Markforged

SOLIDWORKS 2027 | IV DAY TAIWAN

Unmanned Vehicles and Industrial 3D Printing

Trends & Outlook



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Country Manager, Greater China and Vietnam

Taipei Nov 3 · Hsinchu Nov 12 · Tainan Nov 13

WHO WE ARE

Industrial production at the point of need

Markforged: printers, software and materials on one platform

2013

Founded in Boston

HQ: Waltham, Massachusetts

10,000+

Customers worldwide

Industry, auto, aerospace, defence

70+

Countries

132 published customer cases

- **Digital Forge** printers + software + materials
- **Continuous fiber** our invention
- **Metal** FX10 + Metal Kit: print, wash, sinter
- **Security** ISO/IEC 27001 certified



Sources: Markforged company brochure, markforged.com; published customer cases counted to 31 Oct 2026

Markforged

Our partner in Taiwan: SolidWizard Technology

From SOLIDWORKS design to a printed part: one partner in Taiwan

Markforged × **SolidWizard Technology**
SWTC

SWTC: our local partner

- Founded in 1997, headquartered in Taipei
- 5 offices: Taipei, Hsinchu, Taichung, Tainan, Kaohsiung
- SOLIDWORKS design, simulation, PDM through to making

What customers get at SWTC

01 Assessment
Bring a part to assess

02 Quotes
Machines for the job

03 Training
Setup and Eiger software

04 Local support
Service and supplies

Source: SWTC website, About SWTC (www.swtc.com, accessed 3 Nov 2026)

CUSTOMERS WORLDWIDE

Markforged

132 published customer cases, across 11 industries

Every figure below is quoted from a published Markforged case study

132 cases

Official cases

Web 127 + video 4 + news 1

Industrial mfg	35
Automotive	24
Robotics	14
Aerospace & space	13
Food & packaging	13
Energy, oil & gas	11
5 other industries	22



