



**Forgione Engineering offers New Product Development, Design Consultation and Full Service Design and Manufacturing. We utilize the most advanced technologies and collaboration tools to fulfill your requirements, even when they change, with unparalleled responsiveness.**

Forgione Engineering Inc., Est. 2008





**MANAGEMENT SYSTEMS AND EFFICIENCY**

Forgione Engineering has been operating using remote collaborative techniques since 2008 when we first started designing machinery. Since then 8 years have passed, and we have reinvested in our IT and Software systems, as well as other systems that allow us to focus on innovation, rather than overhead activities. Our timekeeping, bookkeeping and billing is synchronized and automated, further reducing overhead. We currently operate paperless, our mail is scanned and automatically sorted into a virtual file system that is also cloud based and

collaborative. We have triple redundancy for data backups and revision control, with an almost instantaneous Disaster Recover time. We use a hardware VPN and License Server allowing our engineers to check out and use software licenses from anywhere in the world, limiting downtime, or problems with access to appropriate resources. We have machinery that allows us to produce certain products in-house for faster turnaround times, and lower costs to the client. Our goal is efficiency, and by being efficient, we save our clients time, money, and headaches.

**CAPABILITIES**

Forgione Engineering is focused on results. We add value through innovative design and product development. We have longstanding relationships with local, large domestic, and foreign manufacturers to provide prototypes and high volume production.

**SAFETY**

Safety is a culture and we pride ourselves on doing it the safe way the first time. Our shop has a supply of PPE available for task specific use: hearing, eye, hand, and face protection. We also have a hard-plumbed emergency eyewash station in the shop, as well as supplemental eyewash stations in every room. A first aid kit is fully stocked.

**QUALITY MANAGEMENT SYSTEMS**

6S Workplace Organization, standard use of ECN (Engineering Change Notice), Job Traveler, and NCR (Non-Conformance Report), Project Specification Sheets. We include notes on our Purchase Orders specifying “No Counterfeit Parts will be Accepted” and “All incoming parts and materials will be inspected to specification and drawing requirements”

Non-Conforming parts are moved to a non-conforming parts rack. We deliver on-cost, on-schedule, and per specifications and requirements. We specialize in hard to design or manufacture electrical enclosures, and the use of helicoils in aluminum & plastic parts and assemblies.

**INSURANCE**

Forgione Engineering carries General Liability, Professional Liability, and Product Liability insurance policies. All employees are covered by worker’s compensation insurance as well.

Matteo Forgione is a Licensed and Registered Professional Engineer in the Commonwealth of Massachusetts.

## CURRENT CLIENTS



### **ETA DEVICES**

Cambridge, MA

RF and thermal enclosures for Samsung, Google, Nokia

### **OASIS, INC.**

Lexington, MA

DoD, underwater and airborne acoustics, noise control technologies, structural acoustics, and instrumentation and data acquisition systems.

### **INFRASTRUCTURE, LTD.**

Billerica, MA

Projects for City of Cambridge, Logan Airport, Harvard, MIT, VA Hospital, Hanscom AFB, Liberty Utilities and More.

### **HUB FOUNDATION CO., INC.**

Chelmsford, MA

Projects for high rise and bridge foundations

### **ASSABET MACK SERVICES**

Shirley, MA

Quarry rock crusher refurbishing, truck parts, trailer parts, repair, obsolete parts replacement

### **AMBROSE HOMES**

Wellfleet, MA

Expert witness, renderings, custom drilling and excavating equipment

### **COLDSTASH**

West Greenwich, RI

Full service design, development, and production implementation. New IVF storage systems, Patented IATA Shipping systems

### **CERTIFIED WELDING AND FABRICATION**

Billerica, MA

Heavy equipment design and fabrication

### **UNIVERSITY OF MASSACHUSETTS, LOWELL**

Lowell, MA

Research and Development support

### **DIROCCO WELDING, INC.**

Billerica, MA

Heavy Civil and Structural Welding

### **SHAW WELDING**

Billerica, MA

Design and Shop Drawings for Misc Metals and Structural Steel

**CASE STUDIES**



**COLDSTASH  
VITROSTASH**

Development of a new storage system to work within the industry standard storage containers yielding nearly double the storage capacity of cryopreserved embryos. The system is a cost effective way for labs to increase capacity within their existing space and infrastructure.

**CLIENT**

Coldstash - Leader in custom cryopreservation & shipping solutions

**PROBLEM**

Increase capacity in laboratories for storage or embryos for IVF

**SOLUTION**

Work with leading scientists and technicians in the IVF space to develop a user friendly high capacity system to work within current storage units (dewars)

**PROJECT METRICS**

The project was a success and is currently being sold and distributed worldwide to IVF labs

**ETA DEVICES  
IFR ENCLOSURES**

Time sensitive design and production of five enclosures, each holding three PC boards at different elevations with floating rail mount systems and a custom heat sink for the high power components. Design was completed using DXF files of PC Boards and over 30 documents detailing through-wall components and board competent dictating enclosure constraints and cooling requirements. Photorealistic renderings were generated for meetings before the first enclosures were delivered.



**CLIENT**

ETA Devices - Breakthrough performance power amplifiers for cellular and wifi applications

**PROBLEM**

High stakes design and production for board meetings and ETA client testing

**SOLUTION**

The project was accepted, designed, and enclosed manufactured in a time frame of three weeks.

**PROJECT METRICS**

The project was a success, on time, on-budget, and allowed the client to move forward with their development of new products and client relations.

