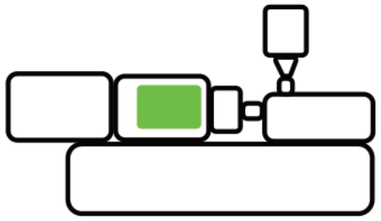
THERE IS NO ONE SIZE FITS ALL

Ronny Eden, 3D dep. CTO

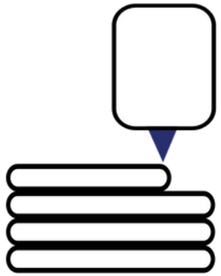
SU-PAD
Solutions You Can Trust

WHO WE ARE

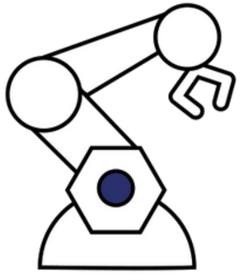
30 Years Of Experience • Providing Solutions, Not Machinery



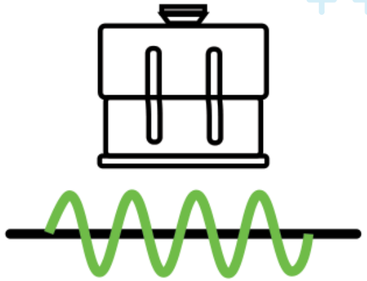
Injection Machines & Equipment



3d Printers



Robotics & Automation



Plastic Welding

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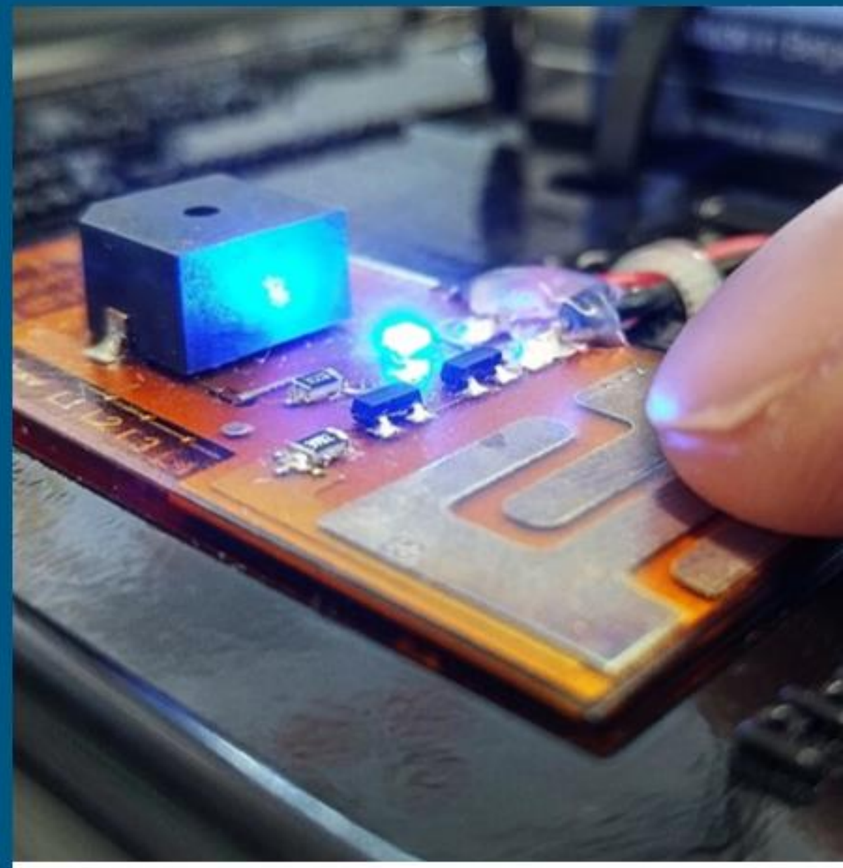
OUR RAPID MANUFACTURING SOLUTIONS

stratasys POLYMER

Tritone XACT METAL METAL



NANODIMENSION Electrifying Additive Manufacturing® PCB

5 LEADING TECHNOLOGIES

TECHNOLOGY PLATFORMS

- PolyJet
- Stereolithography
- Industrial FDM
- Origin P3
- SAF

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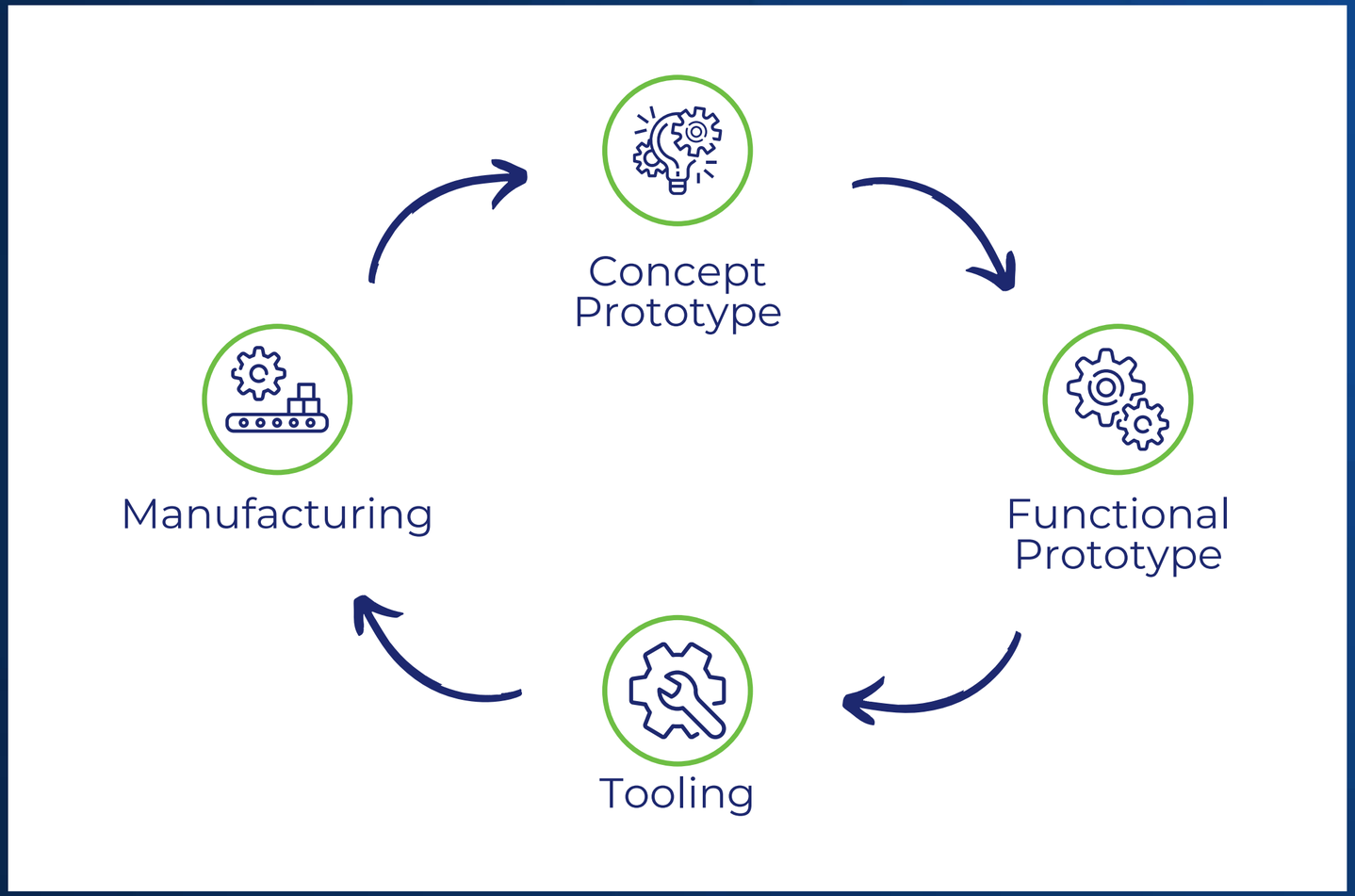
PART DEVELOPMENT LIFE CYCLE