Siemens Energy

Fixture 48 → 18 h
$250 → $52.79



Canon

Jig buying time cut to 1/20



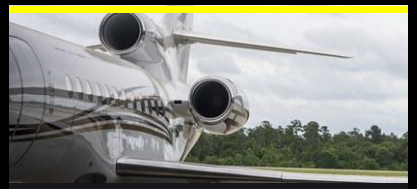
Yamaha Fine Tech

Jig lead time 7 days → 1 day



NASA JPL

~15 printed parts per Nebula robot



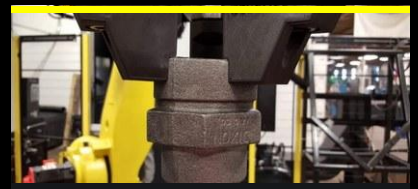
CMS

100+ printed parts on one jet



Plane Support

Cabin ducting CASA-approved



Dixon Valve

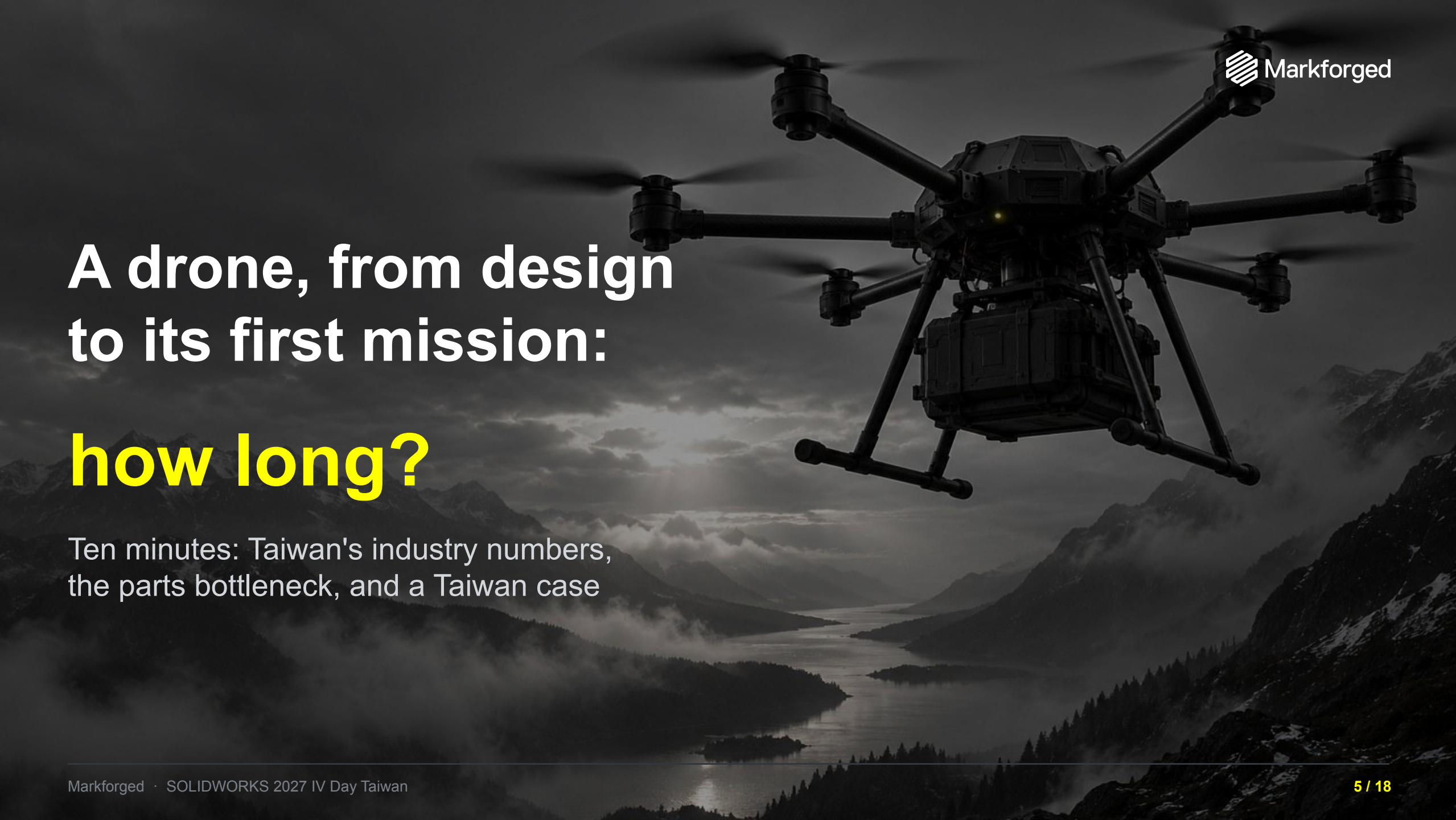
Jaws 144 → 9 h
$290 → $9



Danone

374 parts cost −80%

Source: markforged.com customer cases (Customer Success Stories / Application Spotlights / news), counted to 31 Oct 2026; each figure is that case's own result



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A drone, from design to its first mission:

how long?

Ten minutes: Taiwan's industry numbers, the parts bottleneck, and a Taiwan case

THE TREND

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In Taiwan, drones are now an export number

The numbers behind Taiwan's drone build-out

12.94 NT$ bn

Drone output, 2025

2.56x the NT$5.06 bn of 2024

153 US$ m

Exports, Jan–May 2026

Already above the US$93 m of all 2025

260+ firms

Companies involved

From components to full system integration

44.2 NT$ bn

Government programme

6-year plan; target NT$40 bn output by 2030



The opportunity is in the supply chain

Source: Ministry of Economic Affairs (Taiwan), drone industry status and policy report, 30 June 2026

