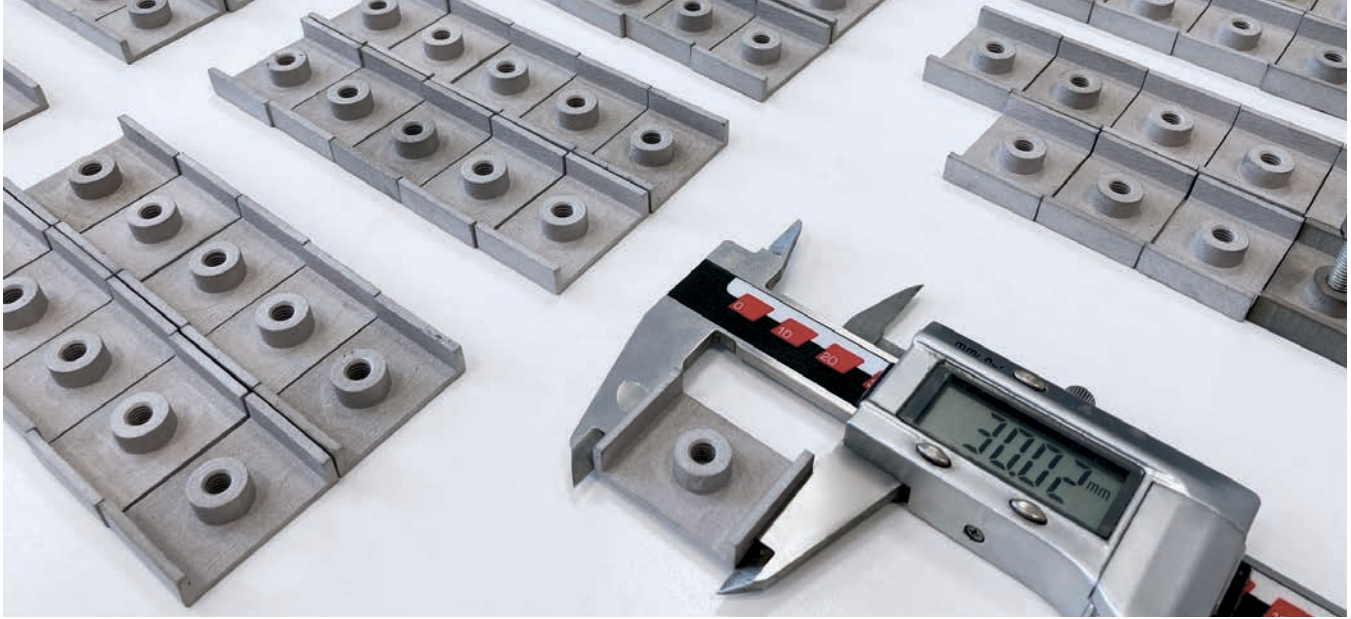


Serial production of metal fixtures for luxury yacht cupboard handles with Shop System™

The binder jetting method results in much faster production, better part quality, and is more cost-effective than conventional manufacturing





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Desktop Metal innovative binder jetting technology delivers the most reliable accuracy in metal 3D printing

Lino3D

Partner
Lino3D

Headquarters
Athens, Greece

Products
Distributor of 3D printing solutions

Services
Fabrication of dental and medical applications, prototypes, and end use parts

Customer Spectrum
Manufacturing, dental, medical, consumer goods, automotive, aerospace, and environmental

Website
www.lino3d.com

Challenges

Lino3D is a 3D printing lab headquartered in Athens, Greece, which distributes additive manufacturing solutions and provides a wide array of 3D printing services.

One of Lino3D's clients, a local company that rents and sells luxury yachts, requested Lino3D produce metal fixtures for the yacht cupboard handles. The client previously ordered the metal fixtures from a manufacturing company in China. However, the client decided to no longer order the parts from a supplier abroad due to two big problems: Long delivery times and poor part quality.

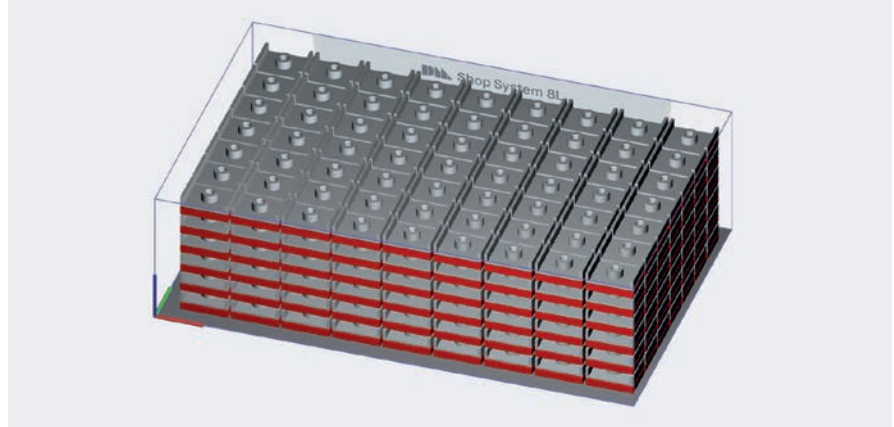
The long delivery time was often caused by logistics problems with customs as the parts needed to be shipped from China to Greece. Whereas the poor quality of the fixtures was presumably due to the conventional milling machine that the manufacturer used in production. With the milling machine, the size of the milled fixtures turned out to be bigger than the required M4 or M5 part size.