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POLYJET TECHNOLOGY

HIGHEST PRODUCT REALISM

- Concept Prototyping
- Fit & Form
- Semi-Functional Prototyping

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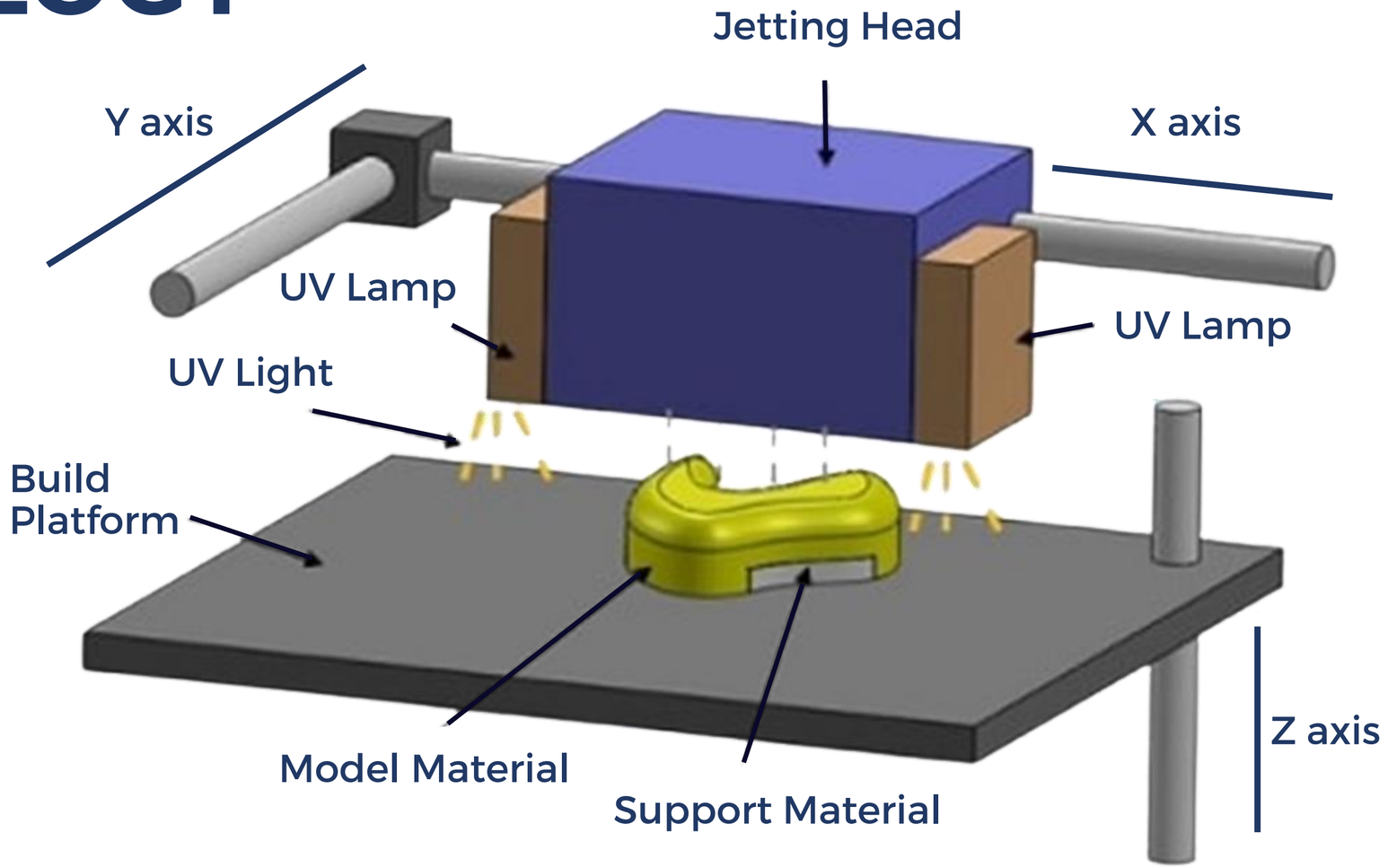
POLYJET TECHNOLOGY



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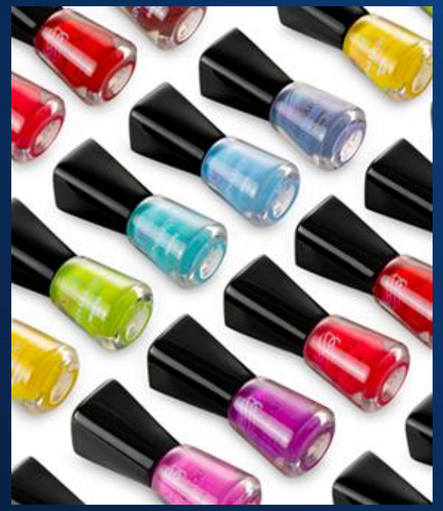
Made with PolyJet Technology

