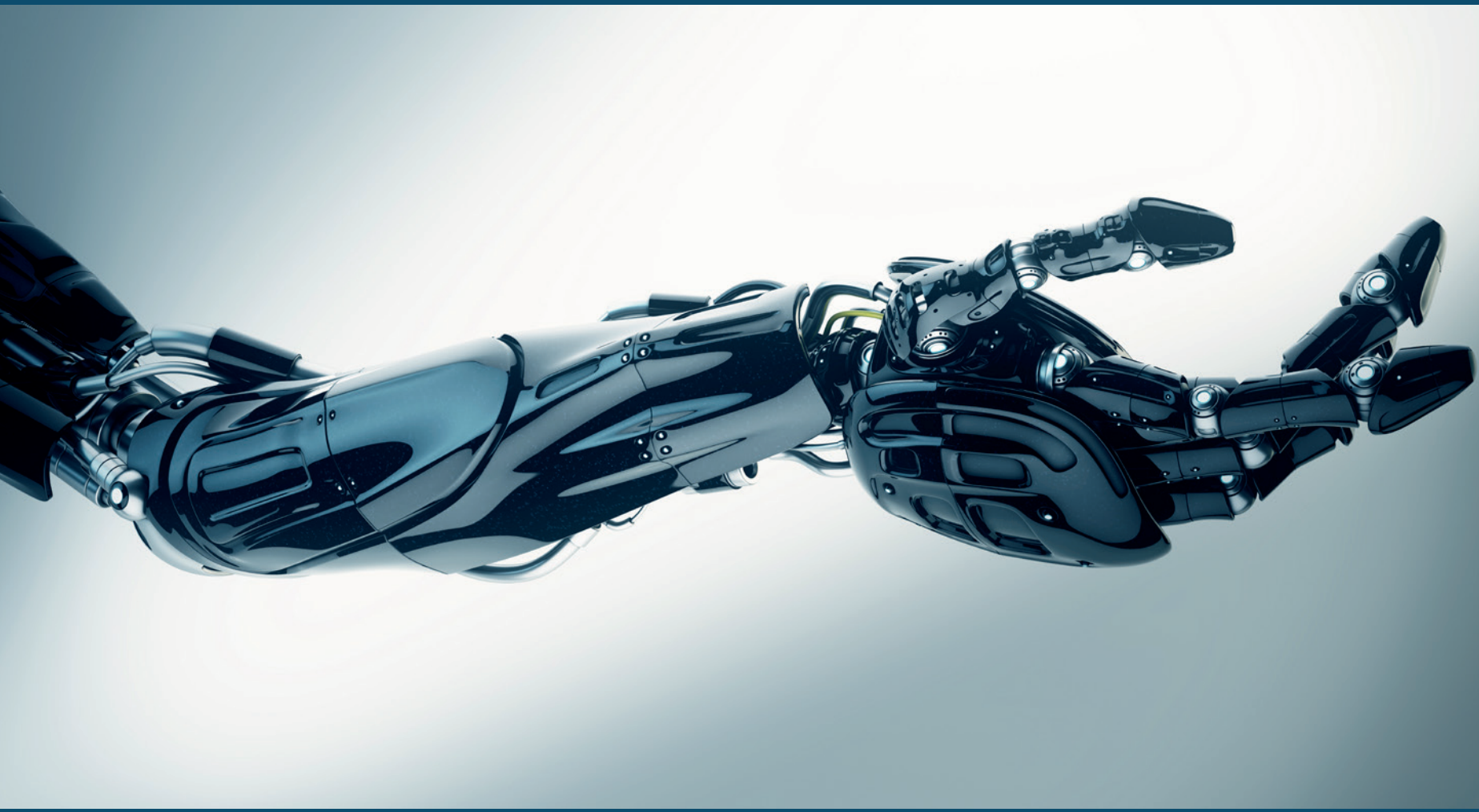

SYLATECH

Engineering your future

## Delivering Global Manufacturing Solutions

**Sylatech is a groundbreaking design and manufacturing business delivering precision custom engineering solutions for our customers.**

Operating from the UK, Sylatech has a global customer base across multiple business sectors including Aerospace, Space, Defence, Medical, Automotive and Construction.

