



CASTINGS TECHNOLOGY

expertise you can rely on



castingstechnology.com



www.CastingsTechnology.com

Mission Statement

To create world-class casting solutions for mission-critical applications.

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Pioneers in patternless casting technologies



World-class castings: The UK's only titanium investment castings foundry

Castings Technology is dedicated to operating in the global supply chain, from aerospace, defence, oil and gas, and power generation OEMs through to local SMEs.

We employ highly qualified engineers and technicians specialising in state-of-the-art design and simulation, for the casting of components in titanium and ferro-based alloys.

Castings Technology is situated in a purpose-built 10,000sqm facility on the Advanced Manufacturing Park in South Yorkshire. However, in late 2026 it will move to a new, 100,000sqm, state of the art facility in Sheffield.

Castings Technology can support your business with:

- new component development from an initial concept
- creating prototypes before committing to production tooling
- converting parts machined from solid, fabricated, forged, or other means, to a near net shape casting
- redesigning an existing part or assembly to improve castability and/or structural properties.

To find out how your company could benefit:

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Titanium Castings

– a unique capability

Castings Technology manufacture high integrity titanium investment castings. This is unique in the UK and is one of the largest facilities in the world.

We have extensive experience in the manufacturing of castings for diverse sectors such as aerospace, automotive, chemical, defence, marine, and oil and gas sectors.

Castings Technology produce one-off, low rate initial production (LRIP) and volume manufacturing of titanium castings with a range of melting capabilities up to 1,200kg.

We provide large-scale titanium aerospace castings such as intercases, bearing housings, structural components, and engineered parts weighing up to 500kg finished weight.

We produce components using investment casting techniques based upon either traditional wax tooling or our range of additive technologies.

Our melting and casting processes are supported by inspection, metrology and metallurgical services; with the ability to conduct post-cast processes such as vacuum heat treatment, welding, and sub-contract finish machining.

Titanium is the future!



Capabilities

- Quality Management System certified to AS9100D (EN 9100:2018)
- NADCAP accredited for aerospace, defence and related industries, including accreditations for vacuum heat treatment (AC7102), welding and NDT
- Certified castings can be produced in Ti 6Al-4V (ASTM B367 C-5) and its alloys
- Ability to produce castings from other reactive alloys, including Ti-1.5Al, TiXT, Ti 6-2-4-2, Ti 6-2-4-6, Ti 10-2-4, Ti 5-5-5, nitinol, gamma titanium aluminide and zirconium alloys



"Thanks to the capability of the technologies used and the experience and knowledge of their engineers, Castings Technology, working closely with the BAE Systems design team, were able to support an extremely tight manufacturing timescale and produce acceptable 'flight worthy' castings on the first iteration, reducing both cost and lead-time".

Tom Little, BAE Systems





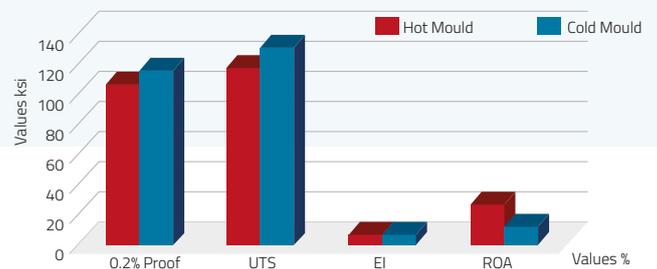
Casting Factor of 1.0 – cast titanium properties vs forging

Castings Technology's titanium casting process combines an innovative and robust technological foundation with an exceptionally high and repeatable level of quality. This allows designers of structural parts significantly more flexibility through the elimination of previously mandated casting 'Factors of Safety' above a multiple of one.

A combination of advanced equipment, critical process control, and Hot Isostatic Pressing (HIP) leads to a fine, uniform microstructure, capable of equalling or outperforming most properties of wrought (more specifically, forged) titanium alloys.

This quantum leap in casting performance and the scientific research behind it has been recognised by casting designers, manufacturers and users, including OEMs such as Airbus for their A380.