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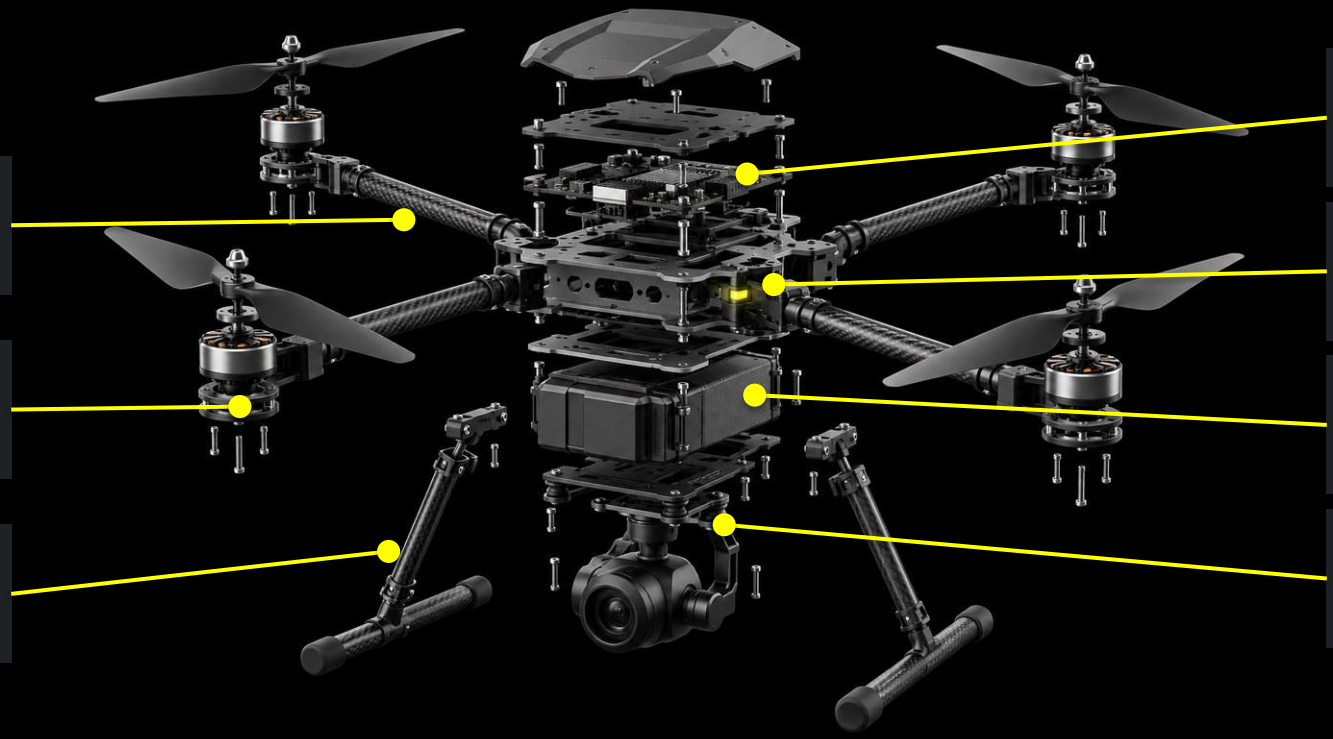
Drone programmes stall on parts, not design

Every structural part below is low-volume and high-mix

Arm
Bend and twist

Motor mount
Flat seat, bolts

Landing gear
Impact, swappable



Avionics mount
Damps vibration

Centre frame
Carries the load

Battery mount
CG, secure hold

Payload mount
Load and balance

A design change often means new tooling, machining or another import

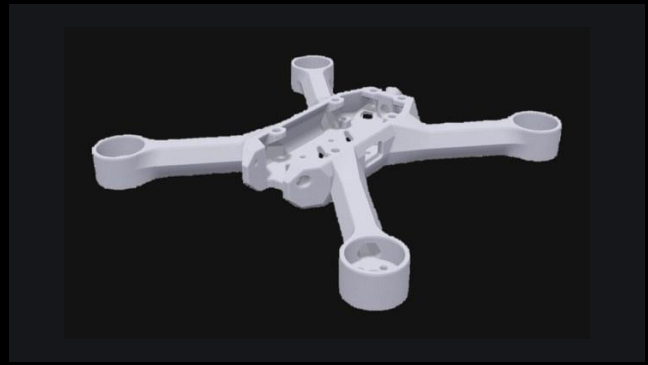
Illustration: main structural parts of a multirotor drone (drawn for this presentation)