As a trusted partner for delivering high quality systems and components to exacting standards, Sylatech often partners on programmes with several international primes and our customer base spans all tiers of the manufacturing supply chain.

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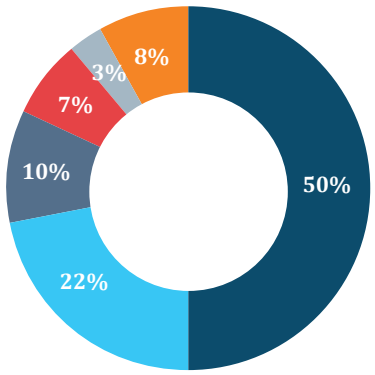
## Our Clients

AIRBUS
COBHAM
HONEYWELL
BALFOUR BEATTY
ROCKWELL COLLINS
SAAB
BENTLEY MOTORS
THALES
TRENDRAIL
AUS

## Our Sectors

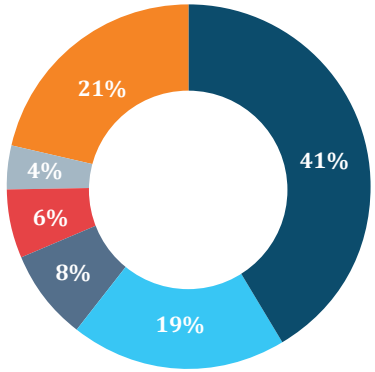
AEROSPACE
DEFENCE
SPACE
SAT COMM
RAIL
COMMERCIAL MANUFACTURING
AUTOMOTIVE & TRANSPORTATION
MEDICAL
SCIENTIFIC & RESEARCH

## SYLATECH TURNOVER BY TERRITORY




- UK
- USA
- GERMANY
- INDIA
- SWEDEN
- OTHER

## SYLATECH TURNOVER BY SECTOR




- AEROSPACE
- DEFENCE
- MEDICAL
- CONSTRUCTION
- SPACE
- OTHER

## Sylatech in Numbers

Throughout 2016 Sylatech manufactured systems, assemblies and components for 228 customers across a diverse range of industry sectors.

Our customer base spans 24 countries globally and total exports account for 50% of our turnover.

The Aerospace and Defence sectors account for almost two thirds of our turnover, both of which are consistently very strong in terms of their annual order value.

As our heritage in the Space market matures, we expect to see strong growth in this sector.

Sylatech is a fantastic global ambassador and demonstrates the strength and quality of British manufacturing.

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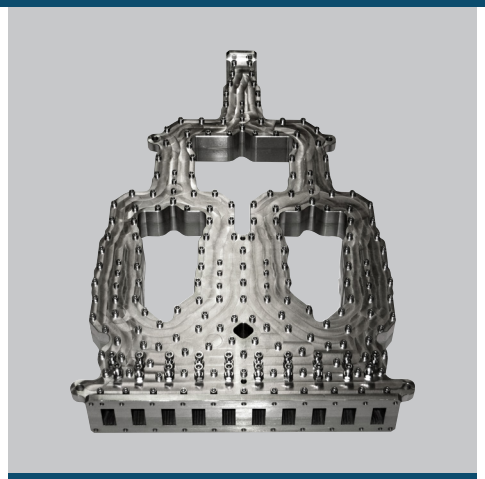
# Our service offering spans four core functions.

## Systems Innovation >

Groundbreaking technological system development.

## CNC Machining >

Advanced engineering of precision components.



## RF and Microwave >

Design and manufacture of sub-systems and assemblies.

## Investment Casting >

Complex component casting and assembly.

## Investment Casting Heritage

- Lost wax process. Also known as investment casting
- Sylatech's casting heritage dates back to 1964 and it's founder, Christopher Shaw, remains today as a technical adviser to the business
- His founding ethos for precision, quality and innovation remains paramount
- As one of the largest businesses in our locality, Sylatech employs a workforce of 119 people. Many of our staff are professionally or apprentice trained engineers
- Sylatech's specialist casting capability excels in the manufacture of small intricate parts, thus offering a global uniqueness
- Our process is highly capable of manufacturing fine detail, thin walled castings, to very tight tolerances that can't be achieved by other casting processes.

