

# CBM\_

Research\_ Design\_ Medical\_ Manufacture\_

*Translating research and innovation into new products, processes and services, and the commercialisation of new knowledge, ideas and concepts.*

## Case Studies



CBM has been awarded ISO9001:2015 quality standard accreditation for the:

**“Provision of a Design, Prototyping and Batch Manufacturing”**

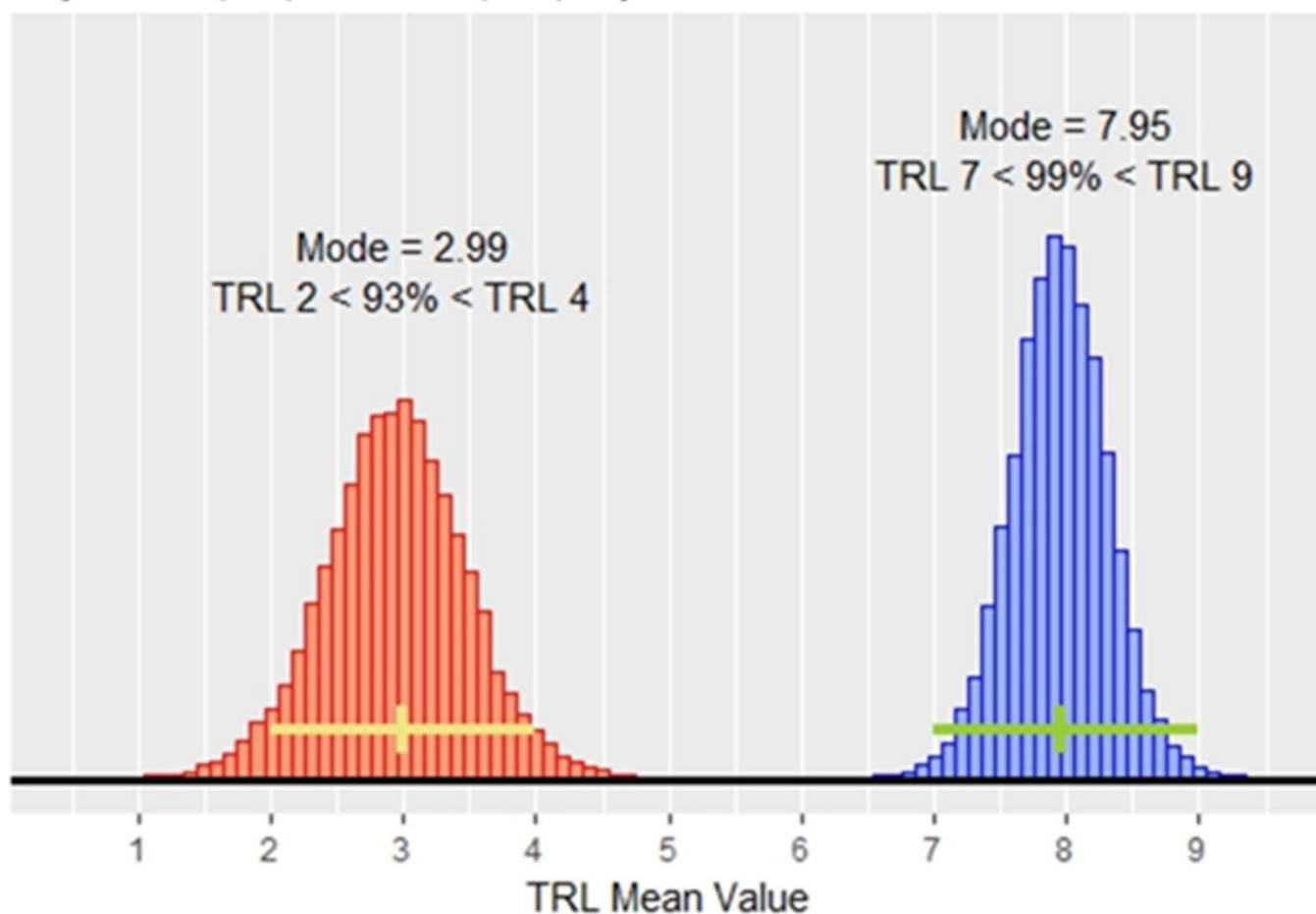


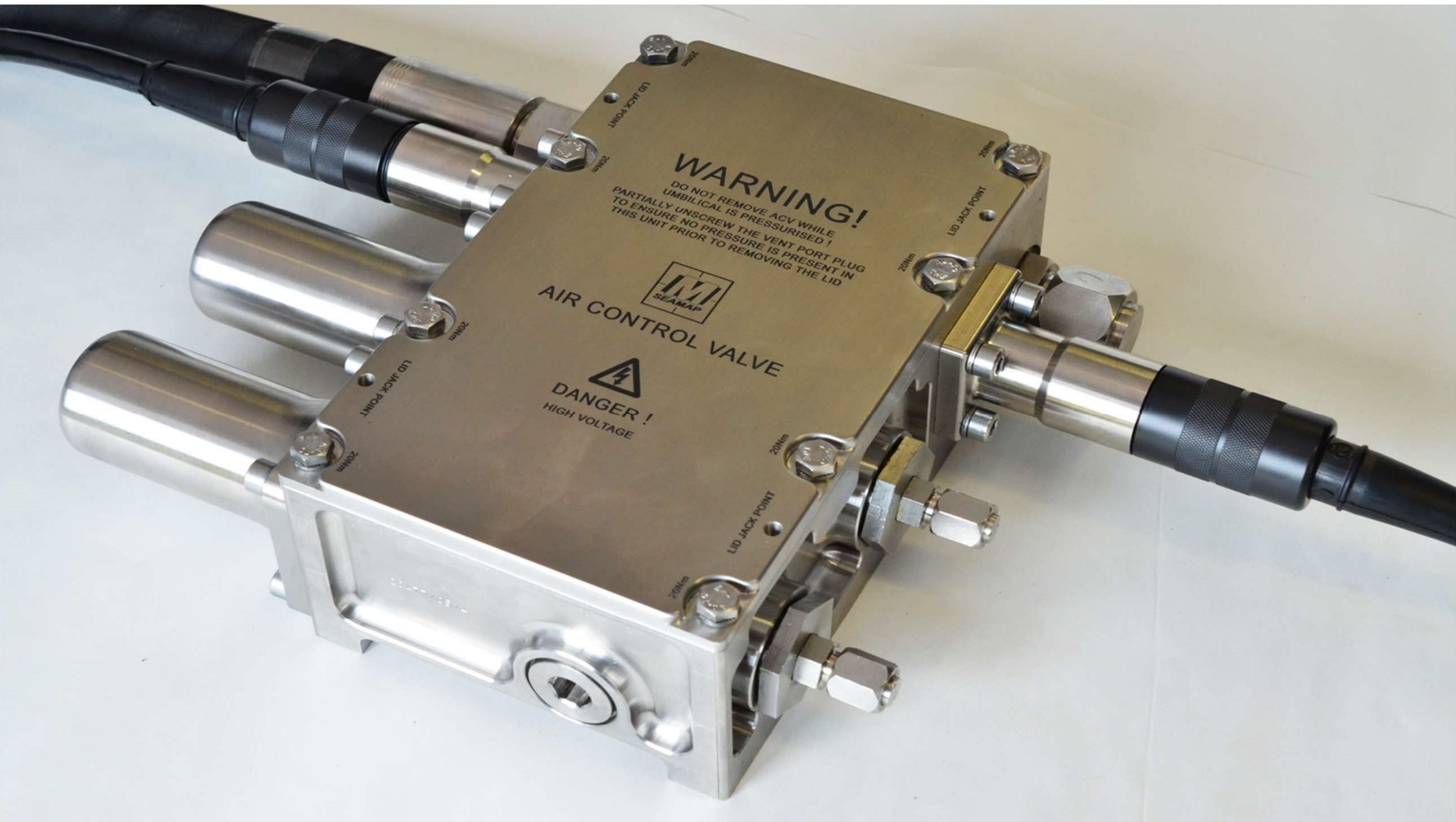
CBM has been awarded ISO13485:2016 Medical standard accreditation for the:

“**Design & Manufacture** of Custom-Made 3D-printed surgical guides and implants intended for end-user sterilisation.”