Markforged

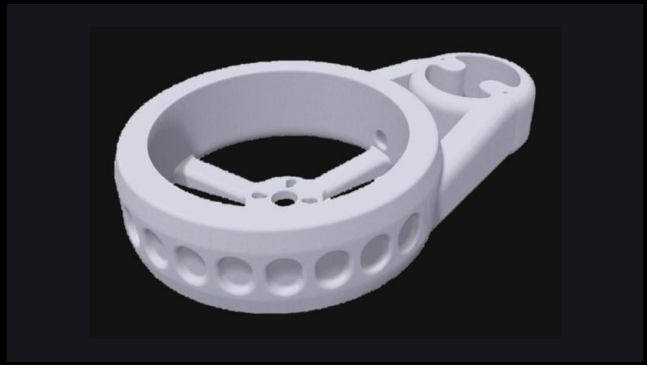
Which drone parts can be printed?

Markforged sample parts, printed from their design files

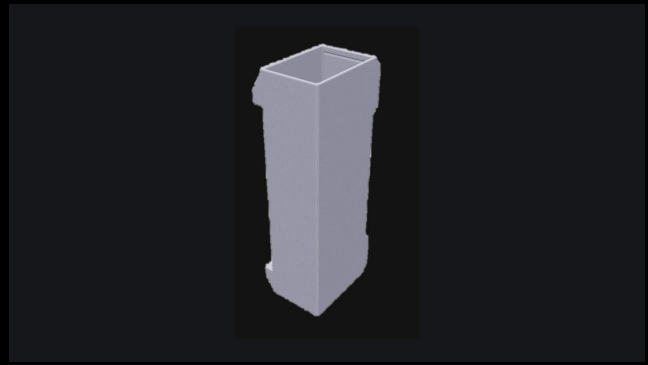
- **01 Frame & arms** load-bearing
- **02 Duct + motor mount** complex
- **03 Battery box** low volume
- **04 Base plate** fiber inside



01 Frame and arms



02 Duct + motor mount



03 Battery box



04 Base plate

No new mould per revision.
Load parts get re-tested.

Parts: renders of Markforged sample-part print files

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Continuous fiber: the biggest difference

Continuous fiber, placed in the layers and regions you choose



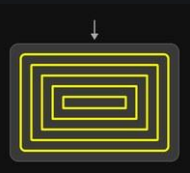
Continuous fiber paths inside a part. Image: Markforged

- **Two nozzles:** Onyx plus continuous fiber
- **Not chopped fiber:** one strand, laid in chosen layers
- **Carbon fiber:** 800 MPa tensile, coupon, along fiber
- **Compare:** 6061-T6 aluminium, about 310 MPa

In the slicer, pick the layers and the path for the fiber



Sandwich
Skins: fiber
Core: Onyx



Concentric
Follows the outer contour



Holes only
Rings around bolt holes



Outer wall
Outer ring, stiffer edges

Strength: test-coupon values along the fiber (Markforged spec); real parts depend on fiber volume and direction. Patterns drawn for this deck

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Strength: easiest to see on video

Three official Markforged test videos



01 Chain link pull test

21 s · played live



02 Part strength test

1 min 32 s · watch later



03 High-strength parts

55 s · watch later

Video 01: the chain breaks at 22,000 lbf (about 98 kN)

The 21,000 on the thumbnail is mid-test, before the break

Videos: Markforged official YouTube (01 is titled "Breaks at 22,000 lbf"); click a video to play it in the deck

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Composites to metal: three equipment lines