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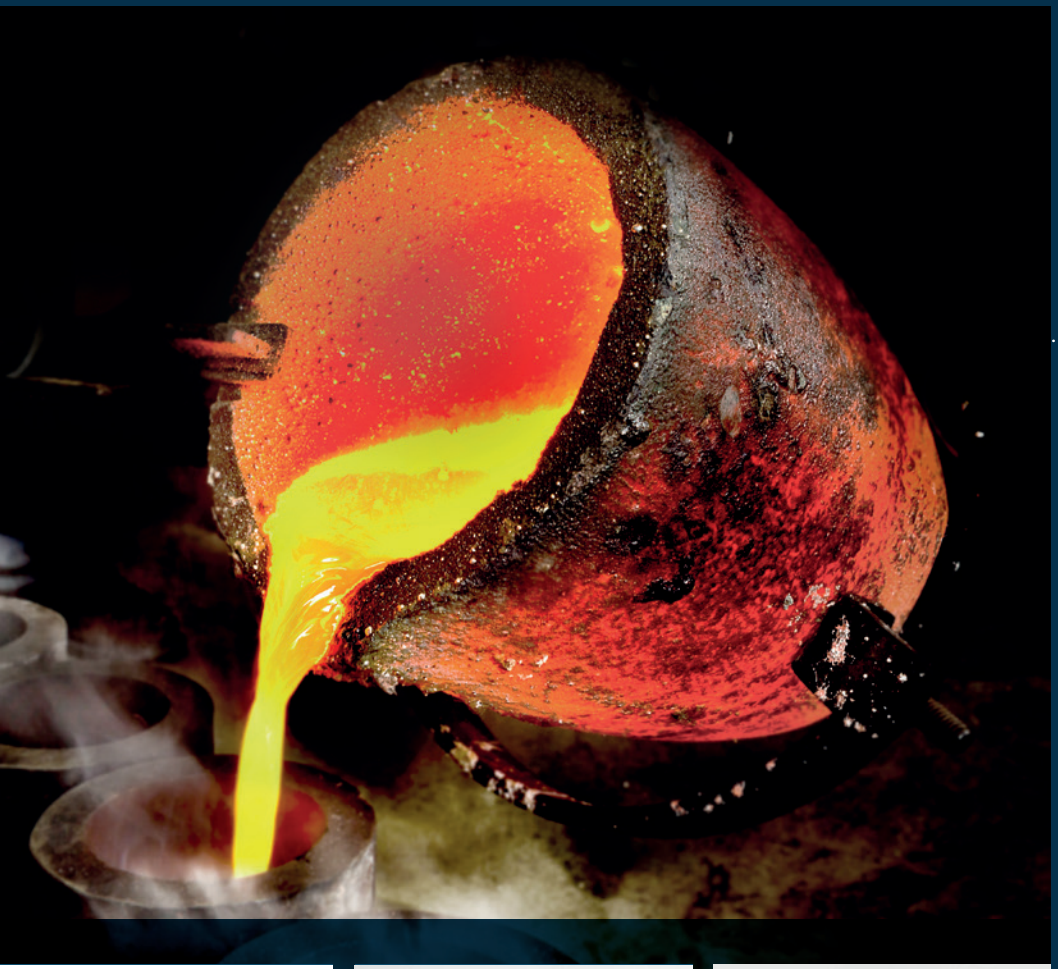