## TRL Mean Estimates for CBM Projects (N=16, Ordinal Values)

Project Start (Red) and Finish (Blue) Bayesian Model with Normal Distributions





VENT GEN

**WARNING!**  
DO NOT REMOVE ACV WHILE  
UMBILICAL IS PRESSURISED!  
PARTIALLY UNSCREW THE VENT PORT PLUG  
TO ENSURE NO PRESSURE IS PRESENT IN  
THIS UNIT PRIOR TO REMOVING THE LID



AIR CONTROL VALVE

**DANGER!**  
HIGH VOLTAGE

LID JACK POINT

LID JACK POINT

LID JACK POINT

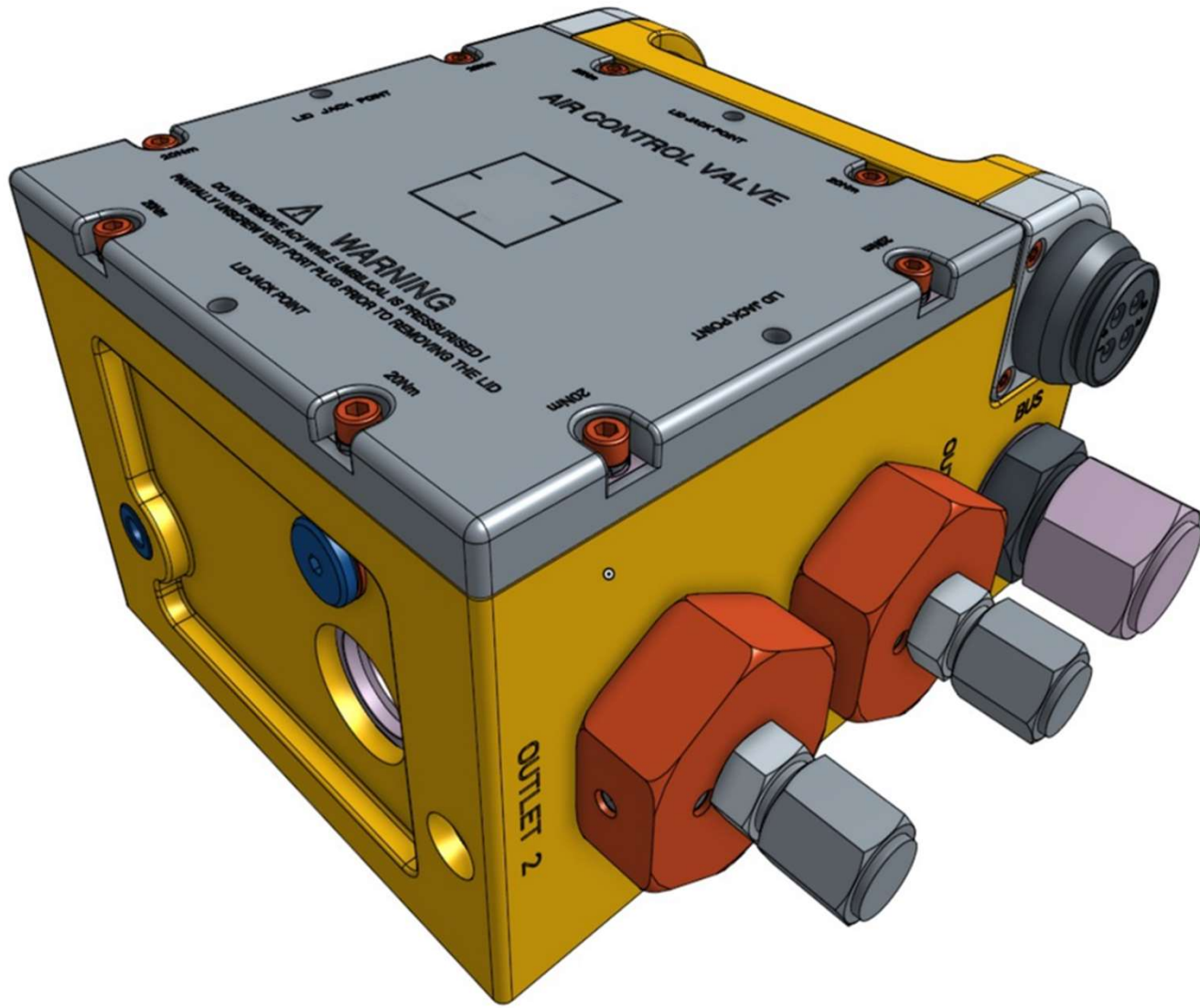
20Nm

20Nm

20Nm

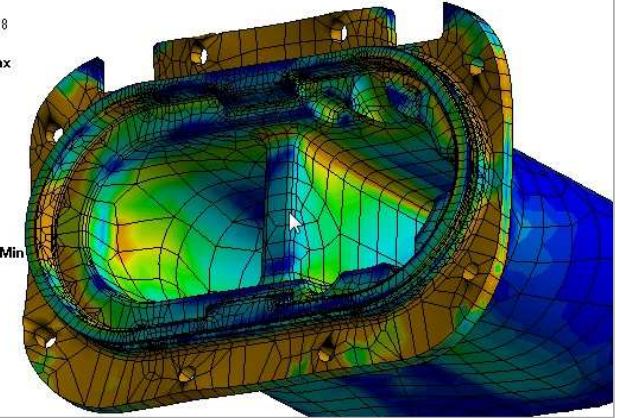
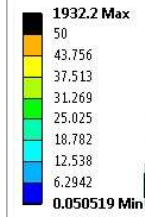
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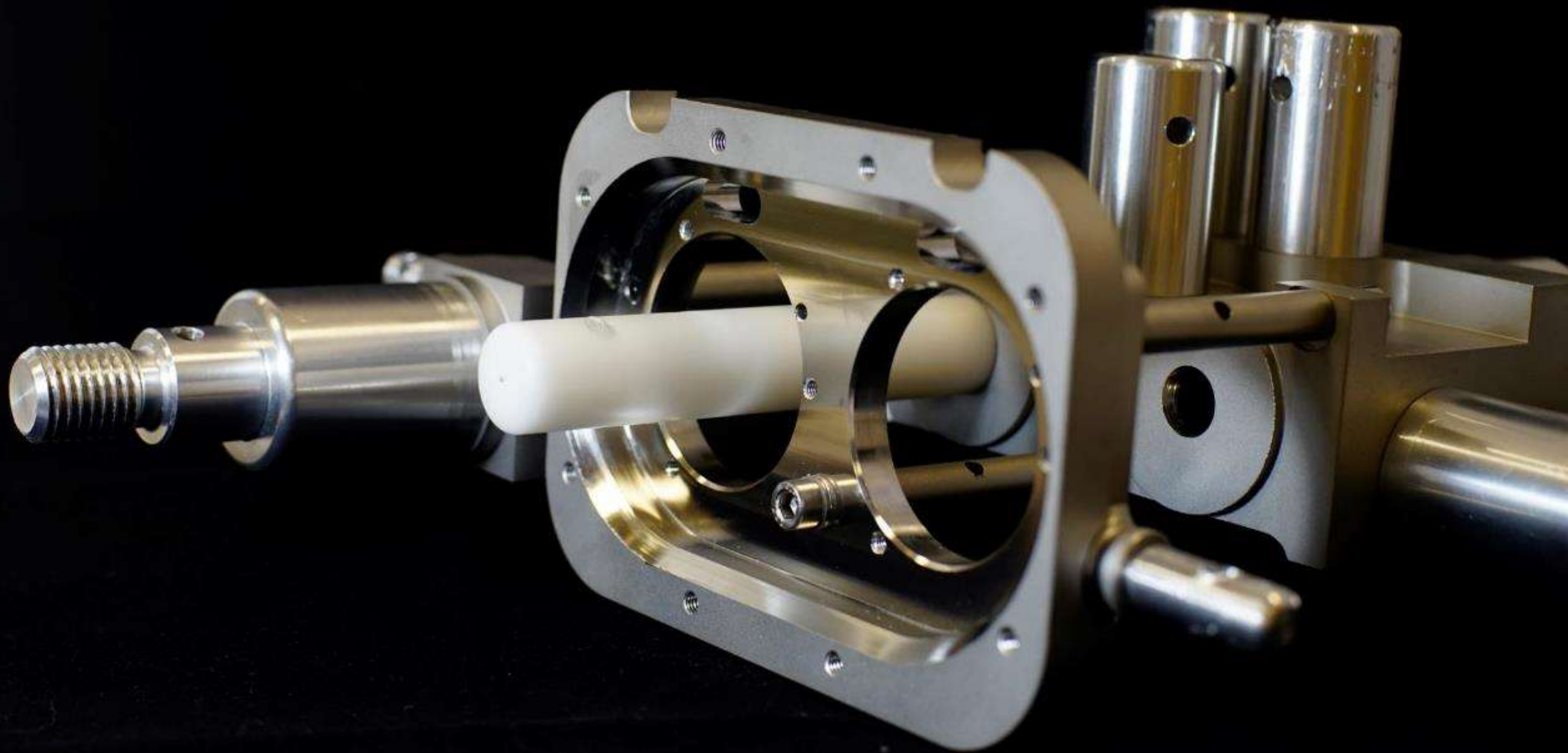
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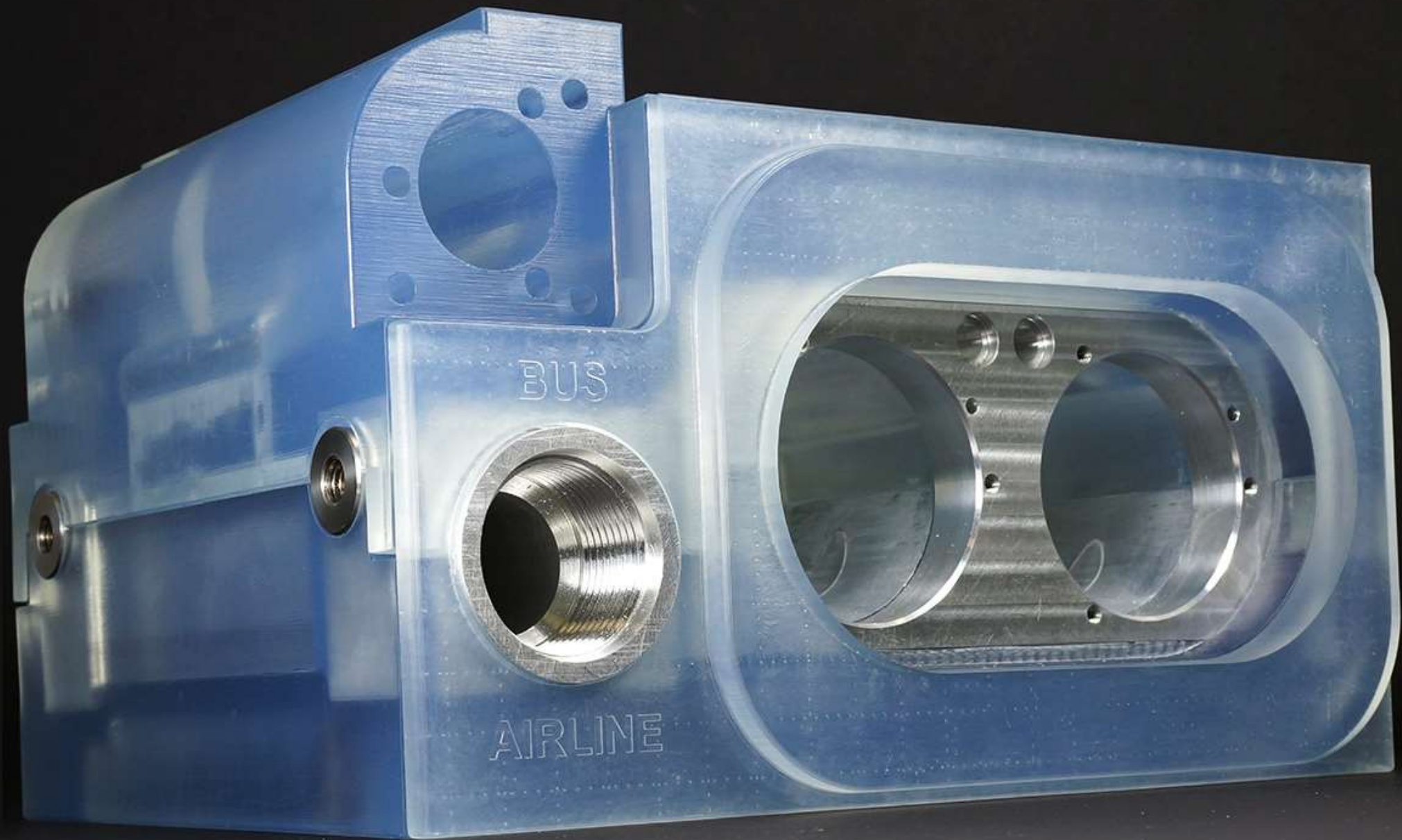