Tensile Properties (Hot vs Cold Mould)

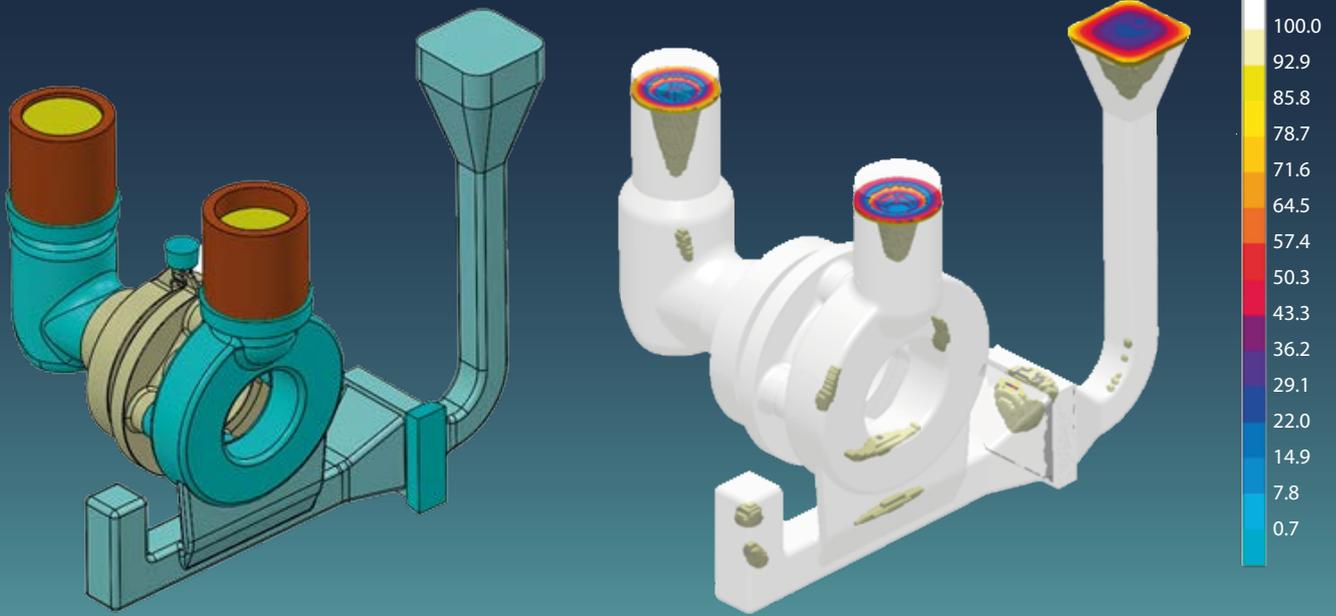


	Temp °C	0.2% P	UTS	EI
Forged Longitudinal	20	124	137	17.5
	200	90	100	18
Cast Unidirectional	20	118	134	9.75
	200	79	99	18.5

Cti proprietary information. Distribution and use without written consent is prohibited.

Ti 6Al-4V Standard	Process	0.2% Proof (MPa)	UTS (MPa)	Elongation (%)
ASTM B381	Wrought	827	896	10
ASTM F3001	ALM	795	860	10
ASTM B367	Cast	827	896	6
Cti Castings (ave)	Cast	892	1010	9.09 ± 4.78

"Casting factor of one" widely accepted



Design for Casting

Our Casting Design Centre provides expertise in cast alloys and their properties, together with mould pattern design and associated manufacturing techniques.

Our team helps minimise the cost, time, and risk involved in progressing a concept design through to full scale production or improving an existing design.

Using advanced software to simulate the casting manufacturing process, our design engineers optimise designs to facilitate the production of components to exacting specifications.

They have considerable experience in simultaneous engineering and, via Electronic Data Interchange, work on projects for companies globally.

