LET’S CHANGE THE WAY THINGS ARE MADE

Impossible Objects

Company Introduction

February 2025

3D printing is great, but it’s just too slow.

3D printing has revolutionized prototyping

And has incredible potential benefits for manufacturing

Promises supply chain reduction, no tooling, serial customization, part consolidation…

Traditional 3D printing can’t make parts fast enough for volume manufacturing

We print at real manufacturing speeds – no one else comes close

We can 3D print this part **every 10 seconds… today** (others can take hours)

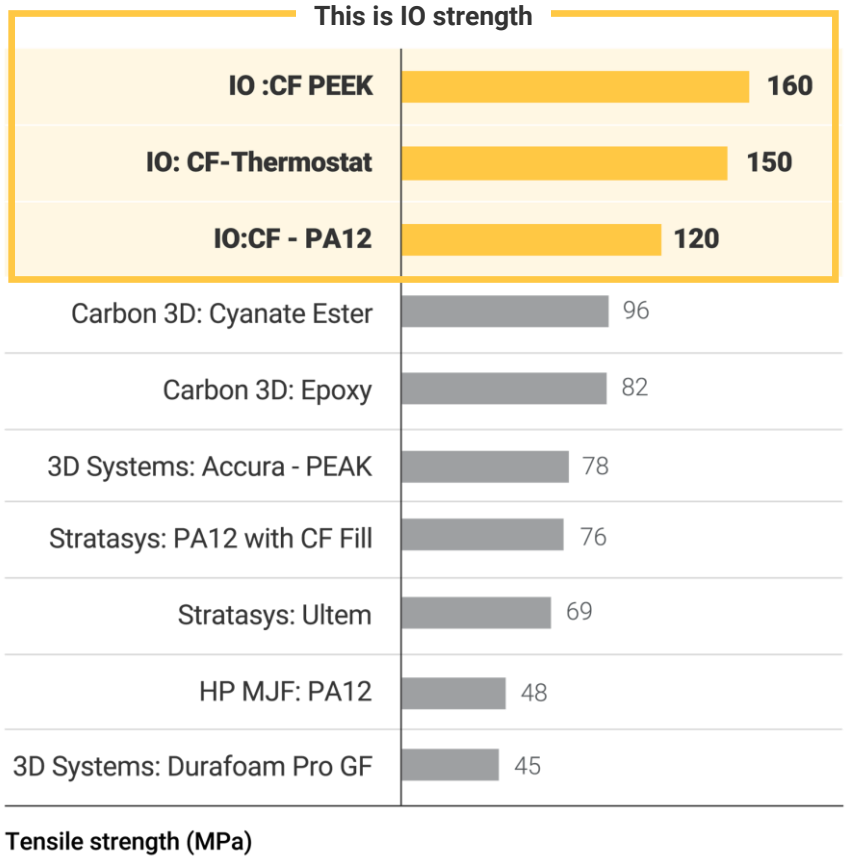
This means we are **the only ones** delivering a **quantum leap in throughput** that can keep up with **volume production**

We are finally bringing the value of 3D printing to real manufacturing

* 4 seconds to print this part targeted for 2027

Blazing speed and industry-leading properties and price point

Leading material properties…



…and competitive in manufacturing

8 cm x 5 cm x 0.6 cm part

FAST

One every 10 seconds*

INEXPENSIVE

$3.86 for Fiberglass-Nylon (qty 1)
$6.26 for Carbon fiber – PEEK (qty 1)

(Fully burdened cost)

*IO currently printing at this throughput; target printing throughput in 2027 for this part is less than 4 seconds.
N.B.: Additional Air Force-funded R&D has achieved tensile strengths >600 MPa (4x stronger than today)

We invented a new 3D printing process designed for speed

BENEFITS

Not just speed – we're printing real parts

- Industrial production-grade materials
- Traditional manufacturing-like costs
- 30+ granted patents

Comparable to strength-to-weight of aluminum*

50-micron (0.002 inch) layers produce fine details

* Additional Air Force-funded work has also achieved tensile strengths greater than 600 MPa in our lab (4x stronger than today)