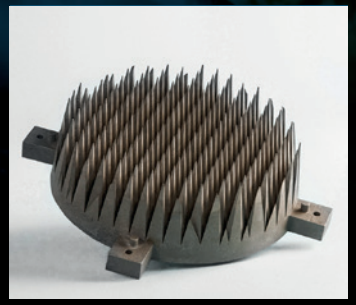

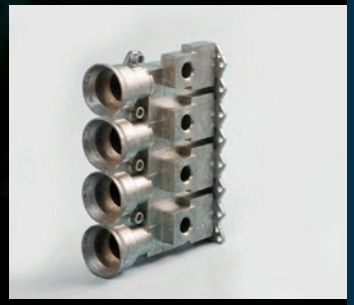

## Sylatech Foundry Process

- Lost wax process. Also known as investment casting
- Plaster investment, block moulding. Differs from the shell investment process
- Non ferrous alloys of aluminium and brass

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## Sylatech Process Benefits

Reduced overall costs by designing for manufacture


High quality details, finish and specification

Affords design flexibility

Reduced time to market

## Sylatech Process Capability

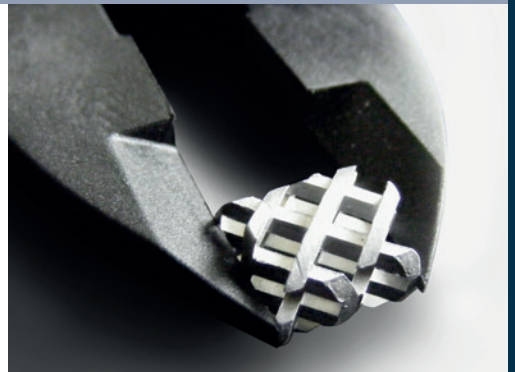
- Complex detail on internal and external features

- Ideal for small or micro components

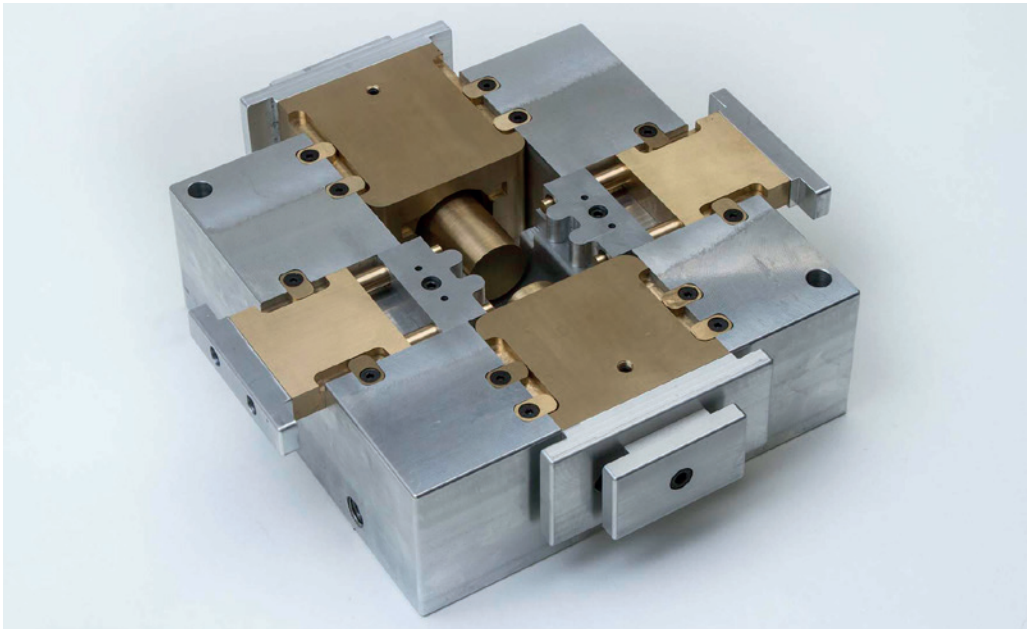
- Thin walls as fine as 0.2mm (0.008") typically 1-3mm