Made with PolyJet Technology

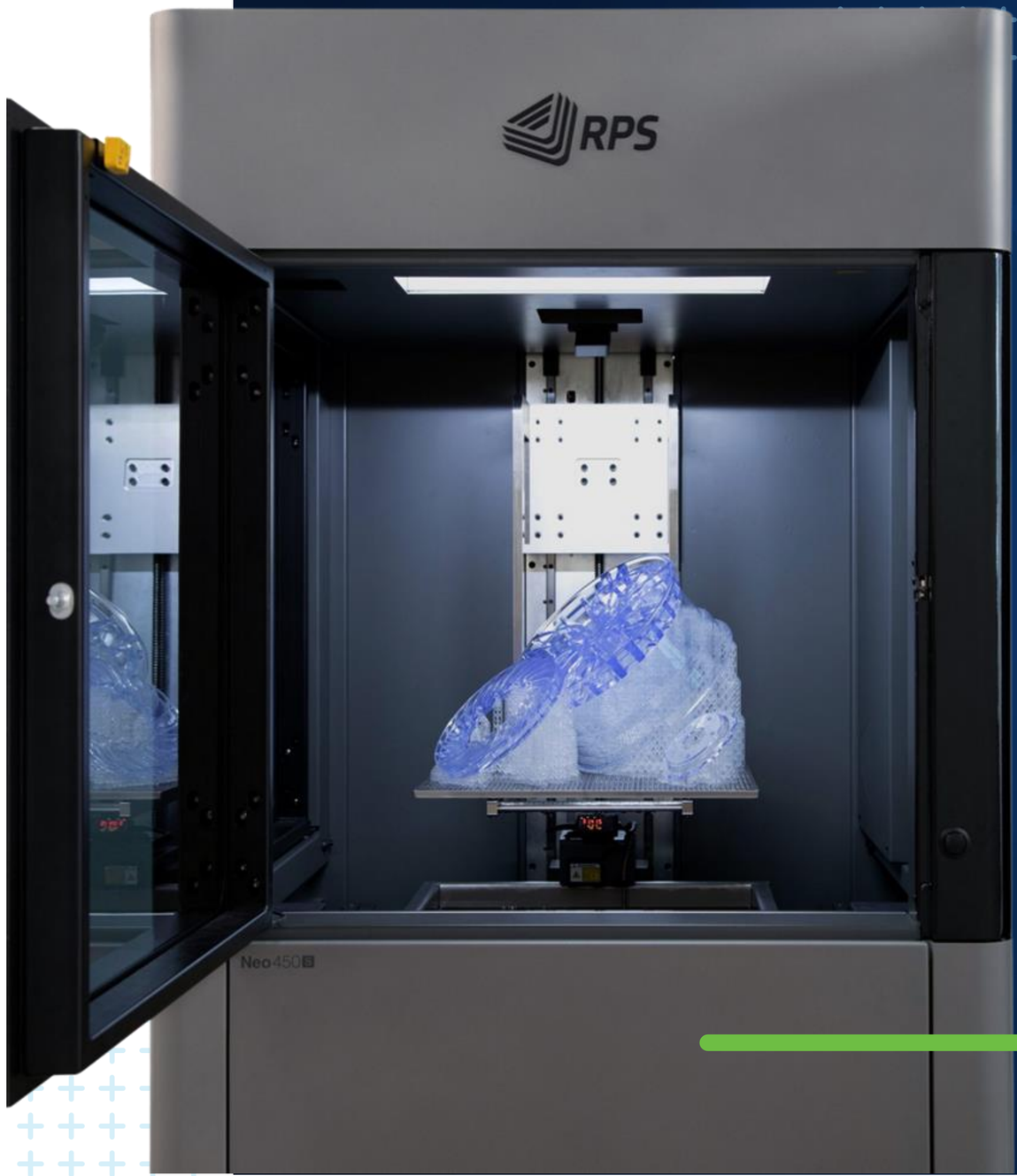


PolyJet in Fashion

SL TECHNOLOGY

BEST SURFACE FINISH

- Concept Prototyping
- Fit & Form Prototyping
- Tooling – Molds, Jigs & Fixtures



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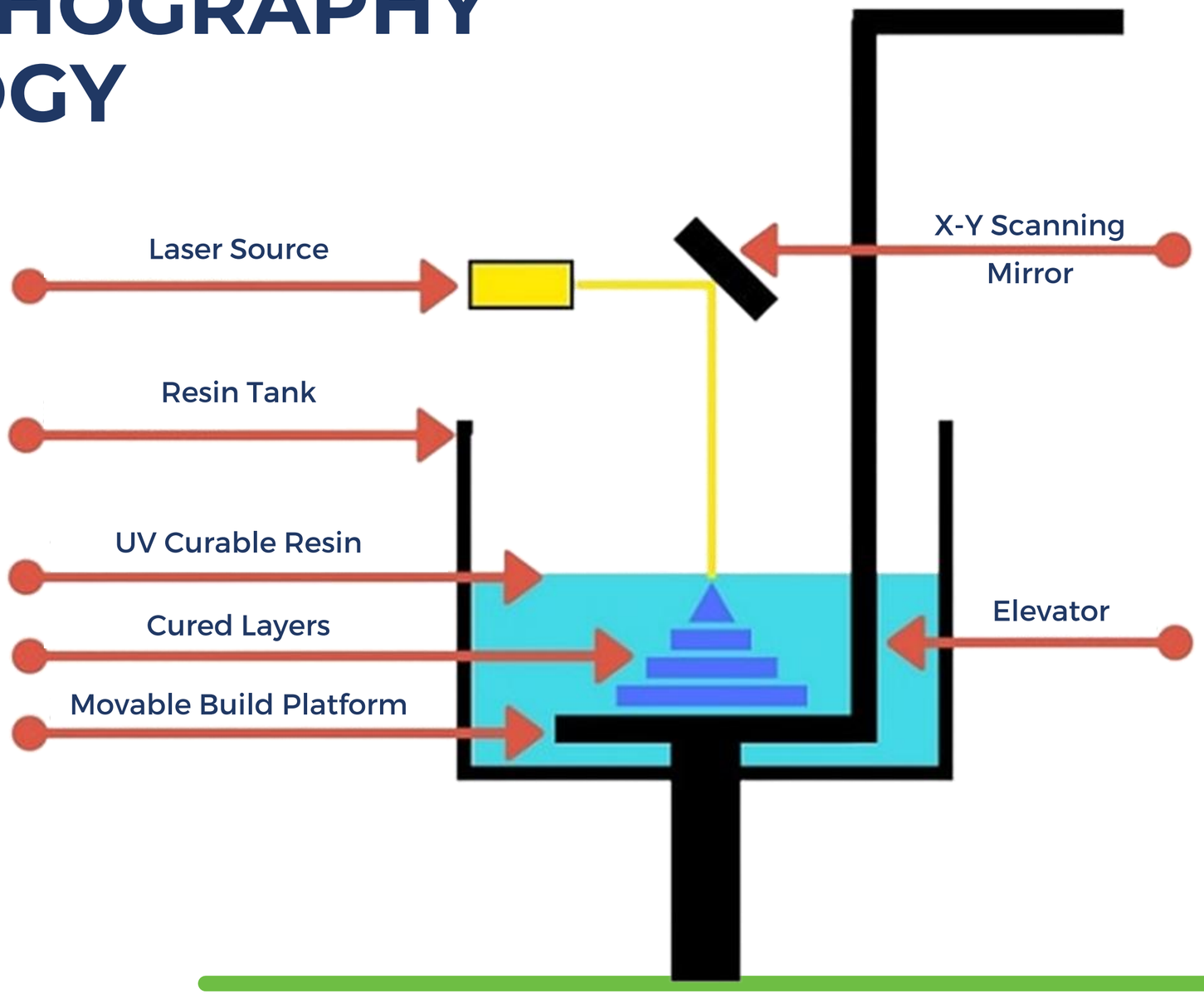
STEREOLITHOGRAPHY TECHNOLOGY