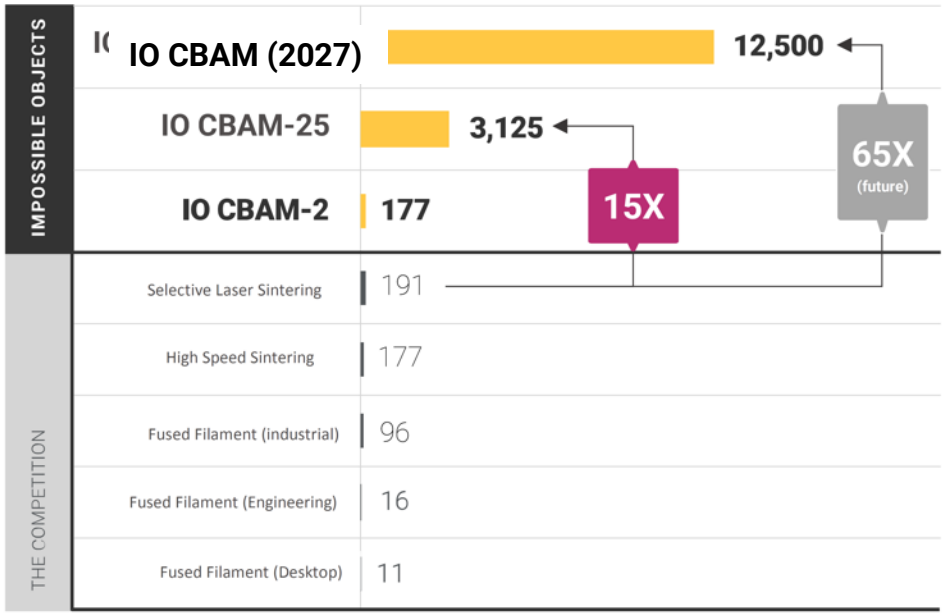
This quadcopter chassis requires a lightweight structure with complex geometry

These geometries and undercuts are not possible using injection molding

Highest temperature performance materials with melting point at 650°F

One of the best chemical resistance profiles found in industry, anywhere

Printing at previously unimaginable speed



cm^3/hour **finished** part throughput*

* Productivity numbers account for real-world packing density and machine uptime. Raw print speed for IO CBAM-25 is 12,000 cm^3/hour and 48,000 cm^3/hour for IO 2027

Impossible Objects

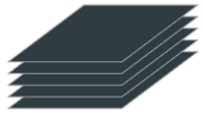
WE’RE MAKING THE WORLD. FASTER.

CBAM 25 process video

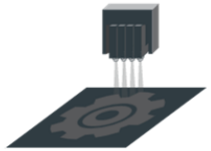
Fastest Industrial 3D Printing | CBAM-25 by Impossible Objects

Our new-to-the-world patent-protected CBAM process is driving the speed breakthrough

STEP 1 PRINTING PROCESS



Long-fiber sheets of carbon or fiberglass are fed into the printer.

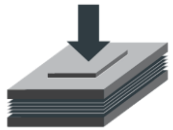


Using inkjet technology, bitmaps of CAD slices are printed onto the fiber sheets.

Polymer powder is applied to the fiber sheet, adhering to the printing fluid.

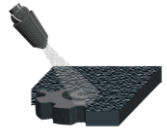
Removing excess powder leaves behind powder in the shape of the bitmap. The process repeats for all layers.

STEP 2 HEAT AND PRESS



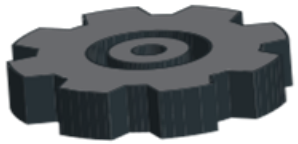
Sheets are stacked, heated to the polymer's melting point, and compressed to the designed height.

STEP 3 MATERIAL REMOVAL



Un-bonded portions of sheet fibers are removed, revealing the final part.