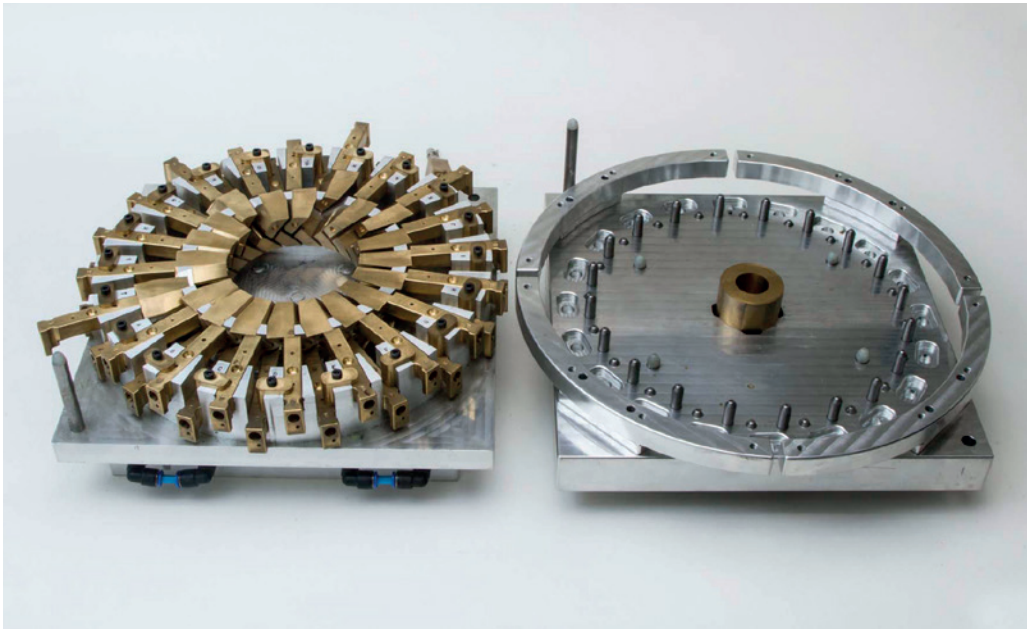

- Super fine finishes to 1 µm

- Complex wax assembly



- Light weight components





## In-house Tooling

> Low cost tooling made from aluminium

> Short lead-time. Typically within 2-5 weeks

> Manual tooling
- Where volumes are unlikely to exceed 1,000 off per annum

> Automatic tooling
- Useful for parts where high quantities are needed

> Multi-part coring
- Produces internal features by using split cores

> Multi-impression tooling
- Enables parts to be made quickly and economically without sacrificing detail

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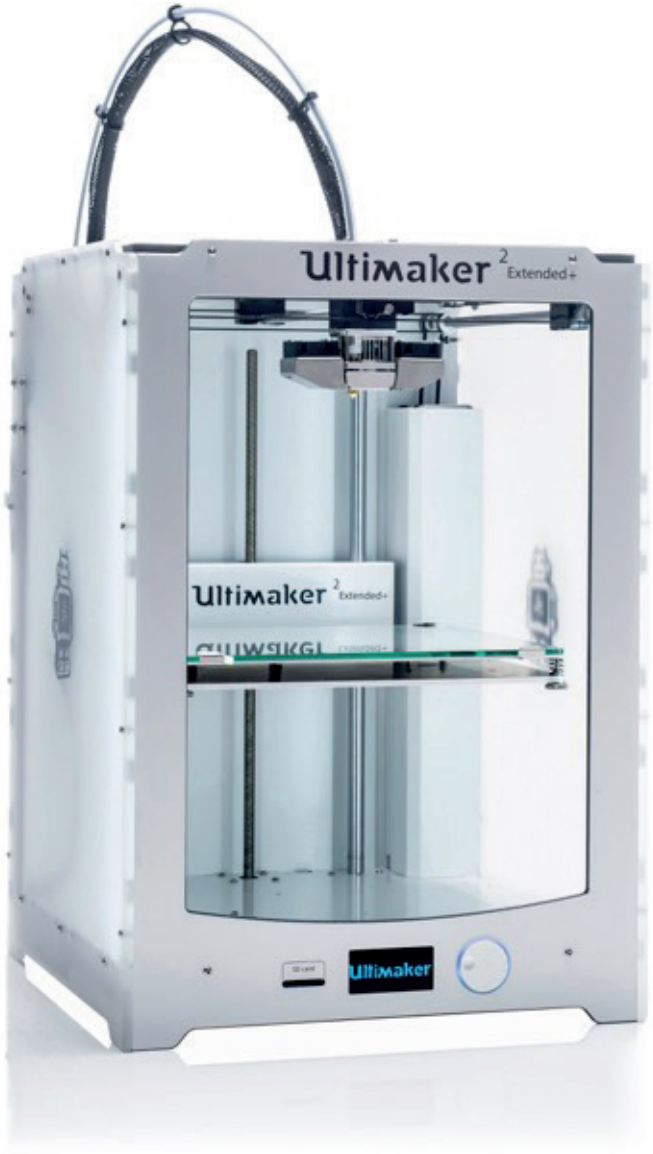