G: Copy of 1.22 e-1 - Internal Pressure 05-31-4105\_v5

Equivalent Stress  
Type: Equivalent (von-Mises) Stress  
Unit: MPa  
Time: 1  
07/12/2015 13:28



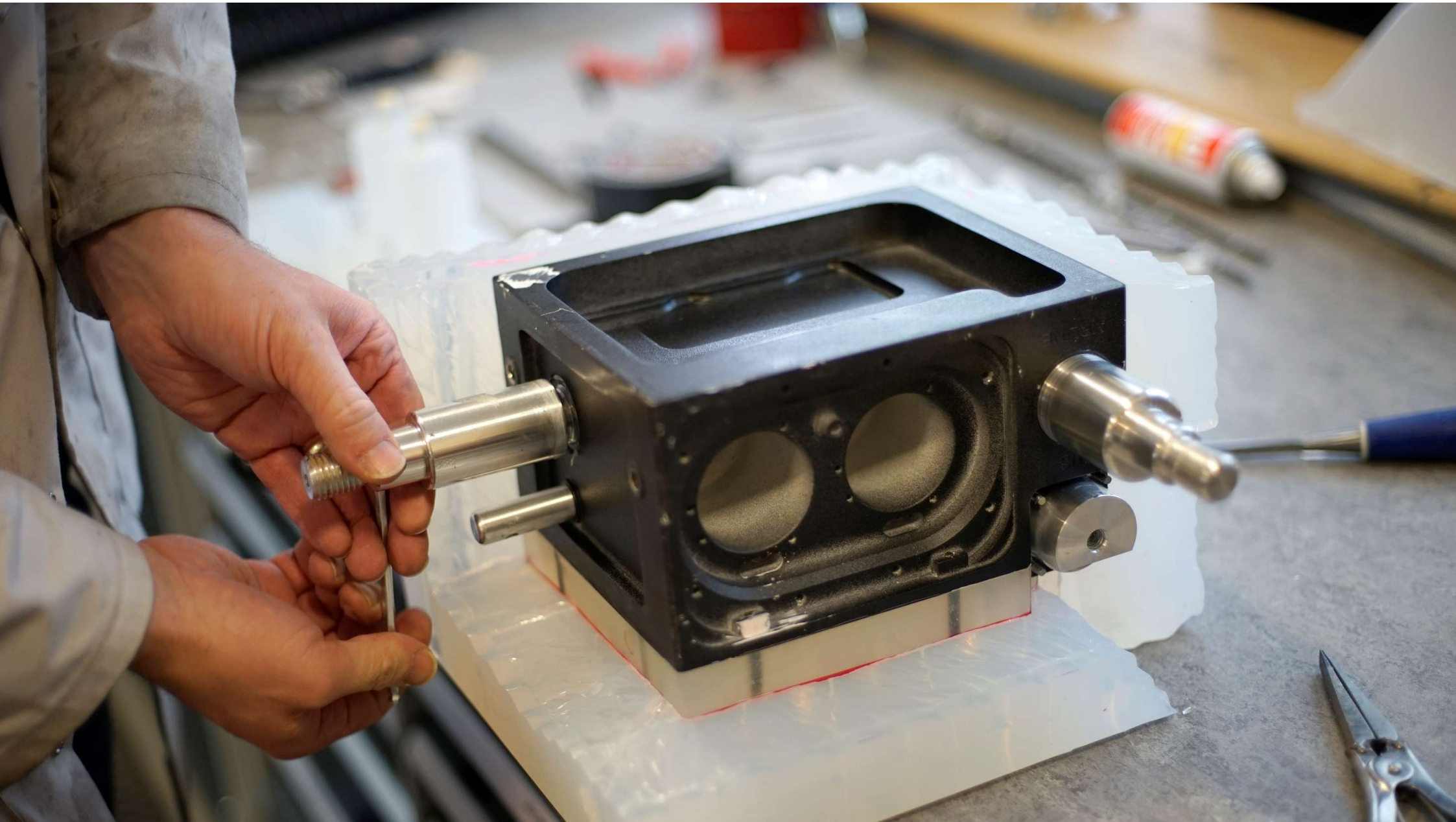