Composites, high-temperature and metal



FX10

Composites first; add the Metal Kit for metal

Build 375 × 300 × 300 mm
Metal Kit adds metal printing



FX20

Large heated chamber to 200°C

Build 525 × 400 × 400 mm
Prints ULTEM™ 9085



X7 · X7 Field Edition

The continuous fiber workhorse; Field Edition in a rugged case

Build 330 × 270 × 200 mm
Unbox to print: under 3 min

Metal workflow: FX10 + Metal Kit print → Wash-1 debind → Sinter-2 sinter

Specs: Markforged FX10 / FX20 / X7 product specifications and website; unbox-to-print time from the X7 Field Edition manual REV 1.5

THE PROOF

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Drone makers worldwide are already doing this

Published Markforged customer stories: their numbers, not ours



Raphe mPhibr

India · military UAVs

Tooling lead time cut 60%



BRINC

USA · first responders

Main structural parts printed



BODUK

Japan · wall inspection

Production time cut 50–66%



AeroG Lab

Japan · end-use parts

Part cost −90%
2–3 wk → 1–2 days

Common thread: print your own parts or tooling, iterate faster

Figures from the official Markforged drone industry deck (2026); baselines differ by case. Raphe also reports 80% faster prototyping

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Gamma Rotors, in their own words

Defense and industrial drone maker, India



Gamma Rotors · India

- Defense and industrial drone maker
- From 1 printer to more than 10
- The customer tells it first-hand

Live: first 30 seconds only
Full 2:57 video: watch later

Case and video published by Markforged

Markforged

ASTER: an FPV airframe for high-speed flight

ASTER-SWARM FPV airframe, designed and built in Taiwan



Prototype, continuous carbon fiber reinforced. Photo: ASTER

Four structural risks to solve

- **Arm flex:** bends in hard turns
- **Resonance:** shakes the gyro and video
- **Delamination:** splits along layer lines
- **Heat & fatigue:** screws loosen at motor mounts

> **The alternative: CNC carbon plate**
> Strong, but every change is a recut

Source: design notes and photos provided by ASTER Technology

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Carbon fiber at arm roots and motor mounts

Markforged X7 Field Edition · Onyx + continuous carbon fiber · five standard modules



Concept only, not this airframe



Top view · Photo: ASTER

M1	M2	M3	M4	M5
Top cover	Main body	Standoffs	Front shroud	Mission interface

- **Carbon fiber:** at arm roots and motor mounts
- **Damage:** reprint that part, check joints
- **Changes:** usually one module
- **Dual use:** add printed guards for a trainer

Test results and prototype photos: ASTER Technology; exploded-view illustration: Markforged

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Force 9 wind test passed; built in Taiwan

Wind test measured and verified by an NCSIST unit · airframe designed, printed and assembled in Taiwan

9

Force 9 wind test: passed

Definition: 20.8–24.4 m/s mean wind

Measured and verified
by an NCSIST unit

- **Flight tests:** take-off and flight done
- **Local build:** no outsourced plate
- **Spares:** reprinted on site

Made in Taiwan, end to end



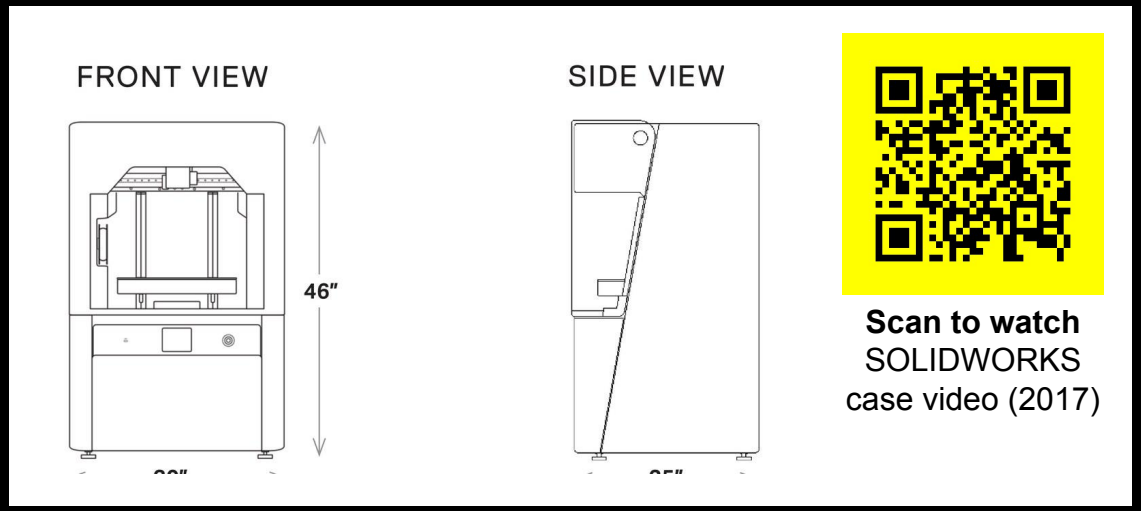
Brian Chen holding the ASTER-SWARM airframe (iThome interview, Sept 2026); printed on an X7 Field Edition