## Rapid Prototyping

- 3-D printing of parts through an additive layer building process
- Delivery of investment cast prototype parts within 10 days
- Delivers high accuracy castings with smooth surface finish
- Cost effective process

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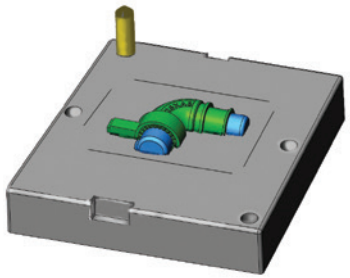
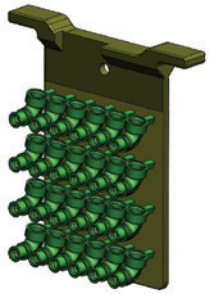
## 1 WAX INJECTION

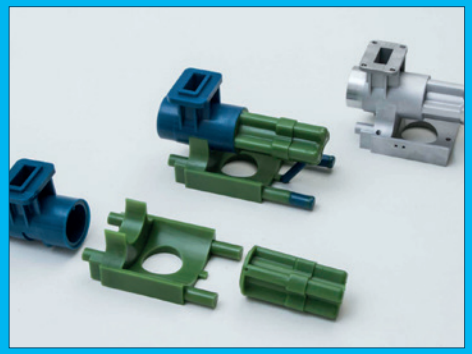


## 2 WAX PATTERN


## 3 WAX TREE



**Wax patterns fixed to runner system to form tree.**



## Wax Process

- 12 wax machines
- Soluble wax capability
- Wax assembly where required

# INVESTING


**Foundry box filled with plaster in vacuum chamber.**

## Boxing and Investing

- Foundry box acts as a container for ‘investment’
- Investment plaster enables a fine surface finish
- Vacuum assisted to remove air
- Fast processing time
- Ideally a maximum size of 190mm x 160mm x 160mm