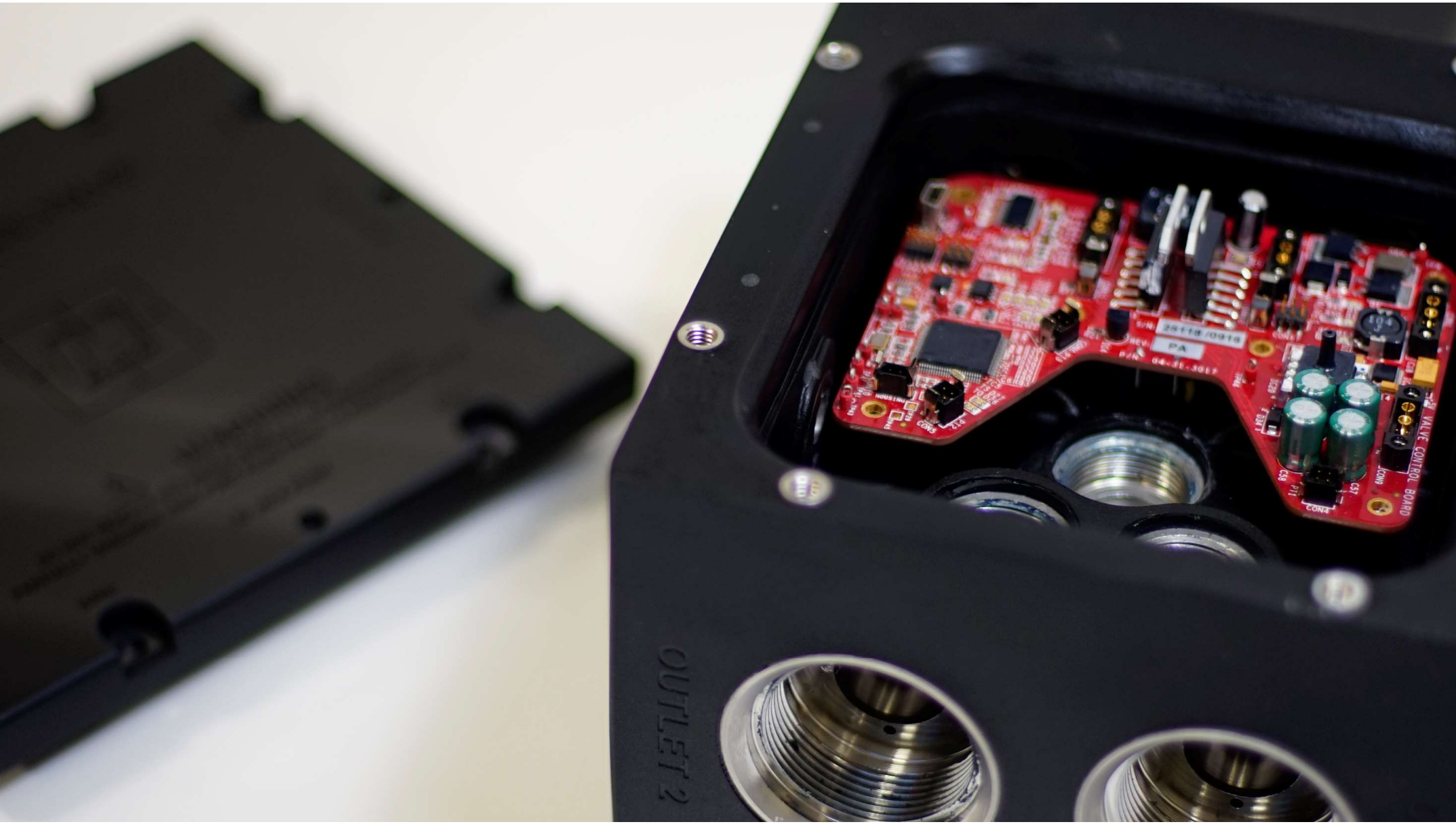


BUS

AIRLINE







OUTLET 2

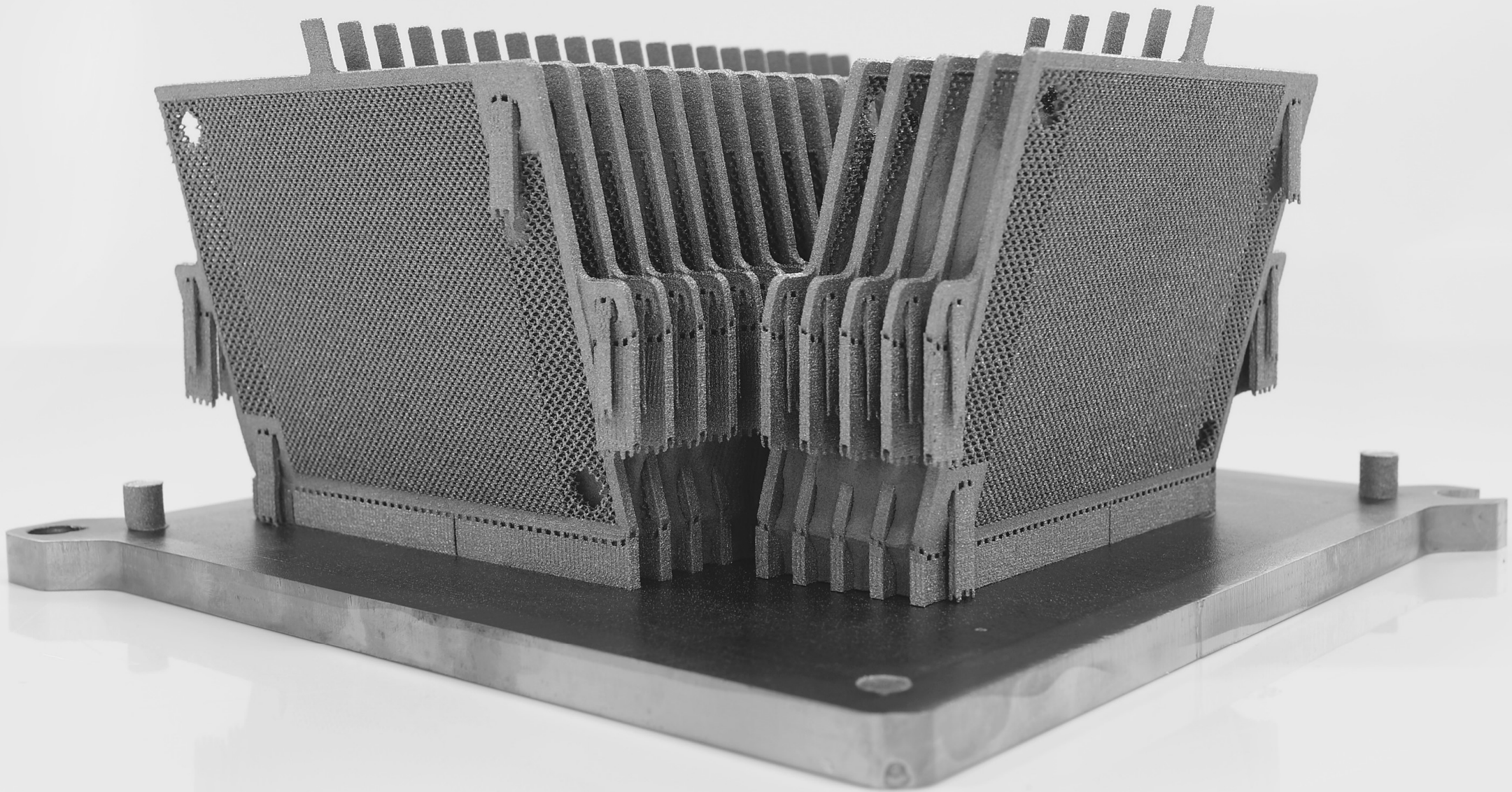
VALVE CONTROL BOARD

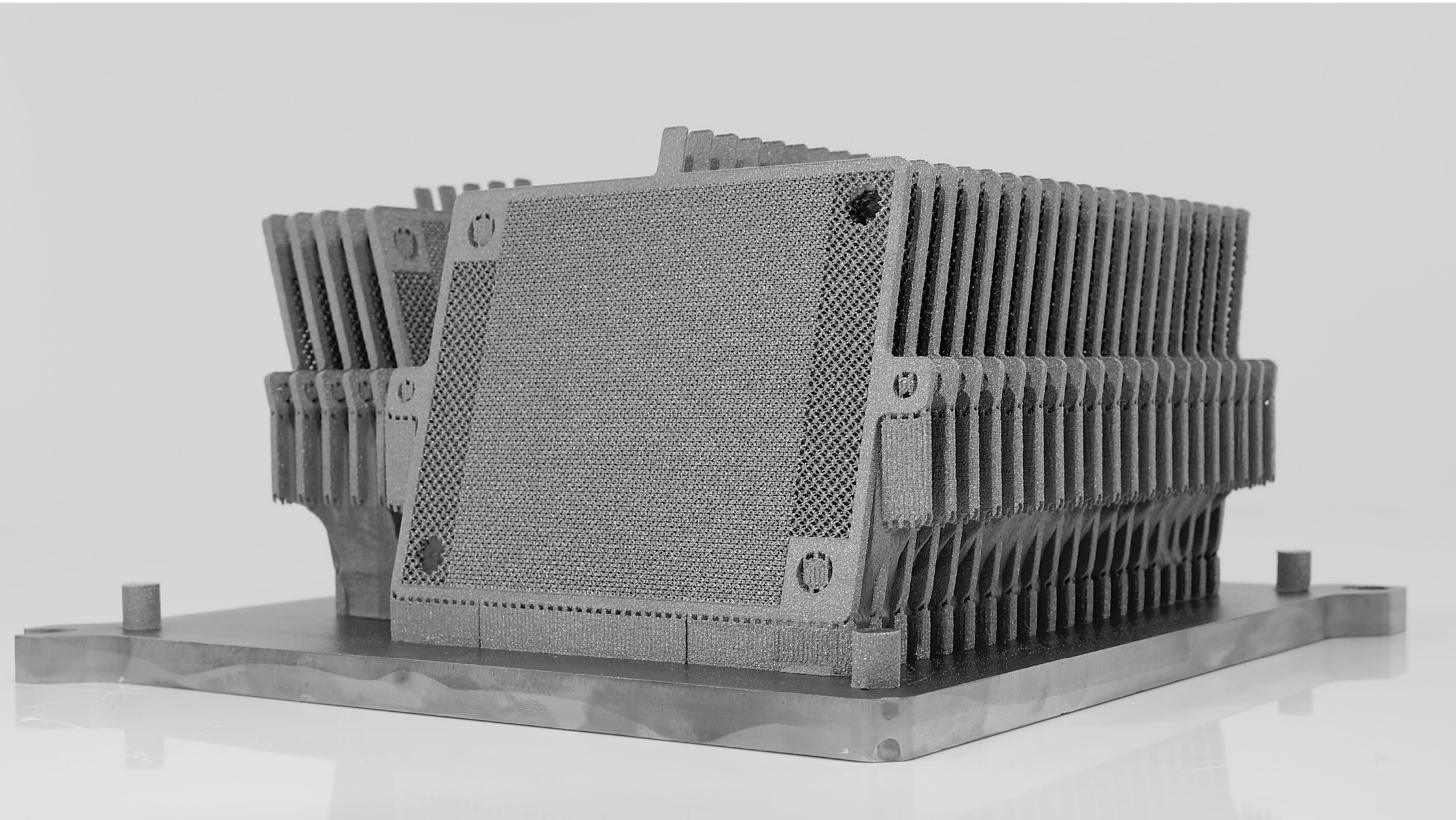
25118 / 0916  
REV: PA  
P/N: 04-01-3017

