processes that produce parts that can lose tolerance due to environmental factors and exposure. Stratasys also is the exclusive North American distributor of Arcam metal prototyping and manufacturing systems.

For more information visit: [www.stratasys.com](http://www.stratasys.com).

## Z Corp.

Z Corporation develops, manufactures, and markets the world's fastest 3D printers - machines that produce handheld models quickly, easily, and inexpensively from computer-aided design ("CAD") and other digital data - and the world's most portable 3D scanners.

Z Corp.'s 3D printers are used by companies to make prototypes ranging from toys for market feedback to fan blades for functional testing. In the same way that conventional desktop printers provide computer users with a paper output of their documents, 3D printers provide 3D CAD users a physical prototype of real world objects such as a mobile phone, an engine manifold, or a camera.

Z Corporation's straightforward product interface provides users a means to automatically build appearance prototypes from their 3D CAD designs quickly and inexpensively compared to alternative costly and labor-intensive methods. For example, a mobile phone design can be turned from a screen image into a prototype in less than an hour for less than \$10. By using appearance prototypes early in the product development cycle, design engineers can receive critical feedback early in the design process. Z Corporation prototypes confirm market acceptance of new designs before the production process even begins, eliminating costly last-minute changes and enabling companies to be the first to market with their products.

The Company, through over 180 distributors, currently sells its products globally into a wide range of industries, including manufacturing, architecture, education, geospatial industries, health care, and entertainment. The Company has shipped more than 3,000 3D printers to customers such as Sony, Fisher-Price, Adidas, Canon, Kodak, Clorox, NASA, Lockheed Martin, Northrop Grumman, BMW, Porsche, United Technologies, Ford, Daimler Chrysler, Harvard, MIT and Yale.

For more information visit: [www.zcorp.com](http://www.zcorp.com).

### **For more Rapid Prototyping products and services visit:**

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[www.clinkenbeard.com](http://www.clinkenbeard.com), [www.conceptual-reality.com](http://www.conceptual-reality.com), [www.cubictchnologies.com](http://www.cubictchnologies.com),  
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[www.finelineprototyping.com](http://www.finelineprototyping.com), [FastPlasticParts.com](http://FastPlasticParts.com), [www.lqmmmodel.com](http://www.lqmmmodel.com),  
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