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Made with Stereolithography Technology

Transparent Parts

Injection Molding

Investment Casting

Carbon Layup Tools and Cores

FDM MANUFACTURING

MINIMUM HANDLING, HIGHEST VERSATILITY

- Functional Prototyping
- Tooling
- Final Parts

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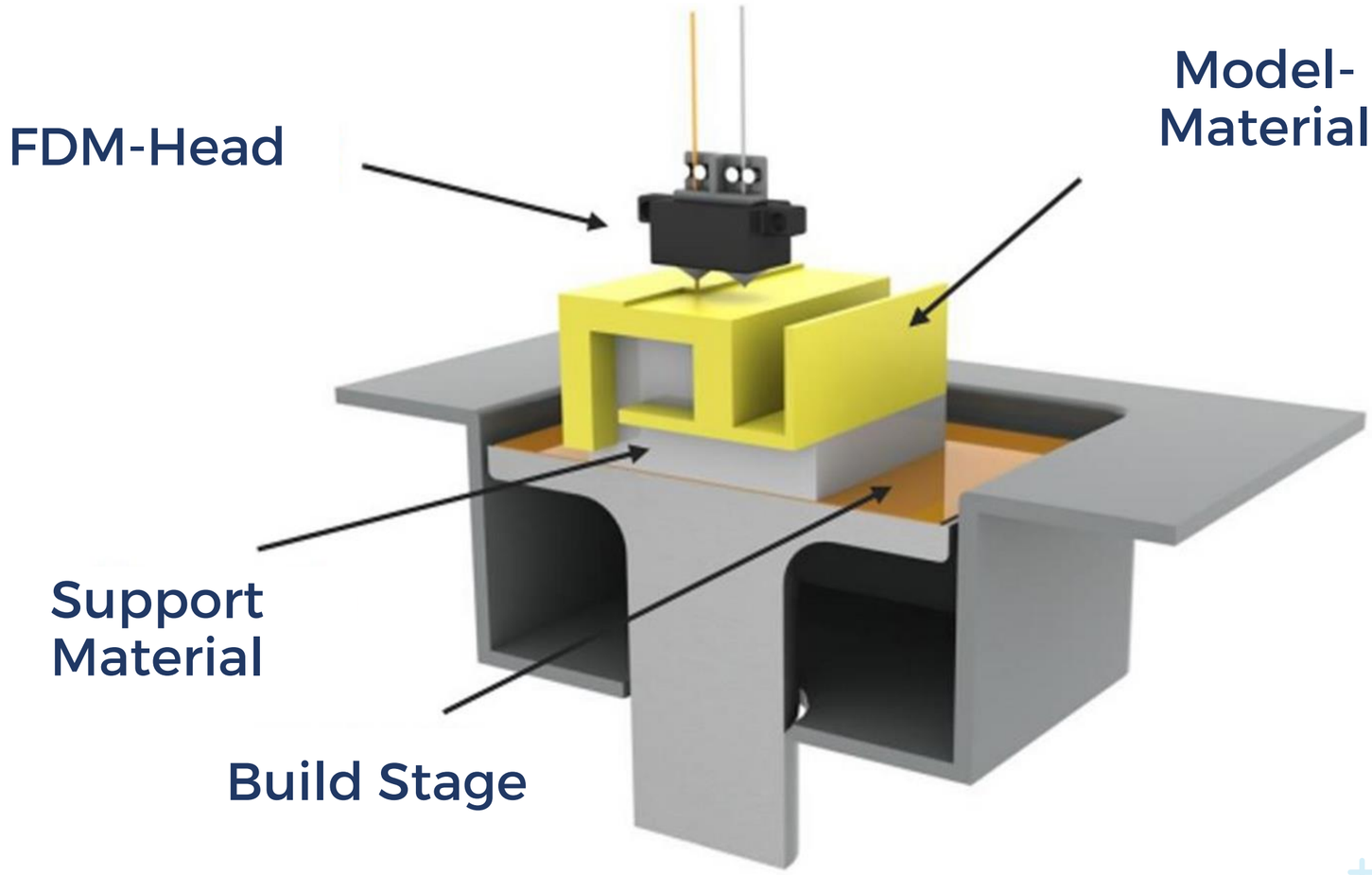
FDM FUNDAMENTALS



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STRATASYS FDM MATERIALS

Genral

- ABSplus
- ABS-M30
- ABS-M30i
- ABS-ESD7
- ASA
- PLA
- Diran

Engineering-Grade

- **ABS-CF10**
- **Nylon-CF10**
- PC
- PC-ABS
- PC-ISO
- FDM Nylon 12
- FDM Nylon 6

High Performance

- ULTEM™ 1010 resin
- ULTEM™ 9085 resin
- PPSF / PPSU
- Nylon 12CF 35%
- Antero (PEKK)
- Antero -ESD

Specialty Products

- ST-130

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Made with FDM Technology

Final Aerospace Parts

Chemical Resistance and ESD Req

Jigs & Fixtures

Surgical Tooling

FDM® OPEN MATERIAL ECOSYSTEM

GIVING YOU BROADER MATERIAL OPTIONS AND ACCESS TO PRINTER SETTING TO OPTIMIZE PART PERFORMANCE FOR ALL OF YOUR NEEDS.