Due to the high demand for dimensional accuracy and fast delivery of such metal fixtures, as well as Lino3D's additive manufacturing competency, the client decided to trust Lino3D with fabricating the metal fixtures.

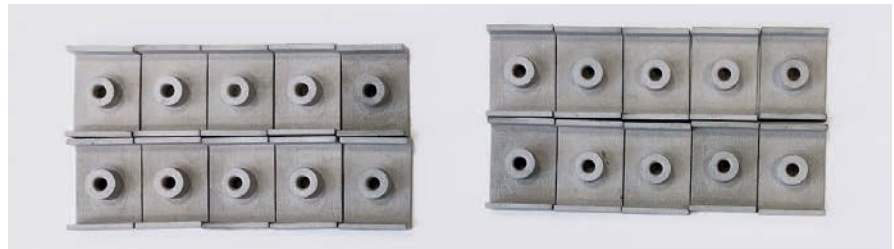
Solution

As Lino3D owns several additive manufacturing technologies, they knew right away that the Desktop Metal Shop System™ was the perfect solution to solve its client's problems. The Shop System is a high-speed and high-resolution binder jetting system equipped with a drying oven, powder station, furnace, and Live Sinter software™, enabling Lino3D to manufacture the metal fixtures using a 17-4 PH stainless steel with unparalleled speed and high quality.

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Shop System batch of part
for serial production



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3D-printed metal fixtures made
of 17-4 PH stainless steel



“Binder jetting is the most efficient technology and a fast method to print small to relatively large parts with good accuracy. If we used the traditional manufacturing method to produce small parts, the material volume required would be much greater than the material needed in the binder jetting method. With binder jetting, we only needed a few grams of metal powder for the same parts. An important point which makes binder jetting cost-effective.”

Michalis Bratsolias, Technical Consultant on 3D Printing and Metrology Systems at Lino3D

CHARACTERISTICS

Workpiece

Metal fixtures for luxury yacht cupboard handles

Size of the workpiece

30.0 mm × 22.2 mm × 6.80 mm

Industry

Luxury goods

TRADITIONAL PROCEDURE

The metal fixtures were produced with a CNC milling machine in China

Lead Time

Unreliable and varied, from weeks to months

DESKTOP METAL AM PROCEDURE

Print Material

17-4 PH stainless steel

Print Volume

100 parts per printing process
Maximum capacity: 378 parts

Each production cycle includes: Preparation with Live Sinter software, powder conditioning; printing on the Shop System, drying in a crosslink oven, depowdering, and sintering in the Desktop Metal Furnace.

Lead Time

Around 1 working week from printing to shipment of 200 parts



The metal fixtures are used for luxury yacht cupboard handles in Greece

Highlights

Rapid manufacturing process. Lino3D reported that producing the metal fixtures using the AM process is really fast. 100 parts of M4 or M5 part size are printed per batch. To accelerate the production process, Lino3D prints and dries another 100 parts (the second batch) while sintering the 100 parts from the first batch. With this process, Lino3D can deliver 200 parts to its client after only one working week.

High tolerance achieved. Measured with a digital caliper, the outer dimensions of the printed parts are 100% accurate. As for the M4 thread, a thread cutter is used to correct the thread dimension, an unavoidable process for this part size.

Cost-effective. The price per printed metal fixture is €9, which is nearly as cheap as the price of the metal fixtures imported from China. However, the quality of the binder jet 3D printed metal fixtures is vastly improved.

Supply chain issues solved. Thanks to the Shop System, Lino3D's client no longer has to deal with the logistics problems and delays with Chinese and Greece customs.

Sustainable and localized manufacturing. The metal fixtures for the luxury yacht cupboard handles are now made in the client's home country, Greece, by a local manufacturer. International shipments of the parts are no longer necessary, reducing the products' overall carbon footprint.

Lino3D

About Lino3D

Lino3D is a newly founded 3D printing lab which expertise in all up-to-date kinds of additive manufacturing technology. With its specialized personnel and fully equipped facilities, the company develops and distributes integrated printing solutions consisting of equipment, applications, consumables and services to customers and professionals in the 3D printing market, focusing on innovative technologies and new materials. Its solutions incorporate advanced and innovative technologies, with unique characteristics such as high quality, durability, attention to detail and reliability. For these products, the company also offers relevant consumables (resins, spare parts).

Lino3D is a part of the LinoGroup S.A. The LinoGroup consists of systems integrator's & engineering specialists who work with world leaders in each field of activity. The Group is specialized in software development for traveling communication industries and printing technologies in 2D & 3D applications.



About Desktop Metal Inc.

Desktop Metal (NYSE:DM) is driving Additive Manufacturing 2.0, a new era of on-demand, digital mass production of industrial, medical, and consumer products. Our innovative 3D printers, materials, and software deliver the speed, cost, and part quality required for this transformation. We're the original inventors and world leaders of the 3D printing methods we believe will empower this shift, binder jetting and digital light processing. Today, our systems print metal, polymer, sand and other ceramics, as well as foam and recycled wood. Manufacturers use our technology worldwide to save time and money, reduce waste, increase flexibility, and produce designs that solve the world's toughest problems and enable once-impossible innovations. Learn more about Desktop Metal and our #TeamDM brands at www.desktopmetal.com