## SOFTWARE & IN-HOUSE EQUIPMENT

### SOLIDWORKS 2015

- Multiple Standard and Professional Seats
- Standard and Pro Photorealistic Product Renderings

### IN-HOUSE EQUIPMENT

- Mark Two Industrial Strength 3D Printer
- Draftsight
- 36" Plotter
- 3d Scanner
- 55" Conference Monitor
- FDM 3d Printer  
(Dual Head - ABS, Nylon, HIPS, PLA)
- Milling Machine
- Hardinge DSM-59 Turret Lathe  
with VFD and all production tooling
- EMCO CNC Lathe
- 5'x5' CNC Plasma and Flame Cutting Table  
(SS/AL up to 1", Steel up to 3" thick)
- Mini-Tapper Precision Tapping Device
- Helicoil kits
- Drill Press (1/2" Chuck)
- 8" Throatless Shear
- Jet 6" Band Saw
- Portable Band Saw
- 8" Circular Cold Saw
- Diacro 12T Hydraulic Press Brake  
with Micrometer Back gauge & Custom Tooling
- 2 Ton Flywheel Punch Press  
for Stamping/Punching
- 3/4 Ton Automatic Pneumatic  
Assembly Punch Press
- Lincoln 185 Tig/Stick Welder
- Miller 211 Autoset Mig Welder
- Thermal Arc s90 Portable Tig Welder
- Spot Welder
- Handheld Plasma Cutter
- Oxy-Acetylene Torch
- 24" Box Pan Brake
- 30" 20 gauge Press Brake  
with Custom Micro Tooling
- 20 Ton Hydraulic Press
- 1/2 Ton Arbor Press
- Parts Finishing  
(Tumblers, Sanders, Polishers)

- Typical Machine Shop Inspection Tools  
(Height Gauges, Micrometers, Surface Plates)
- Ultrasonic Parts Cleaner
- RO and Deionized Water Generator
- Woodworking Tools for Custom Pallets,  
Crating, and Chipping
- Pneumatic Rivet Gun
- Air Tools (Drills, Impact up to 3/4 Drive)

### LOCAL SOURCES WITH PRIORITY SERVICE

- Waterjet Cutting
- Production and Precision CNC Machining
- Laser Cutting
- Plastics Fabrication
- Structural Fabrication

### IN-HOUSE ELECTRONICS/LAB:

- Oscilloscope
- Dual Voltage +/-30VDC Power Supply
- 12 VDC Power Supply
- Benchtop Multimeter
- Resistors, Transistors, Capacitors, OP AMPS,  
and Microcontrollers for Rapid Electronic  
Prototyping

### STOCK ITEMS

- Stainless Steel Metric and Standard Fasteners  
and Hardware (Down to size 0-80 and M2)
- Din Rail, Terminal Blocks,  
and Panel Building Components
- O-Rings
- E-Clips
- Dowel Pins
- Roll Pins
- Springs
- Riv-Nuts
- Snap Rings
- Delin Round Stock
- Aluminum Round Stock
- Peek Round Stock
- Stainless, Steel, Aluminum  
Plate and Misc Materials

## INDUSTRIAL STRENGTH 3D PRINTER

Photo courtesy of MarkForged



In line with our dedication to cutting edge technology and equipment, Forgione Engineering has acquired the revolutionary Mark Two Industrial Strength 3D Printer. This machine is not just a prototyping tool, but a manufacturing device that enables our engineers to produce complex parts for end-use. It ensures a more streamlined workflow and reduces time and production costs considerably. Parts can be printed and delivered within a few business days or faster for emergency situations. Complex geometry, embedded metal tabs, structures, pins, threaded bushings, or RFID chips can all be accomplished using this tool and our engineering expertise.



### HIGH-STRENGTH PRODUCTS

By reinforcing your parts with composite fiber while 3D printing them, The Mark Two achieves unparalleled strength, stiffness and durability in its printed parts.



### RANGE OF MATERIALS

In addition to printing Nylon, the Mark Two prints materials that no other 3D printer can, like Carbon Fiber, Fiberglass, Kevlar & Onyx.



### PRECISION DESIGN

The Mark Two print bed clicks into place with 10 micron accuracy and can print objects up to 12.6" x 5.2" x 6.1" large.

## THE MARK TWO 3D PRINTER

From prototyping, creating tooling and fixtures, to producing end-use parts for industries including automotive and aerospace, the Mark Two Industrial Strength 3D Printer utilizes the most advanced technology and materials...

### Carbon Fiber

Carbon fiber has the highest strength to weight as well as the highest thermal conductivity. Perfect for applications requiring the greatest possible stiffness and strength.

### HSHT Fiberglass

High Strength, High Temperature (HSHT) Fiberglass is a material uniquely designed for users who need strong parts in higher temperature environments (over 105°C (221°F), with a heat deflection point of 150°C (302°F)).

### Fiberglass

Fiberglass is the most cost-effective material. It's as strong as Carbon Fiber, but 40% as stiff, and 2X the weight. Suited to everyday applications where you need strong parts.

### Kevlar

Kevlar has the best abrasion resistance and is our most flexible material. For when you need parts that are durable and resistant to impact.

### Onyx

Onyx is a step up from other 3D printing plastics. Combining nylon with micro-carbon fibers, it's not only tougher than other 3D printing plastics— it's also stiffer, more heat tolerant, and more dimensionally stable.

LEARN MORE: [www.markforged.com](http://www.markforged.com)