Stratasys Preferred

Qualified Materials

Stratasys Validated

Qualified Materials

Open

Unvalidated

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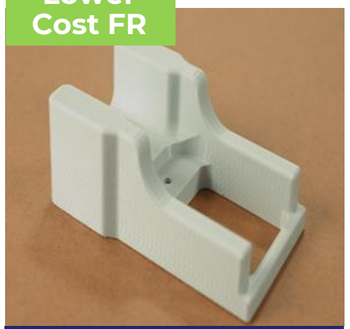
NEW VALIDATED MATERIALS COLOR CHOISES

Glass Filled

Covestro
PA6/66 GF20- FRLS

Lower Cost FR



Kimya
PC-FR

Soluble sup. FST

Victrex
AM 200

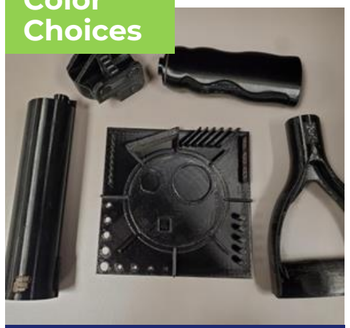
Surface Finish

HIPS

Color Choices

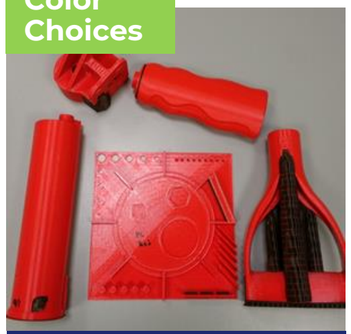
UltemTM 9085
Colors

Color Choices



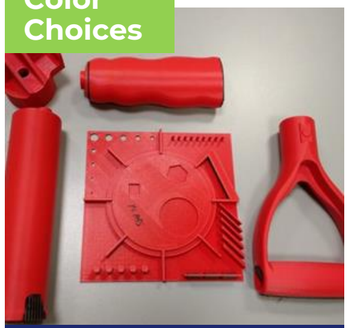
PC
Black

Color Choices



PC
Red

Color Choices



PC-ABS
Colors

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P3 (PROGRAMMABLE PHOTO –POLYMERIZATION) TECHNOLOGY

**HIGH SPEED,
HIGH QUALITY SURFACE FINISH**

- Low - Mid Range Production
- High End Functional Prototyping

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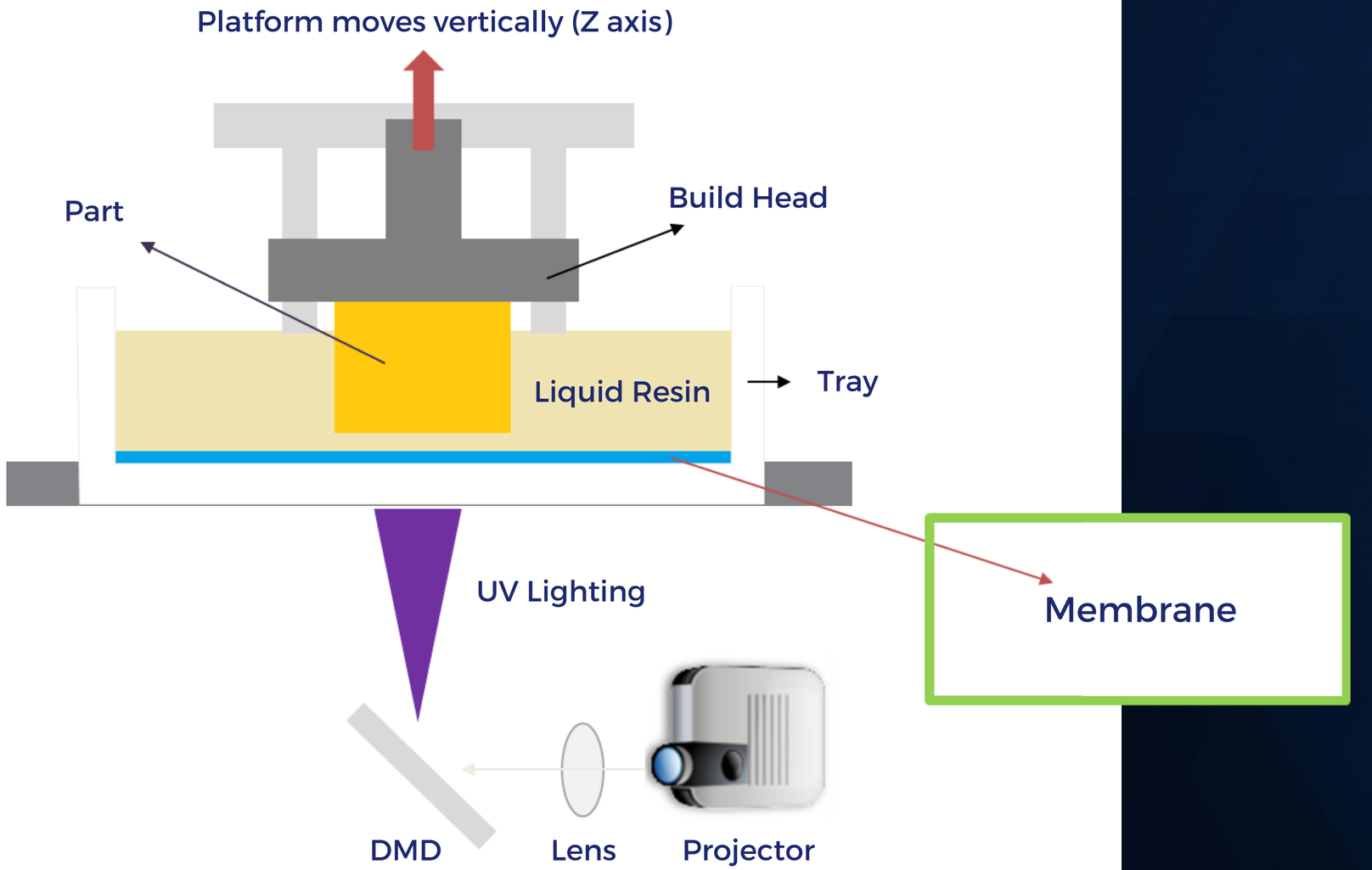
P3 TECHNOLOGY



Material Options for The Stratasys Origin One

A variety of photopolymers, including heat resistant, tough, durable, and more

It takes an ecosystem to transform an industry. Stratasys works with leading chemical companies to co-develop innovative photopolymers in several categories to unlock end-use applications in 3D printing

Heat-Resistant
Materials for application-specific requirements, such as flame smoke and toxicity, HDT or mold durability

General Purpose
Fast-printing materials for end-use applications requiring cosmetic surfaces, fine features and high accuracy

Tough
Impact-resistant resins for functional applications that need to perform under stress and high-load conditions

Elastomers
Resilient, high-resolution elastomers for applications requiring excellent tear strength or rebound performance

Take on The Most Demanding Applications

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HEAT-RESISTANT APPLICATIONS WORTHY OF THE US AIRFORCE

ORIGIN WINS FIRST PLACE IN RSO-HOSTED ADVANCED MANUFACTURING OLYMPICS, IMPROVING DESIGN AND MANUFACTURING OF NECESSARY CLAMP FOR F-16 OPERATION.