Castings Technology supports the total project management of castings procurement, assisting you with:

- Design optimisation
- Material selection
- Process selection
- Procurement specifications
- Metrology
- Quality Assurance
- Third party surveillance and manufacture
- Finished Machining

Controlling total cost through optimisation



Replicast® and MEGAshell®

"There were some unplanned challenges along the way, but these were overcome thanks to the technical innovation, the flexible capacity and the 'can-do' attitude of Castings Technology. Had their skills not been available, we would not have been able to source the cast components for the Terminal 5 Project from a UK supplier. We would certainly welcome an opportunity to work with Castings Technology in the future."

Ian Cameron
Operations Director of Schmidlin (UK)

Replicast® is a novel moulding and casting technique developed by Castings Technology.

Replicast® and MEGAshell® processes are ideal for medium to large castings. They enable users to reduce costs through weight reduction, to minimise waste, and meet demands for tailor-made, high-integrity castings, weighing from a few grams to 5 tonnes finished weight and up to ~2m³ whilst improving quality and dimensional accuracy simultaneously.

The process replaces conventional wooden patterns with dimensionally precise replicas made from expanded polystyrene or SLA patterns.

Patterns are dipped in a complex ceramic slurry to create a solid, ceramic shell. This shell is significantly thinner than a traditional investment casting shell, but with the same excellent internal surface finish. Shells are surrounded by compacted refractory sand utilising partial vacuum into which molten metal is poured.

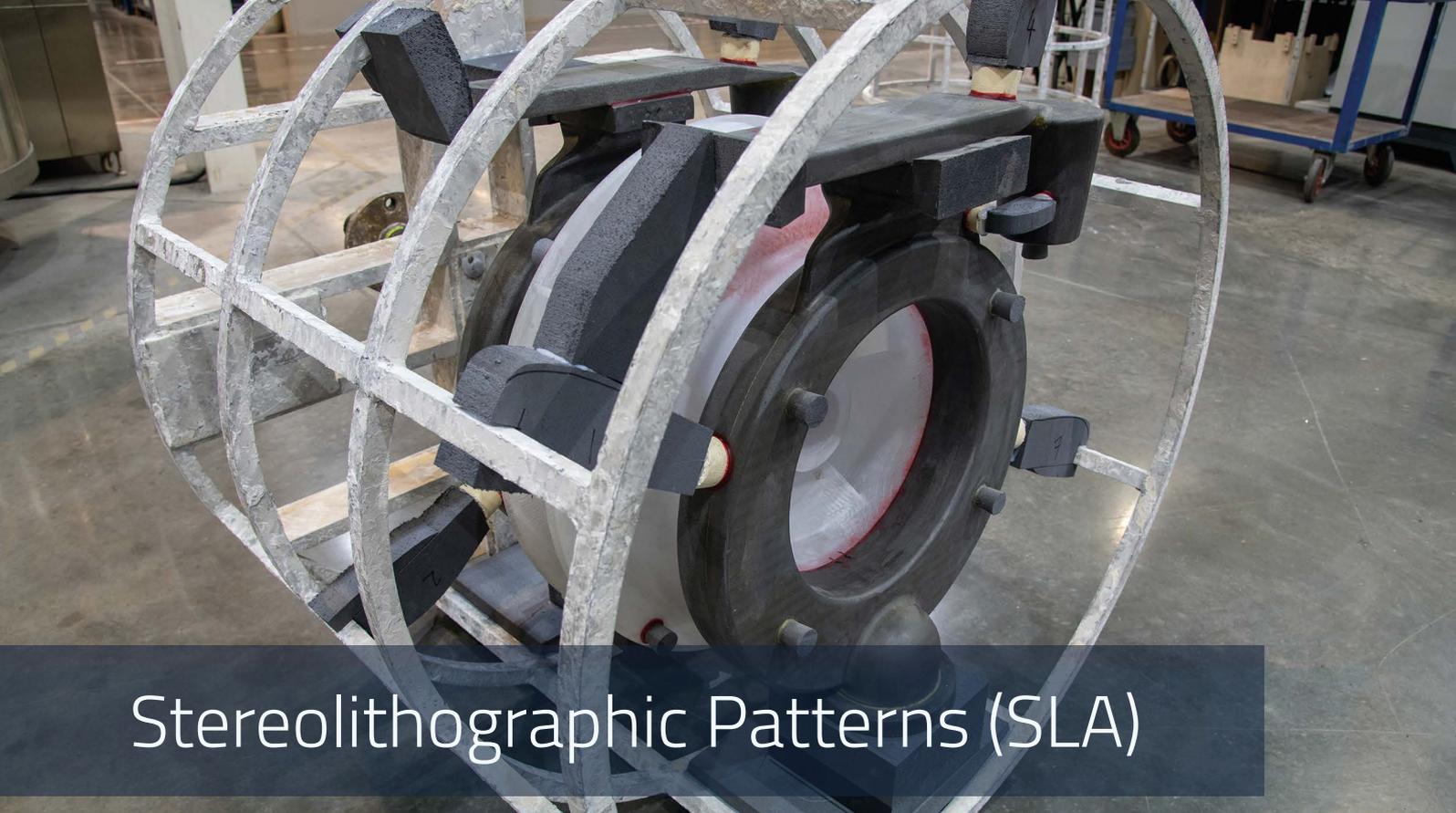
Hundreds of thousands of ceramic moulds have been manufactured using Replicast® (or MEGAshell® where dictated by the size of the component), demonstrating its capability to produce larger castings; particularly in high-performing steel and nickel-based alloys.