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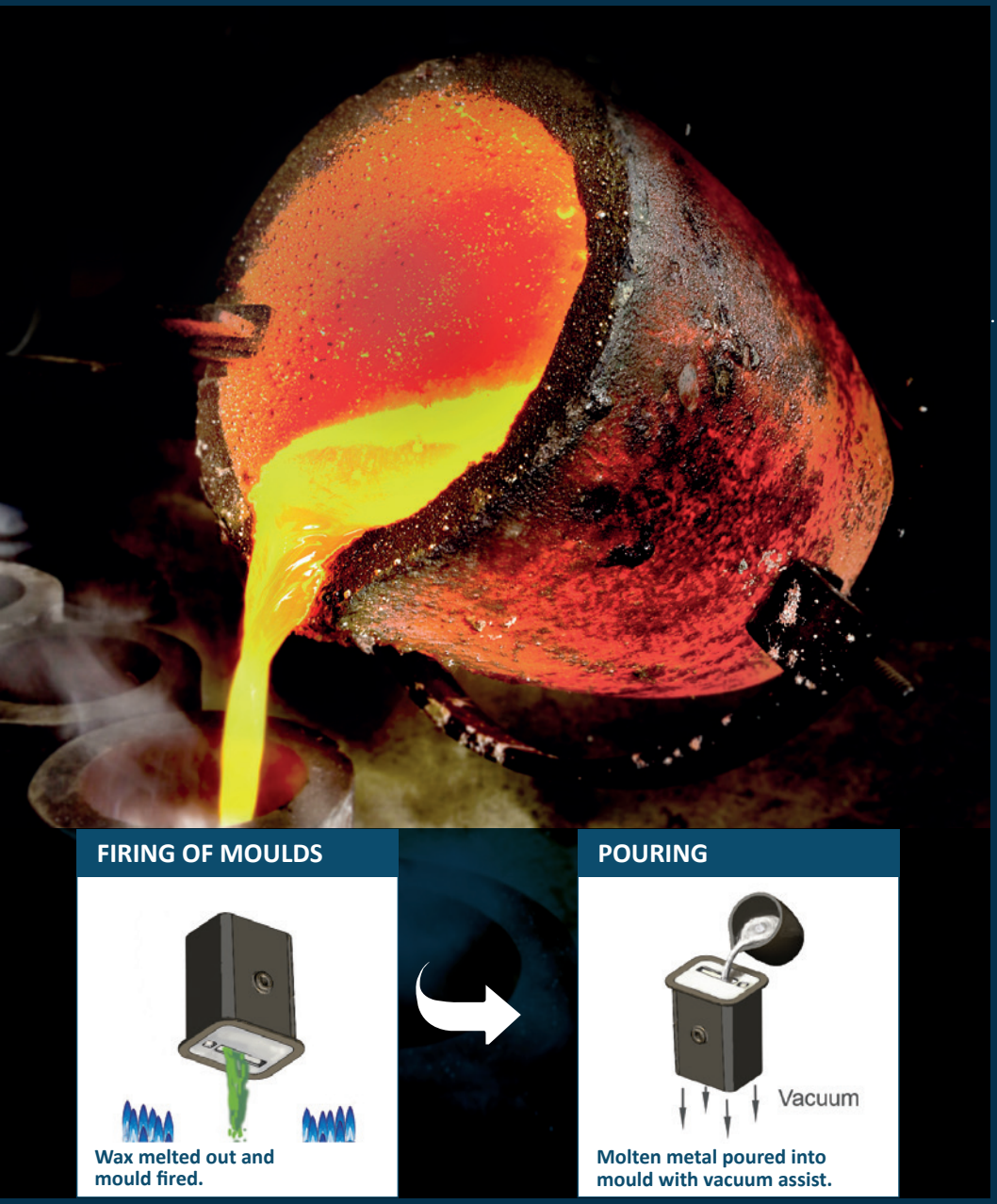


## Mould Firing and Pour

- 50 boxes per oven
- Slow transition to pouring temperature
- 18 hour oven cycle up to 700°C
- Vacuum assisted pour
- Aluminium alloys including A356, LM31
- Copper alloys including MB1, AB2 and HTB3

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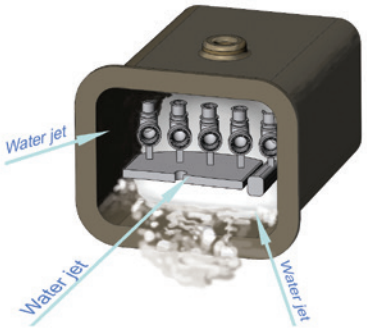
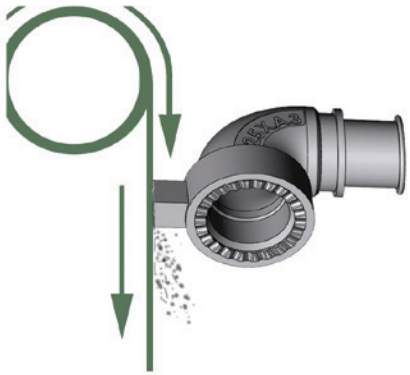
## 1 WASH




**Mould material removed and metal tree washed.**

## 2 SAW

## 3 DE-GATING



## Post Processing

- Bosh
- Linishing – feedgate removal
- Heat treatment
- Sizing
- Blasting/rumbling