Challenge

Open competition in 2020 held to quickly find new and creative 3D printing solutions for the C3175 family of hydraulic line clamps, used in F-16 aircraft, and frequently fail after extended exposure to vibration, chemicals in the environment, and heat cycling.

Solution

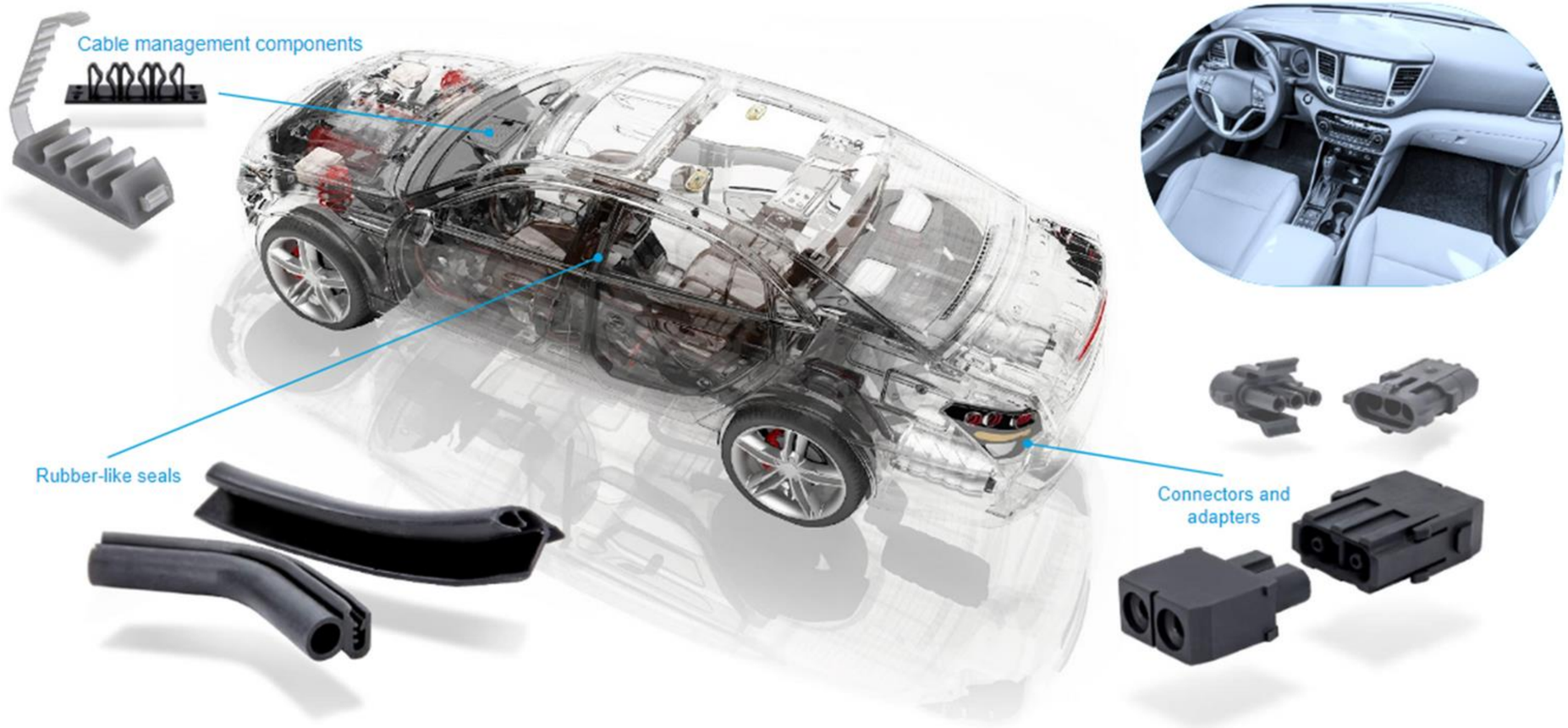
- A new design and manufacturing solution was created within just two weeks, with Origin One's P3™ technology, topology optimization algorithms, and Stress Engineering Services' design and analysis expertise.
- Clamp halves printed with LOCTITE® 3955, which meets the Air Force's stringent flight requirements and had passed UL 94 V-0 certification (burning stops within 10 seconds) and is flame-retardant, extremely chemically resistant and can handle wide low and high temperature ranges.
- Tether was printed in an elastomer, LOCTITE IND402.

Impact

- New Part - 2x load bearing and 5% lighter vs. legacy design.
- 20 parts per 36-minute build, and up to 6,400 parts/month on a single printer.

HIGH-MIX, LOW-VOLUME PRODUCTION OF AUTOMOTIVE END-USE PARTS

THE STRATASYS ORIGIN ONE CAN PRINT A WIDE VARIETY OF MATERIALS, WHICH MAKES IT PERFECT FOR MANUFACTURING A DIVERSE RANGE OF SMALL- TO MEDIUM-SIZED PARTS