Improved melt efficiency and better quality

The process enables the production of castings with a reduced weight versus their sand cast equivalent. Castings Technology will work with you to realise the benefits of these processes.

Benefits

- **25-35% lighter castings dependent on casting configuration**
- **Faster turnaround**
- **Improved surface finish for larger castings**
- **Near net shape castings minimising/eliminating machining costs**
- **Significantly reduced ceramic raw material costs due to thin mould technology**
- **Reduced waste**
- **Improved machinability**
- **Consistently high dimensional accuracy**



Stereolithographic Patterns (SLA)

SLA patterns are ultra flexible and can be used to convert multi-part assemblies into single integrated cast components often eliminating flanges, joints and fabricated structures.



The process uses computer aided design and computer aided manufacturing (CAD/CAM). SLA printed parts are highly isotropic compared to those produced with fused deposition modelling (FDM).

These moulding processes enables rapid new product introduction (NPI) or rapid design changes to be implemented.

Once the design has been finalised this process can be easily converted to hard tooling.



Benefits

- High as-cast integrity
- Excellent surface finish (3.2–7.6 μ m; 130–300 μ m) ISO 8062 CT5–CT8
- SLA patterns can also be used for casting reactive alloys such as titanium and zirconium, in conjunction with an appropriate shell chemistry and furnace.

Confidential Design & Consultancy



Castings Technology provides a wide-ranging confidential consultancy service, offering support in areas such as new foundry design, foundry process review and optimisation, scrap and weld reduction programmes together with multi-disciplined, on-site support.

Over the last 35 years, Castings Technology has developed and made available a wide variety of technologies.

These range from ceramic based moulding systems such as Replicast®, to Master Alloy production and Single Crystal/Directionally Solidified technology.

In addition, we offer a variety of customised rapid casting manufacturing techniques and alloy-specific assistance.

Our technology packages represent a unique capability to allow customers to accelerate process implementation without having to develop them from scratch. Castings Technology's expertise will enable a quicker deployment of the technology leading to a faster more assured ROI.

Benefits

- **Reduction of business risk**
- **Avoidance of unnecessary non-compliance costs**
- **Faster implementation**
- **Long-term expertise and support**

Developing your capabilities

Comparators for the definition of Surface Quality of Castings (SCRATA Comparators)

Providing a practical and functional alternative to photographic representation of casting surfaces in standards such as MSS SP-55-2011. More than 2000 of these sets of comparators are used around the world from small enterprises to multi-national companies.