CS8  
PT1  
CS7  
CON2





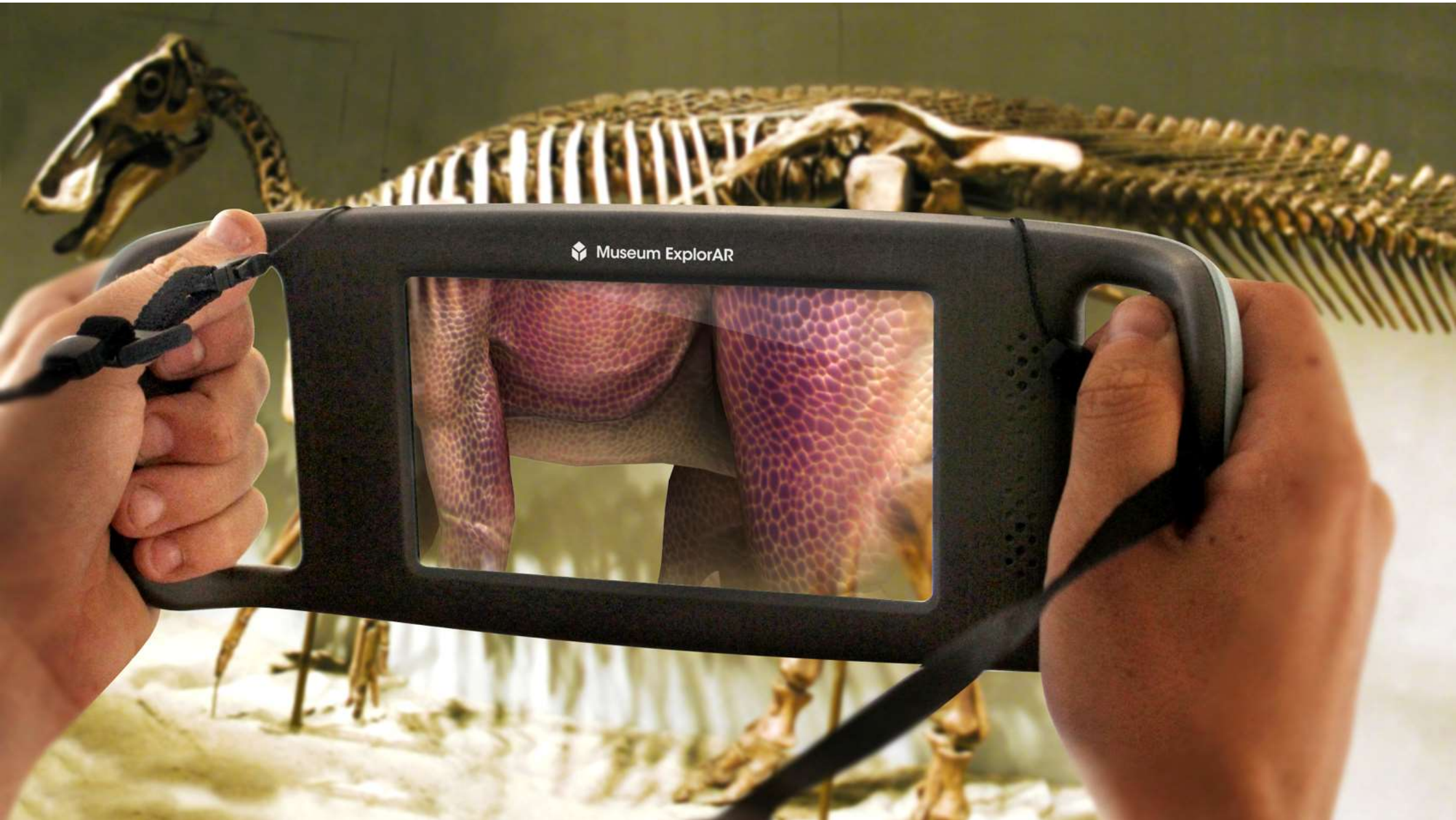




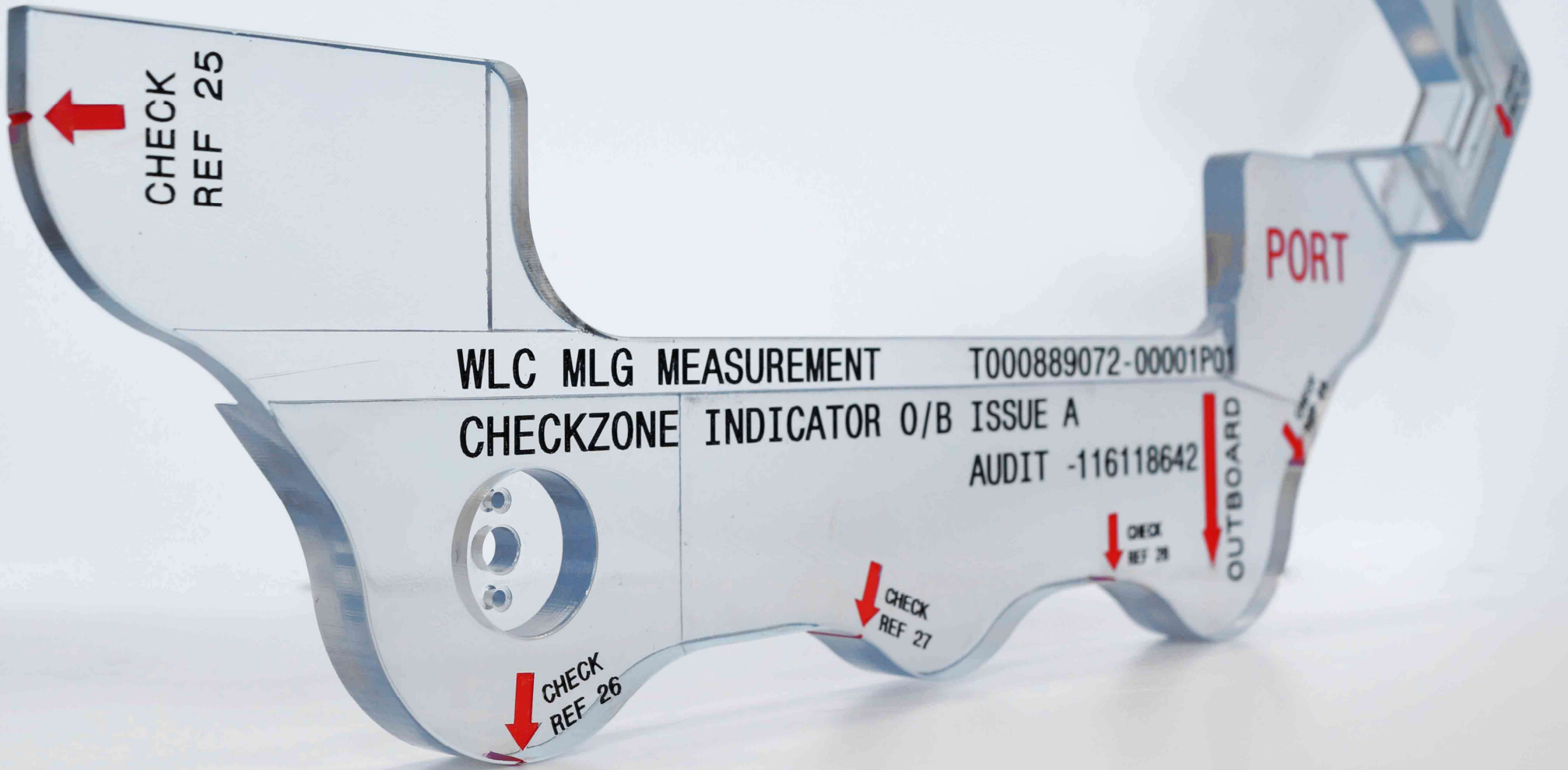








Museum ExplorAR



CHECK  
REF 25



WLC MLG MEASUREMENT T000889072-00001P01  
CHECKZONE INDICATOR O/B ISSUE A  
AUDIT -116118642

PORT

OUTBOARD

CHECK  
REF 28



CHECK  
REF 27



CHECK  
REF 26







CHECK  
REF 28  
4

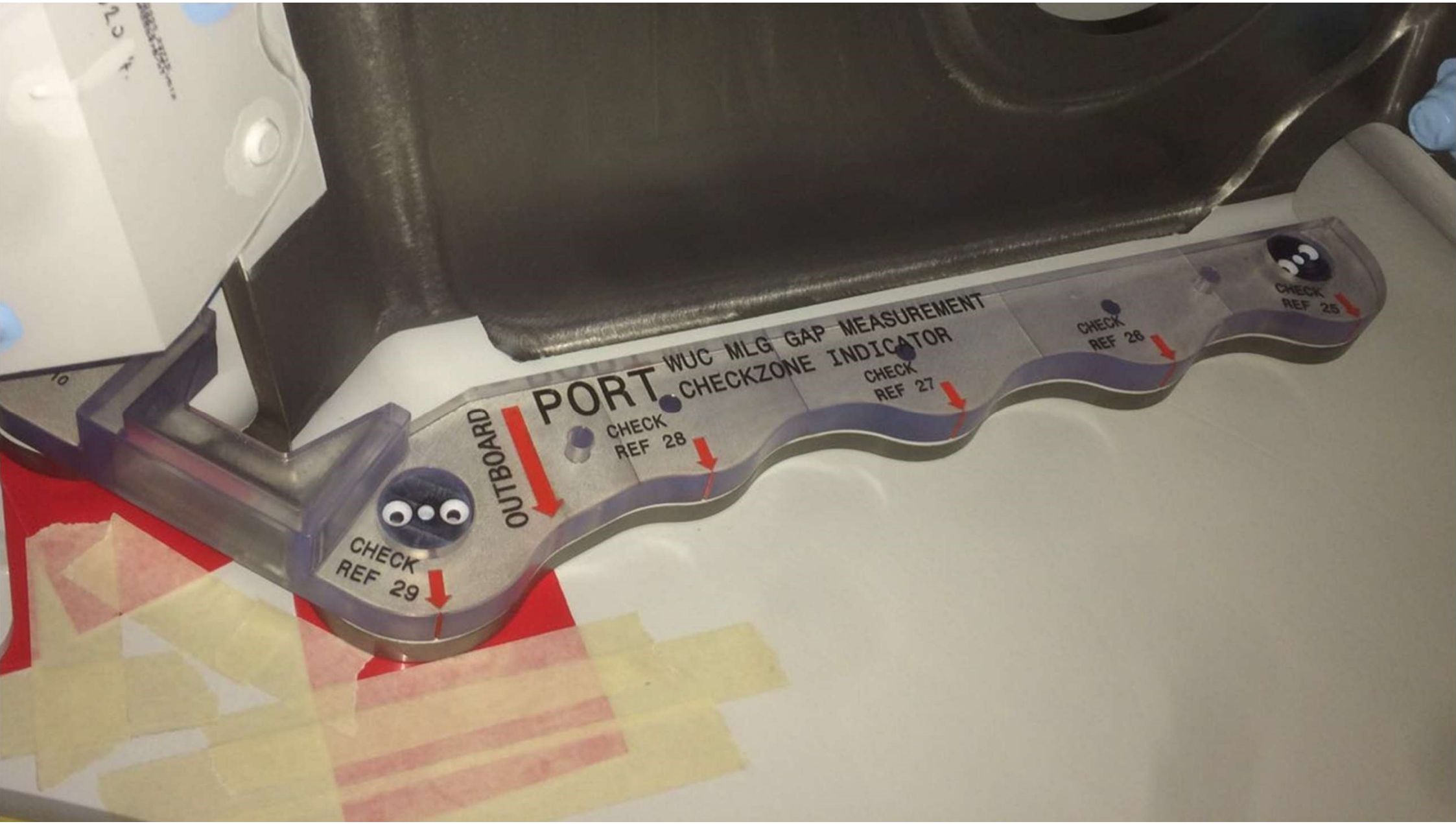
CHECK  
REF 12

STBD

CANTILEVER

WUC - RIB 2

STBD  