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## Machining

- 10 x Fanuc Robodrills
- 4 x Mazak
- 3 x Lathe
- 1 x wire eroder
- 1 x CNC spark eroder
- 1 x Mitutoyo CMM
- Renishaw probing on all Fanuc machining centres

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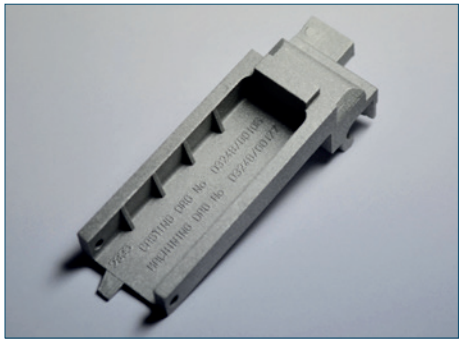
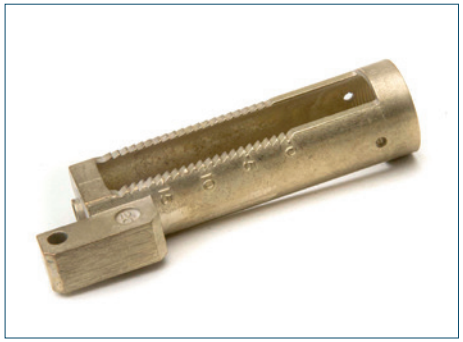
Raised lettering/instructions

Label recess



Drg. no. and issue on recessed pad



Graduation markings


Recessed lettering


Logo, no., date raised on recessed pad

## Labelling and Surface Treatment

- Integrated labelling
- Alochrome
- Anodising
- Plating
- Hipping
- Impregnation
- Paint/Powder Coating

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## Quality

- AS9100C certification
- Nadcap certification for Torch Brazing
- Fully automated CMM with SPC Software
- Full batch metal traceability

bsi. AS/EN 9100 Series Aerospace

Accredited Nadcap™

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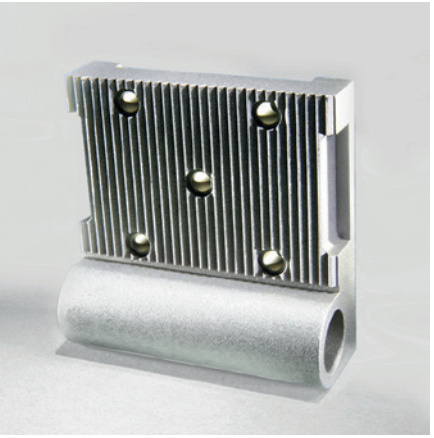
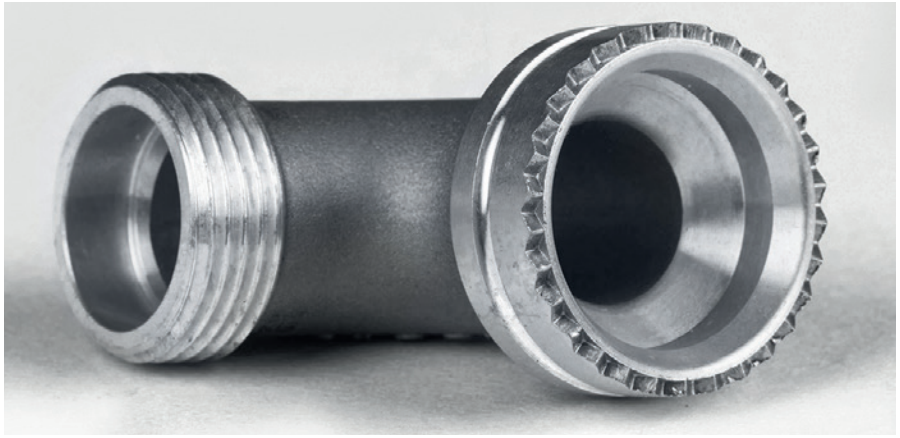
# ENGINEERING YOUR FUTURE





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Kirkdale Road,
Kirkbymoorside, YO62 6PX
E: info@sylatech.com
T: +44 (0) 1751 432 355
**www.sylatech.com**