FINISHED PRODUCT



High performance composite parts
STRONGER, LIGHTER, TOUGHER

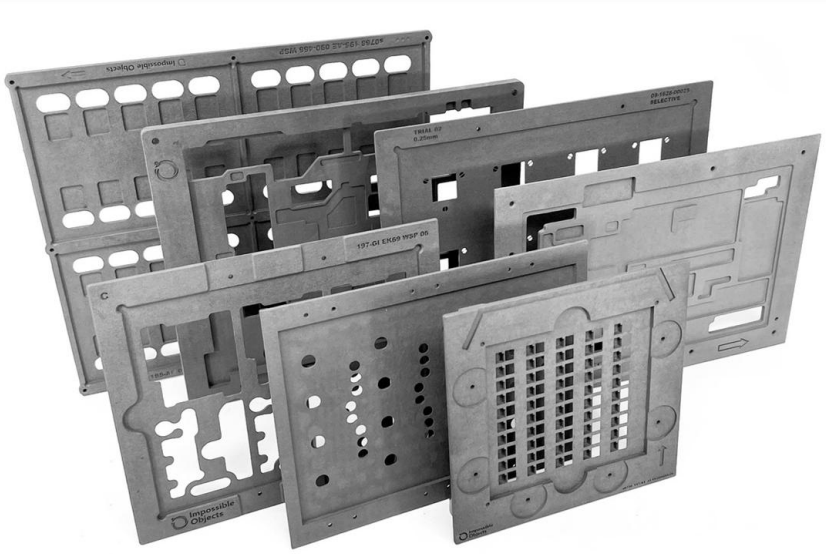
30+ U.S. Patents Issued to Date

Our CBAM process uses tech that builds parts 65+ times faster than the competition.

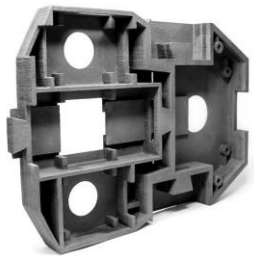
Watch the Printing Process in Action

Market Case Studies

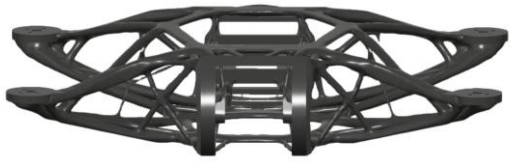
Tooling



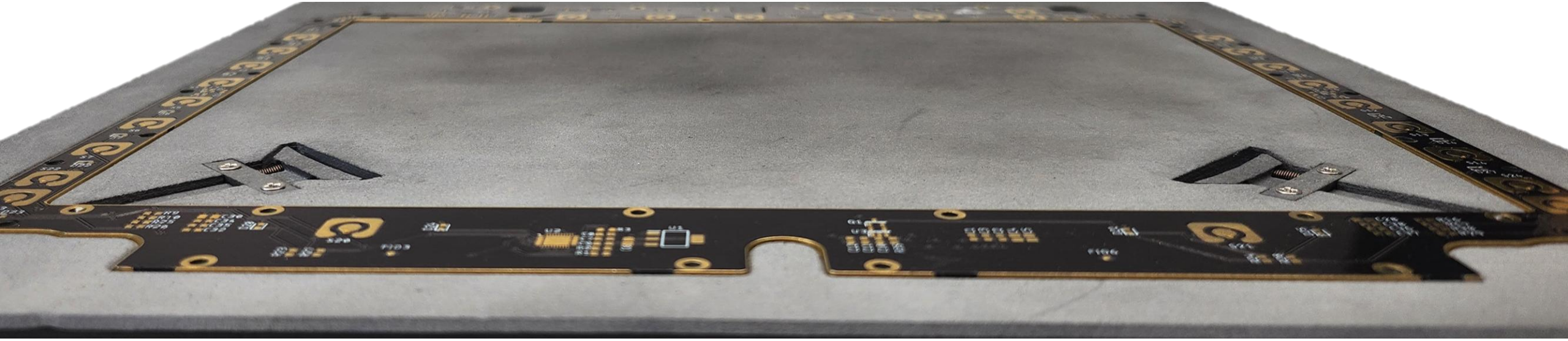
Drones



CNC Machining



Market application: Electronics tooling



MARKET SIZE

~$5B

COMPETITIVENESS

20-50% cost advantage*

PRODUCTION RATE

One 18”x18” tool every 5 minutes

* 20% cost advantage compared to the simplest (least expensive) pallets in the lowest-cost geographies and >60% cost advantaged for complex and/or Western geographies.