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SAF MANUFACTURING

HIGH THROUGHPUT, LOW COST PER PART

- Production

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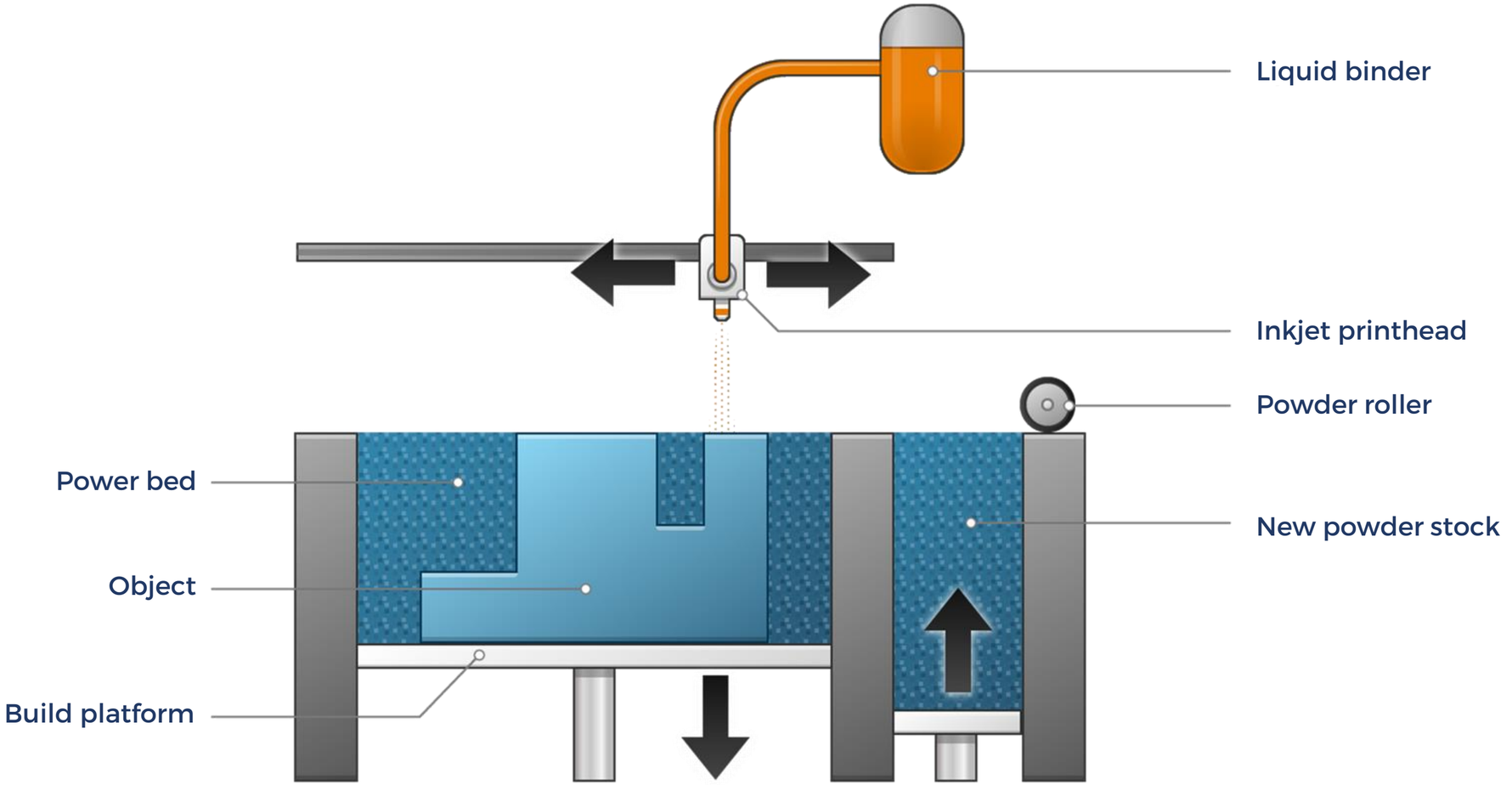
SAF TECHNOLOGY