ZONE INDICATOR 0.15



PORT WUC MLG GAP MEASUREMENT  
CHECKZONE INDICATOR

CHECK  
REF 29

CHECK  
REF 28

CHECK  
REF 27

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REF 26

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REF 25

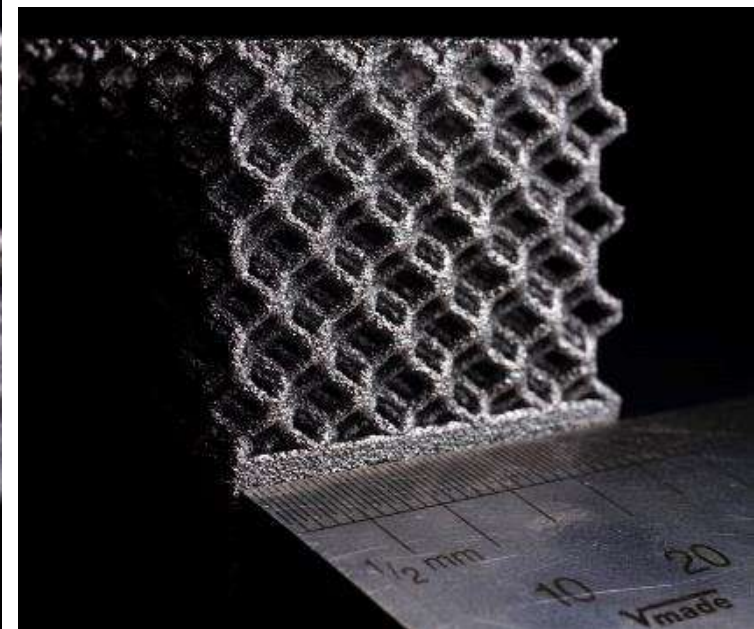
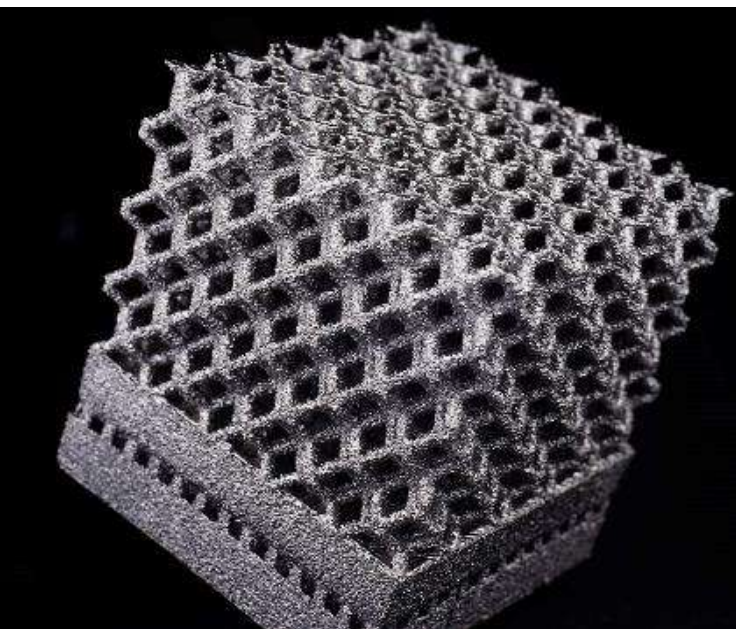
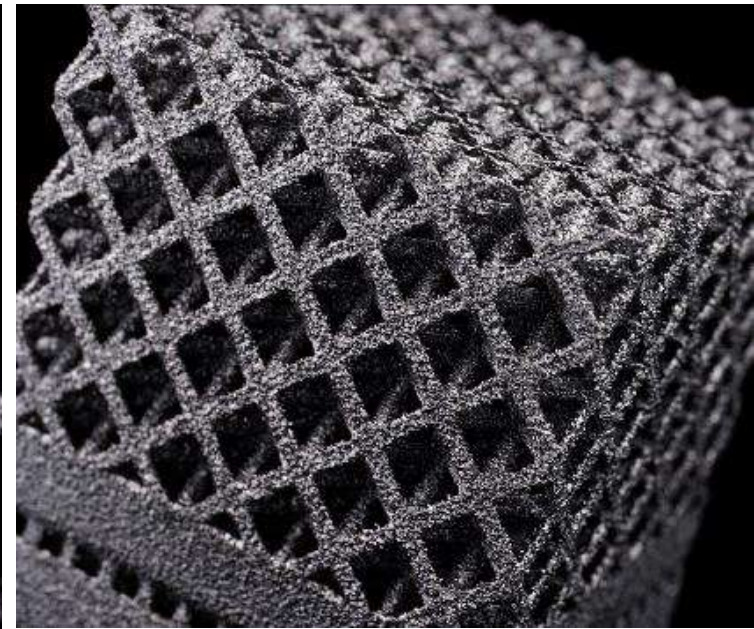
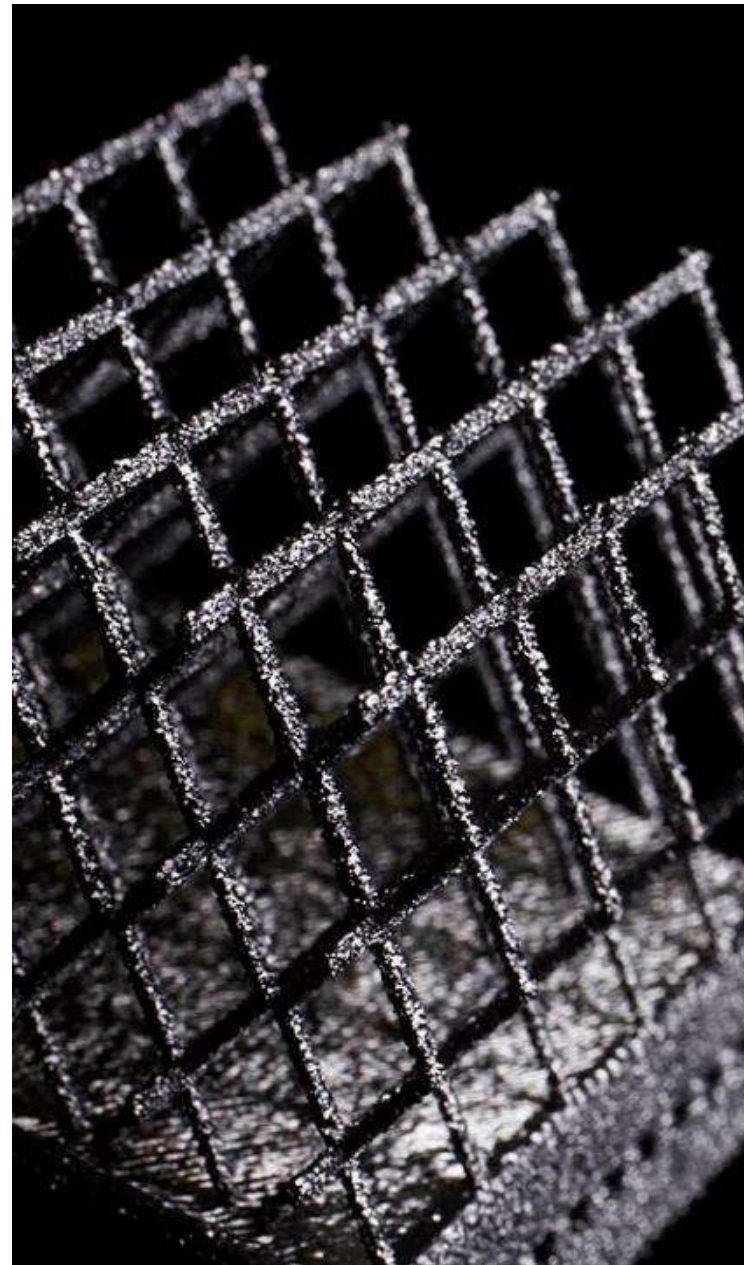
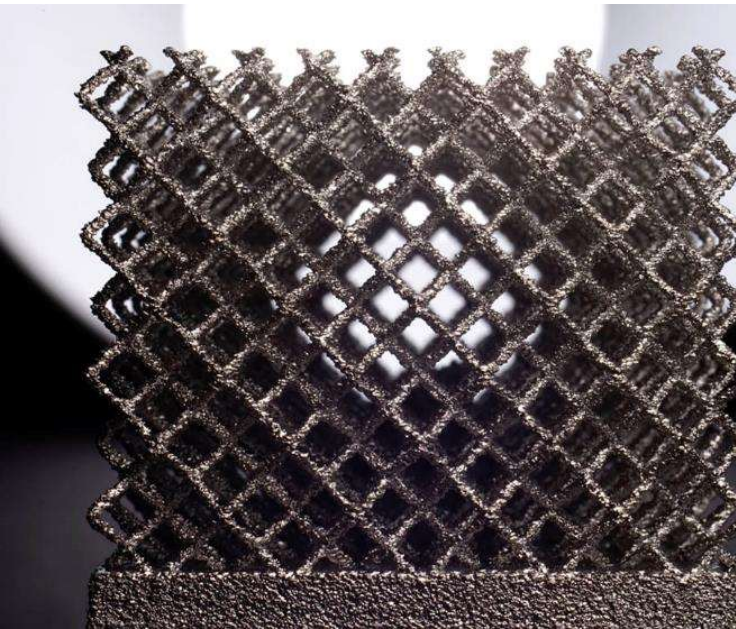
OUTBOARD