Market application: CNC Machining

We can print one of these bell cranks every 9 seconds. That's **this set of 30 in under 5 minutes.**

ADDRESSABLE MARKET SIZE

$100B+
~$4.5B* in functional prototyping alone

COMPETITIVENESS

20-50% cost advantage*

Example Production Rate

1 every 9 seconds

* Typical for eligible parts. Parts must fit in build block and be made from typical aluminum, polymer or fiber filled materials.

Market application: drones

MARKET SIZE*

$23B total
~ $3B addressable

COMPETITIVENESS

Lighter, stronger, more configurable, better logistically, more cost effective

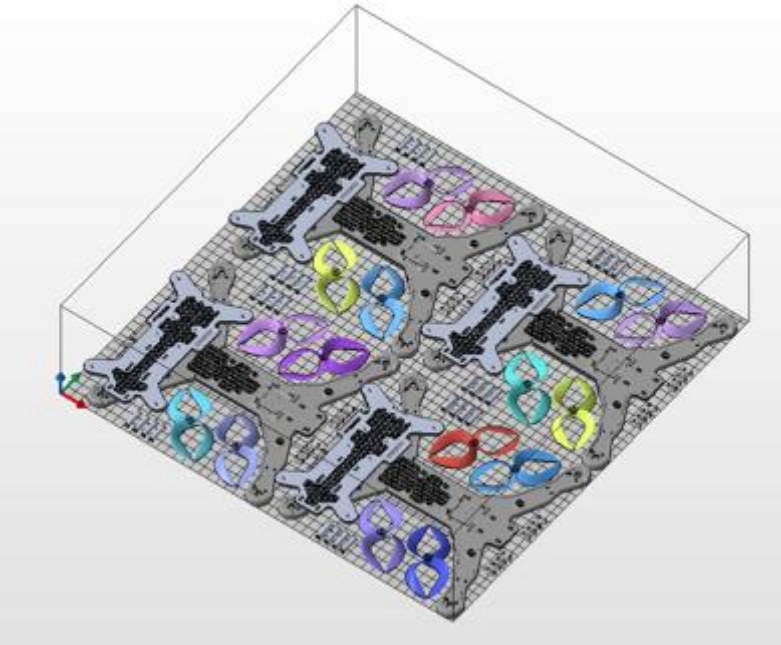
Production Rate

1 Machine can produce 5,000 drones per month

* Addressable market sizing reflects % of drone cost in mechanical components as well as drone size

Unmanned systems

Case Study -Drone Manufacturing



Print time: 8.42 min (134 layers)
Heat time: 240 minutes
Press time: 2 minutes + 150 minutes hours cooling
Removal time: 30 minutes

Total number of Drones: 4 drones made from 80 parts

One CBAM 25 work cell can produce 5,000 drones per month

CBAM-25 work cell equipment

CBAM-25

AUTOMATED HEATED PRESS

AUTOMATED REMOVAL STATION

TECHNOLOGY	Composite Based Additive Manufacturing (CBAM)
MAX BUILD VOLUME	18 X 17.7 X 4 inches (457 x 449 x 101 mm)
PRODUCTION SPEED	11,800cm³ per hour 16 Layers per minute
POST PROCESSING	Heating, Pressing & Auto/ Manual Support Removal
SUPPORT	No support material No restriction on build angles
COMPOSITE MATERIALS	Carbon Fiber or Fiberglass with Nylon-12 or PEEK matrix
LAYER THICKNESS	50-60 Micron
POLYMER POWDER(S)	PEEK and Nylon 12
PRINTER DIMENSIONS	24' x 7.5' x 5.5' Feet
POWER REQUIREMENTS	208/3 Phase 50 Amp
OPERATING TEMP	70° / 50% Relative humidity
PRINT RESOLUTION (x,y)	1200 x 1200 dpi
PRINT ACCURACY	0.005 Inches (125 Microns)

Thank you

For more info.

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