SAF™

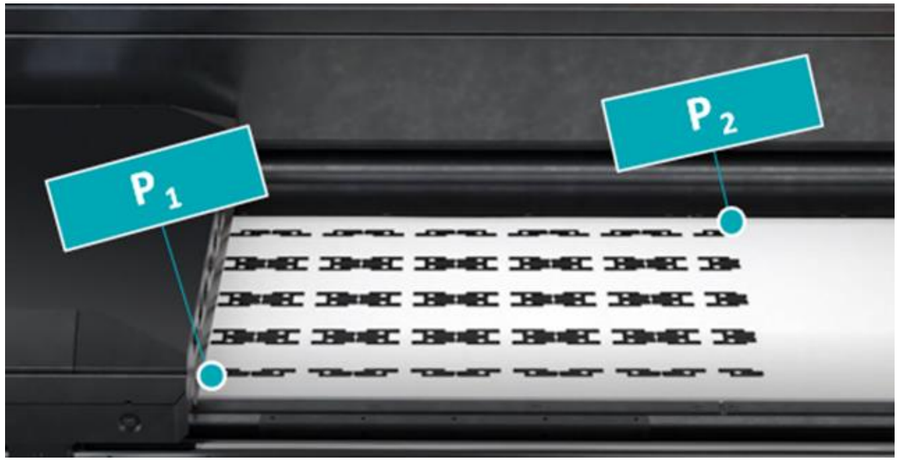
UNIDIRECTIONAL ARCHITECTURE

The time between fusing and recoating remains **consistent across the bed**

2 CARRIAGES

SYNCHRONIZED

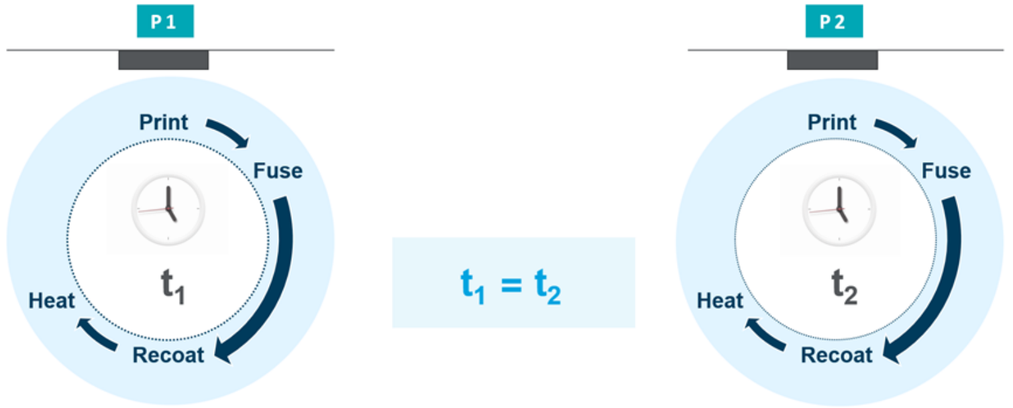
Print-and-Fuse | Recoat-and-Heat



UNIFORM TIMING

UNIFORM THERMAL EXPERIENCE

Print-and-Fuse | Recoat-and-Heat



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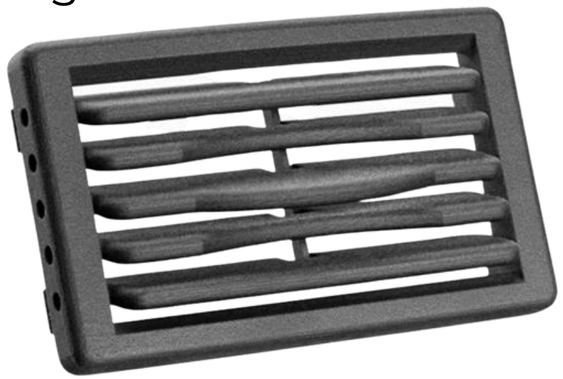
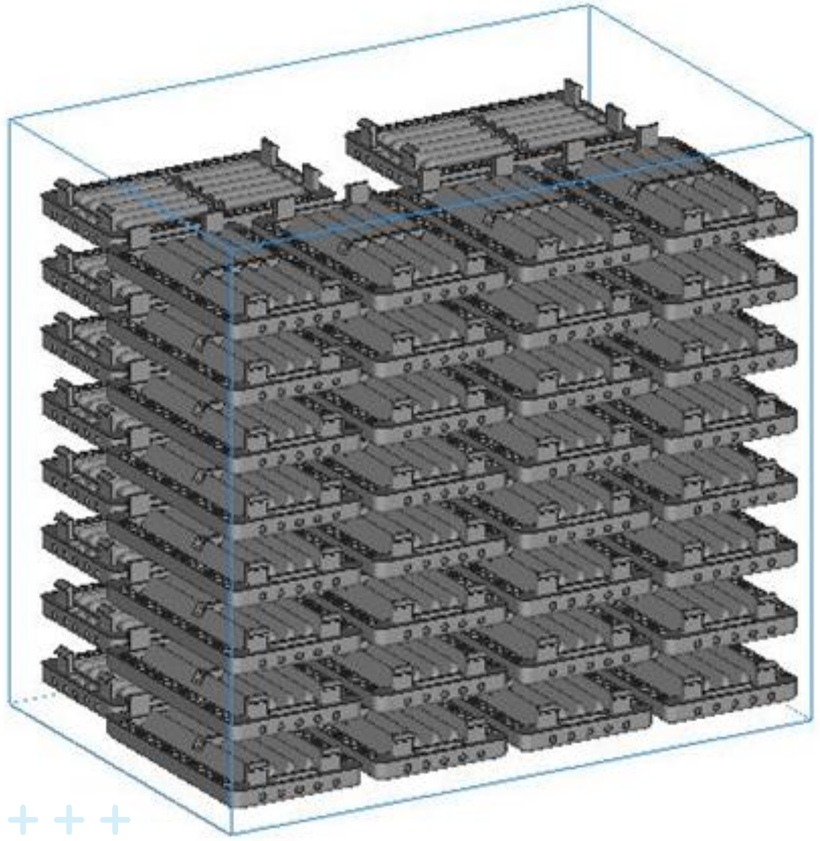
STRATASYS SAF MATERIALS

- PA11
- PA12 – BETA STAGE
- PP – COMING SOON

AIR VENT

- Part consolidation
- Post build assembly of components isn't required
- Each vent is geometrically accurate
- SAF cost per part = $2.53, 77% less than injection molding
- Print time = 9hrs 40mins for 66 HVAC air vent grills





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NASCAR’s Next Gen Car

- NASCAR’s Next Gen car cabin uncomfortably hot
- The solution must not alter the car design
- Air needed to redirected from outside to cool drivers through an Air Flow Duct that can’t be produced by traditional manufacturing

Material	High-Yield PA 11
Printed layer time	11 hours, 37 minutes per 2
Volume of material/part	21.1in (346 cm)
Parts per year	Up to 1,100 per machine
Cost per part	$237

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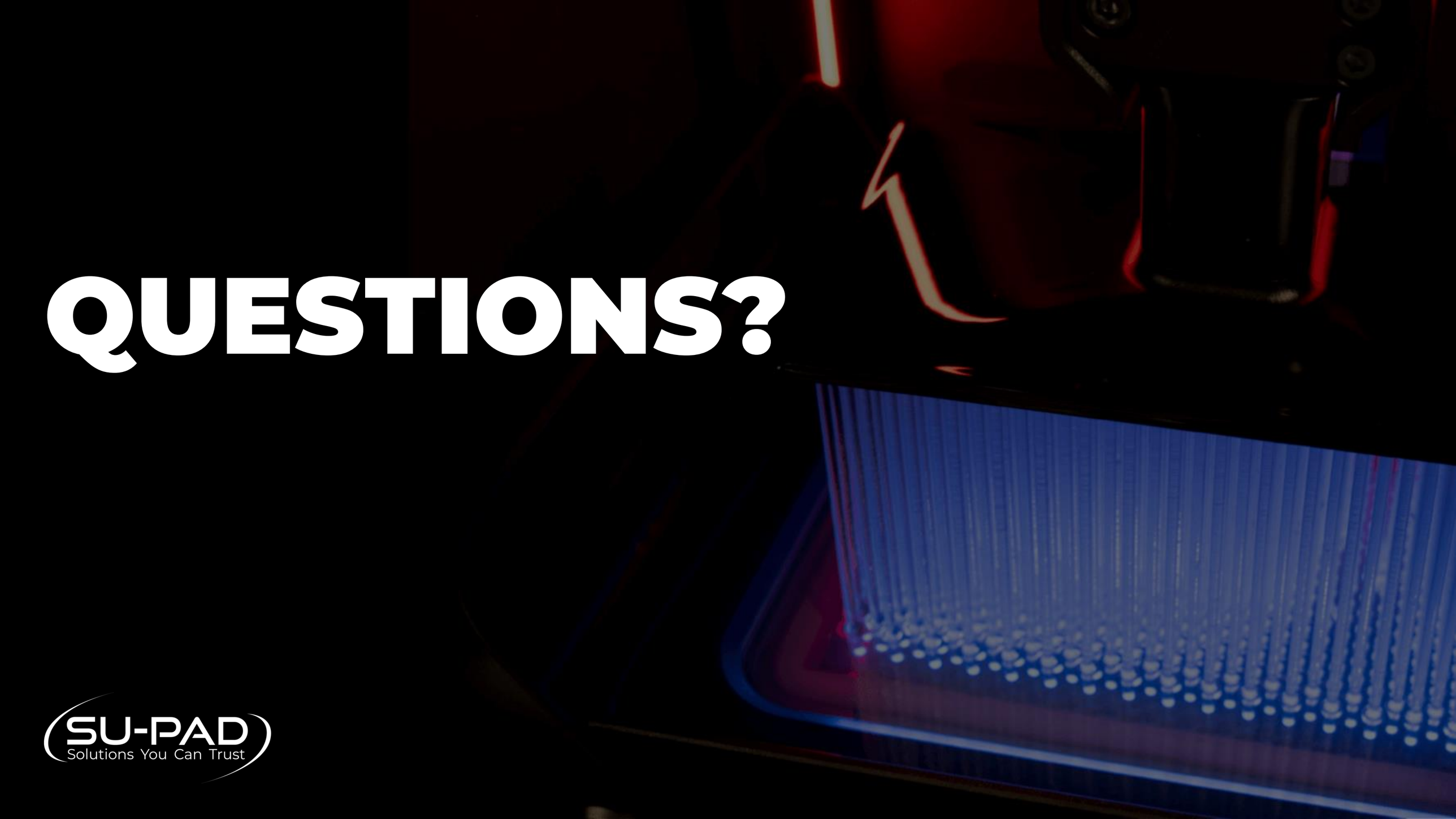
QUESTIONS?



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Ronny Eden

ronny@su-pad.com
972-52-8267732

THANK YOU

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