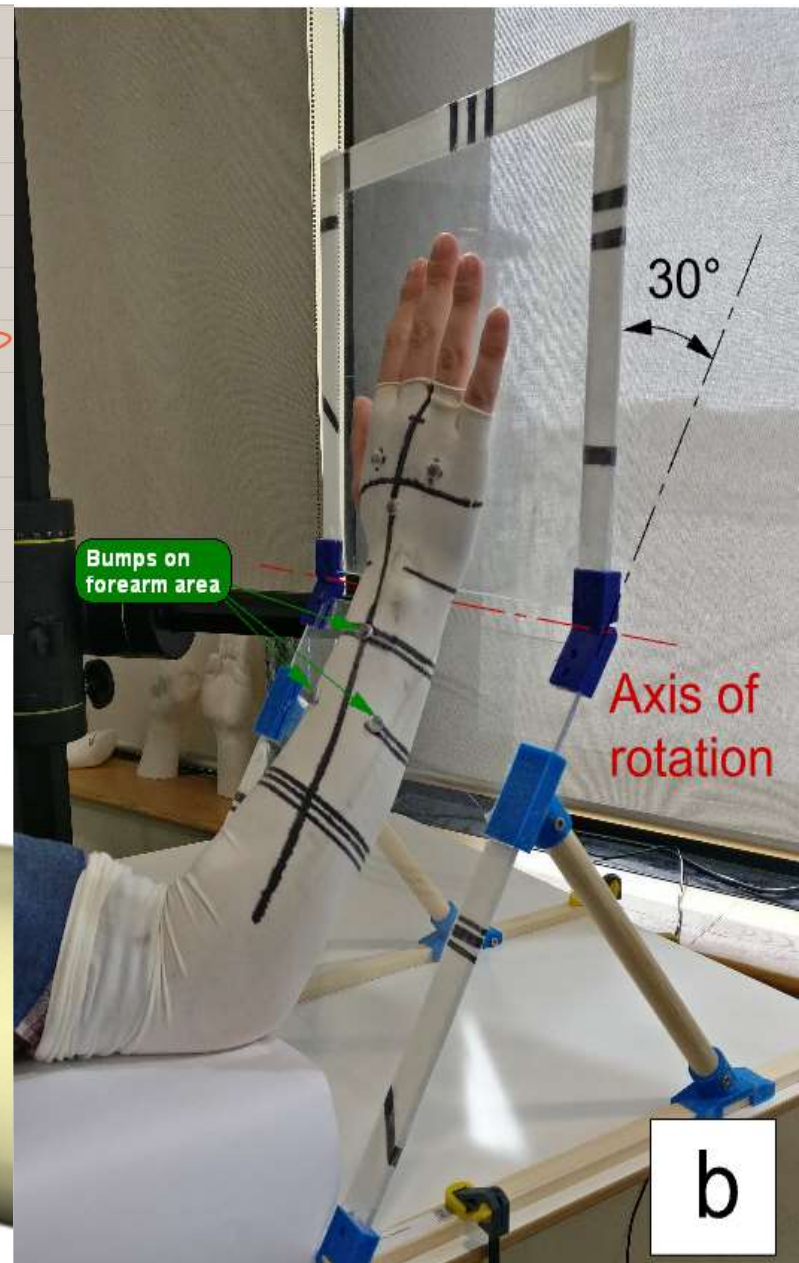
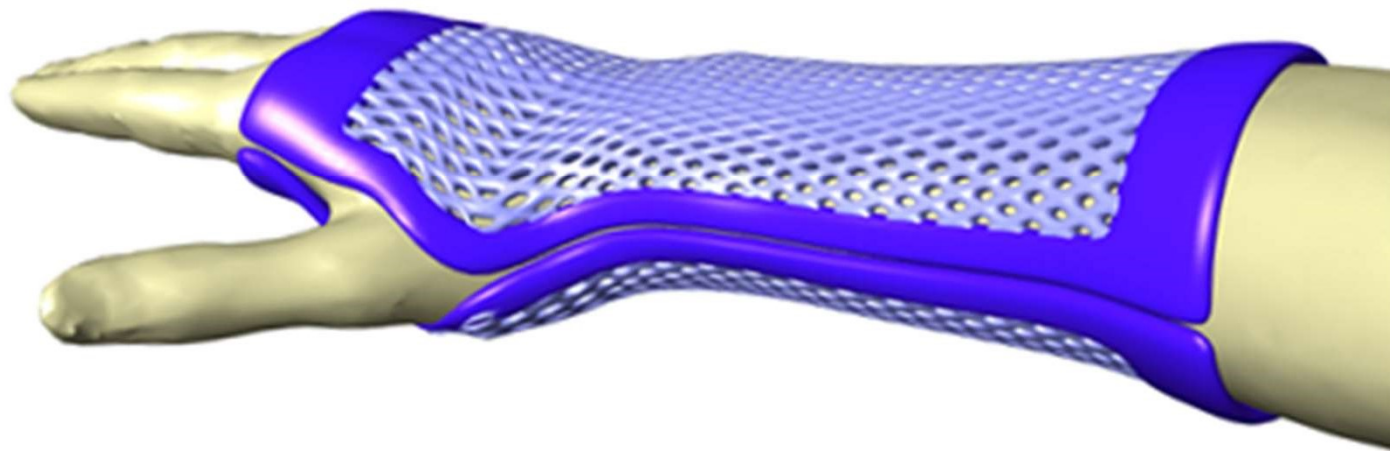
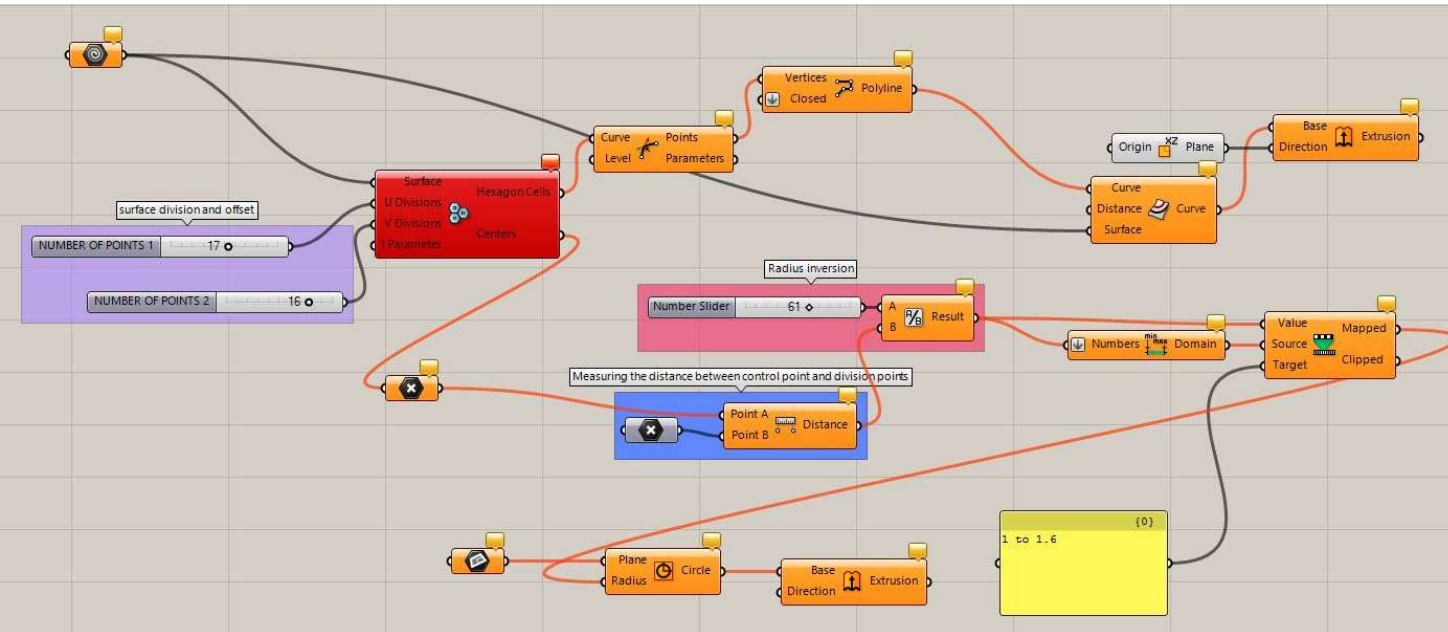