Source: test results provided by ASTER Technology; wind test measured and verified by an NCSIST unit; full case at news.markforged.tw

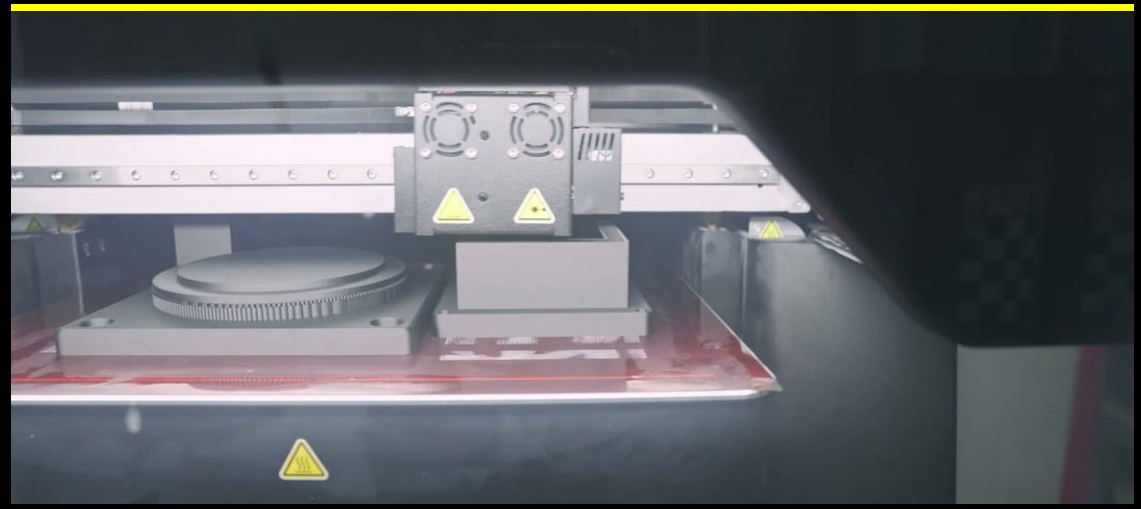
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Faster design moves the bottleneck to making

Markforged designs its printers in SOLIDWORKS. More design options still have to be built and tested.



Scan to watch SOLIDWORKS case video (2017)



We use SOLIDWORKS too

- Premium design, PDM files, Simulation
- SOLIDWORKS story: cycle cut to < 6 months

AI: more designs to verify

- More candidates need faster real tests
- Faster design: making must keep pace

Source: SOLIDWORKS customer story (Markforged co-founder Greg Mark interviewed); images: FX10 spec-sheet views, FX10 printing (Markforged)

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The wait is parts. AeroG: 2–3 weeks → 1–2 days

Bring a part, let Markforged assess it

Bring a part and its requirements

- Our booth is here: bring a drawing or a non-confidential STL
- Tell us the use, loads, temperature, key tolerances, quantity
- On the spot: printable or not, which material, how long
- If machining or tooling is the better deal, we'll say so



Scan for the full ASTER case

Brian Chen

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