The durable plastic comparator plates, actual replicas of relevant characteristics of surface finish, have proved to be a more attractive way of reaching agreement with casting suppliers on the required surface quality during contract negotiations.

They also provide a basis for acceptance of the castings after order placement.

The comparators form the basis of ASTM A802/A802M-95 (2006) Standard Practice for Steel Castings, Surface Acceptance Standards, Visual Examination. This standard comprises 31 comparators that define such features as:

- surface roughness (A)
- surface inclusions (B)
- gas porosity (C)
- laps and cold shuts (D)
- scabs (E)
- chaplets (F)
- surface finish - thermal dressing (G)
- surface finish - mechanical dressing (H)
- welds (J)
- hot tears
- mechanical dressing - chipping



	Number of Comparators	Comparator Categories										
		A	B	C	D	E	F	G	H	J	Hot Tears	Chipping
ASTM A802	31	1-4	1, 2, 4, 5	1-4	1, 2, 5	3, 5	1, 3	1, 2, 3, 5	1, 3, 4, 5	1, 2, 3, 5	-	-

A larger, 48 comparator set applies to **ISO 11971:2008 Steel and Iron Castings – Visual examination of surface quality**; **BS EN 1370:2011 Founding – Surface roughness inspection by visual tactile comparators**. (Companies that already have the 'short' ASTM A802 set can upgrade to the larger set by purchasing the 17 additional comparator plates).

	Number of Comparators	Comparator Categories										
		A	B	C	D	E	F	G	H	J	Hot Tears	Chipping
Full Set	48	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-2	1
Upgrade to Full Set	17	5	3	5	3, 4	1, 2, 4	2, 4, 5	4	2	1, 2, 3, 5	1-2	1

A third set of 14 comparators, the basis of **BS 7900:1998 Specification for examination of the surface texture of precision steel castings**, is applicable to the procurement of steel castings manufactured by precision casting techniques:

- resin shell process (V)
- lost polystyrene process (W)
- Shaw process (X)
- lost wax process (Y)
- fettled surface (Z)

	Number of Comparators	Comparator Categories				
		V	W	X	Y	Z
Precision Steel Castings	14	1-3	1-3	1-3	1-2	1-3



Prices available upon request.

Removal of subjective assessments of a surface finish

Process Reference Index

- ✓ Capability
- D In Development

			Materials											
			Carbon & LA Steel	Martensitic Stainless	Austenitic Stainless	Duplex/Super Duplex	Alloy Steel	Super Austenitic	Cobalt based	Nickel (Air Melt)	CP Titanium	Titanium 6-4	Titanium 6-2-4-2	Titanium Aluminide
Processes	Fast Make	Quickcast®	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	D
		CNC Machined Polystyrene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	D
		Replicast®	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Conventional	Sand	✓	✓	✓	✓	✓	✓	✓	✓				
		Investment/ Lost Wax	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	D
	Special	Centrispun									✓	✓	✓	D
Capability	Melting Capability	Minimum (kg)	10	10	10	10	10	10	10	10	18	18	18	18
		Maximum (kg)	2200	2200	2200	2200	2200	2200	2200	2200	1200	1200	1200	90
	Part Weight	Minimum (kg)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.05	0.05	0.05	0.05
		Maximum (kg)	900	900	900	900	900	900	600	600	450	500	500	15
	Section Thickness	Minimum (mm)	5	5	5	5	5	5	5	5	1	1	1	
		Maximum (mm)	300	300	300	200	200	150	150	200	100	200	200	
	Surface Envelope	Maximum (mm)	1500	1500	1500	1000	1500	1000	1000	1500	1000	1000	1000	
	Surface	Best, Ra	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	5	5	5	
	Dim+w19+B22:X +B22:X22	Best Accuracy (Geometry Dependent)	DCTG6-8	DCTG6-8	DCTG6-8	DCTG6-8	DCTG6-8	DCTG6-8	DCTG6-8	DCTG6-8	DCTG6-8	DCTG6-8	DCTG6-8	

Key People

Kevin Parkin | Chairman

In January 2021, Kevin and Richard Cook, Managing Director, undertook an MBO at Castings Technology International Ltd with Kevin taking the position of Executive Chairman.