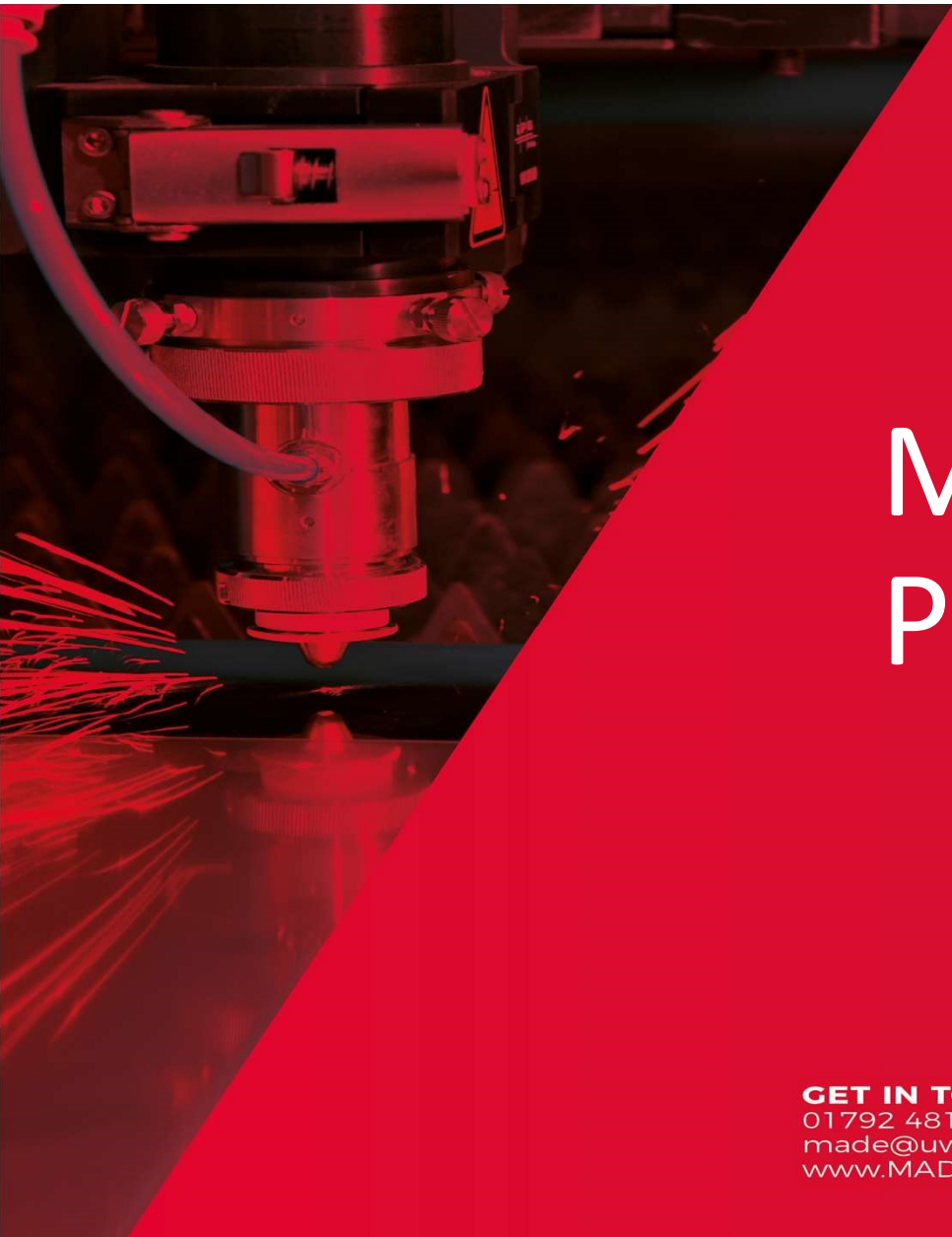












MADE  
GWEITHGYNHYRCHU  
PEIRIAN  
DYLUNIO  
UWCH

MADE  
MANUFACTURE  
ADVANCED  
DESIGN  
ENGINEERING

# MADE Programme

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made@uwtsd.ac.uk  
www.MADECymru.co.uk



**Prifysgol Cymru**  
Y Drindod Dewi Sant  
**University of Wales**  
Trinity Saint David



# The MADE programmes:

MADE is a suite of European-funded projects delivered by University of Wales Trinity Saint David (UWTSD) through its research Centre for Advanced Batch Manufacture (CBM).

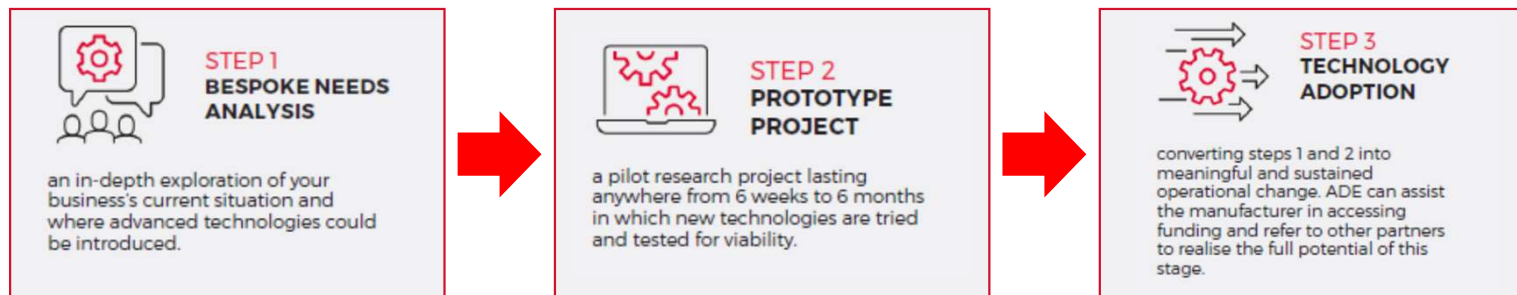
The suite consists of 3 programmes:

1. **Advanced Design Engineering (ADE)**; ERDF
2. **Upskilling for Industry 4.0:Wales (14.0)**; ESF
3. **International Innovation Masters (IIM)**; ESF



# Advanced Design Engineering (ADE)

- How Does it Work?



# International Innovation Masters (IIM)

## Why Innovation Management?

- Innovation management is a rapidly evolving area – there are no fixed definitions.
- International Innovation Management standards (ISO 56000 series) have been published in 2019 to provide some guidance this area.
- Innovation management needs to be multidisciplinary and employ ‘simple’ rules that can be deployed and tested in Welsh industry.

# What is the IIM programme?

- ✓ Will deliver a range of practical skills to manage the complexities and uncertainties that can exist within any Innovation-centred activity.
- ✓ Is primarily for Welsh industry, in particular but not exclusively - for the manufacturing and engineering sector.
- ✓ Has a strong technology focus to the programme as well as addresses the challenges of integrating market and organisational change to a company's economic sustainability and growth.

# What is the focus of Upskilling for Industry 4.0?

- Technology itself is not transformational.
- The focus is on authentic economic benefit.
- Lean Thinking, Six Sigma Strategies integrated with technology.



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