In addition to his role at Cti he is an Engineering and Manufacturing Expert for the Leviathan Engineering Group

In 2015, he led a Panoramic Growth Equity backed MBI of Precision Technologies. After transforming the business from private to VC ownership, Kevin exited the business after 24 months.

In 2008, he led an MBO of Davy Markham which was backed by Endless LLP where the equity investors realised a 13.5 times return in 21 months!

Kevin has extensive experience operating as MD or Chairman and has headed several successful turnarounds of seriously troubled manufacturing companies.

He has led all types of transactions from MBO, BIMBO, MBI, Refinancing, Restructuring and Disposals and is extremely well-networked in manufacturing, banking, and private equity.

Kevin founded the Work-Wise Foundation, is a Freeman of the Company of Cutlers in Hallamshire, an Entrepreneur in Residence with Yorkshire Connect, and a member of the Steering Group for the Advanced Metallic Systems at Sheffield University.

He has also been involved with the EEF, Santander Bank's Ambassadors and has been recognised by the Manufacturer Magazine as one of the Top 100 Manufacturing People in the UK. During the last 20 years, many prestigious National awards have been made to either him personally or to organisations he has run.



Richard Cook | Managing Director

Richard is responsible for Castings Technology's global business activities and following on from the successful MBO with Kevin Parkin, is the Managing Director and majority shareholder in the company.

After his successful completion of Mechanical & Production Ordinary and Higher National Certificates he went on to gain a BSc (Hons.) degree, graduating in 1996. A time-served mechanical engineer, Richard has worked extensively in the aerospace and rotating equipment sectors; specialising in change management and lean deployment with complimentary expertise in complex machining, high-performance engineered coatings, capital equipment manufacture, automotive mechatronics and latterly, castings.

With over 30 years of experience at board level, undertaking roles as diverse as operations to personnel management, Richard has been responsible for steering companies towards world class levels of performance recognised by a number of prestigious awards – including several Queens Awards and a British Quality Foundation Excellence Award.

Richard has a genuine passion for business excellence, driven via technological exploitation and robust people advancement. He networks extensively through the Sheffield City Region, the UK and globally, and is a Freeman of the Company of Cutlers in Hallamshire.



Ryan Longden | Chief Operating Officer

Ryan is operationally responsible for all Castings Technology's manufacturing activities and production management.

Following his successful completion of a Pattern Making and foundry process City and Guilds at Chesterfield College he went onto gain both ONC and HNC in Cast Metals Technology also at Chesterfield College. A time served pattern maker and foundry technician, Ryan has specialised in Technical Foundry applications.

Ryan was instrumental in the introduction of new facilities within the business, particularly the largest titanium VAR furnace in the world. A series of promotions has seen him take on the role of Chief Operating Officer.

Ryan is a passionate advocate of Apprenticeships and has successfully introduced many apprentices with in-house career development.



Shaun Smith | Chief Commercial Officer

Shaun started his career with an apprenticeship at Centaur Precision in Sheffield where he gained an extensive understanding of the investment casting process.

Covering Aerospace, Orthopaedic and Automotive he worked as both Product and Process Engineer gaining ONC and HNC in Mechanical and Materials Engineering. Following this he has expanded further his foundry expertise working within Superalloys, Orthopaedics, Centrispun, and Turbine Wheel Castings.

Whilst working with Cummins he spent 3 years in China setting up the world-renowned Wuxi Vane Wheel

Foundry, a purpose-built Turbine Wheel business. His recent work has been as a consultant advising on strategy, market entry, process improvement, and general management.

Prior to joining Castings Technology, Shaun was Deputy Director and Director for RemetUK and Remet China respectively helping Remet to grow substantially in Europe and Asia.

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Liam Cartledge | Chief Finance Officer

A Fellow of the Institute of Chartered Accountants in England & Wales (ICAEW) with over 25+ years of experience, Liam started his career at Carillion PLC post qualification, back in 2002. He spent 16 years there and held various senior finance roles across the Business Services division of the multi £bn international group.

Liam then made the move into the Sheffield manufacturing sector and enjoyed 5+ years at the Cooper Turner Beck Group, firstly as Group Financial Controller and latterly as Group Financial Reporting Manager. The US private equity backed CTB Group is one of the world's

leading manufacturers and distributors of safety critical fasteners for the Construction, Renewables, Tunnelling & Rail, Oil & Gas, Nuclear, Power Generation and OEM markets.

Across his career Liam has gained a deep understanding of financial management and controls across diverse and complex environments and brings to Castings Technology his expertise in statutory and internal financial reporting, taxation compliance, treasury management and financial planning and data analysis.



Caroline Sharp | Finance Director & Company Secretary

Caroline embarked on her professional journey with Doncasters Sheffield Limited following a successful work experience stint, where she was swiftly recognised for her talents and offered the role of Purchase Ledger.

Armed with qualifications from both the AAT and CIMA, she demonstrated her commitment to advancing her skills and knowledge in the finance domain. Over the course of 24 years, Caroline's career flourished within the Doncasters Group, transitioning to Doncasters Bramah, which later evolved into Radius Aerospace. Throughout her tenure, she continually elevated her role, eventually ascending to the position of Finance Manager. Caroline's tenure is not only marked by her longevity but

also by the depth and breadth of her expertise in the manufacturing sector's finance function. She has adeptly navigated various challenges, including system upgrades, the establishment, and management of service centres, as well as finance restructuring initiatives.



Phil Hancock | Director of Programmes

Phil Hancock first entered the foundry industry working in testing in the now closed Stanton PLC based in Chesterfield.

He went on to become Supervisor in the lost foam unit, before leaving to join Swift Levick magnets as Foundry / Development Manager in the Alnico cast magnet foundry.

He joined William Lees as a Process Technician, before moving into investment casting at Centaur Precision casting, working initially as Process Engineer, before taking the role as Process Manager.

Phil moved out of investment casting, joining Blayson Investment Casting Waxes as Technical Manager.

This lasted some 13 years before joining Texmo Precision Castings as Project Engineer, supporting foundries in India, USA and Germany, both with individual projects and process improvement campaigns.

During this time, he became a Lean Sigma Black Belt.

During his career, Phil has worked with a number of alloys from Cast Steels, Superalloys, F75 Cobalt Chrome, Ductile Irons, Malleable Irons, and Magnet steels.

He is considered an authority with investment casting wax, as a result of his time at Blayson.



Noor Chowdhury | Quality Director

With an impressive background in the metal industries, Noor brings over 40 years of expertise to this position.

His career journey has been marked by outstanding contributions in various sectors, including Aerospace, Oil & Gas, Automotive, and Commercial domains. Noor's proficiency in diverse casting methods, such as Centrifugal Casting, Continuous Casting, Sand & Investment Casting, and Open/Close Die Forging, has earned him recognition as a leading expert in the field.

Furthermore, his international experience, having worked in India, the Middle East, and the UK, has honed his understanding of national and international standards and specifications, such as AS9100, UKAS, and Nadcap.

Noor spearheads Castings Technology's commitment to safety, health, environment, and quality.



New Enquiries

David Leary | Commercial Lead

Dave joined Castings Technology in January 2026 having spent the past 17 years working within the engineering world.

His first exposure to investment casting came in 2008, working for Sandvik Medical Solutions before moving into the oil and gas sector, holding commercial roles specialising in raw material supply and both first and finish staged machining.

Following some time spent in the rail sector with LB Foster, where he was responsible for the Track Products Department, Dave returned to oil and gas and the aerospace sectors as Commercial Manager for a leading CNC machining business.

Prior to joining Castings Technology, Dave spent four and a half years running a successful engineering and manufacturing business before returning to engineering sales, where he delivered growth across multiple sectors offering specialist tooling and bespoke automated manufacturing equipment.

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