



ROSS & CATHERALL

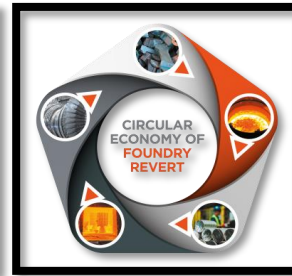
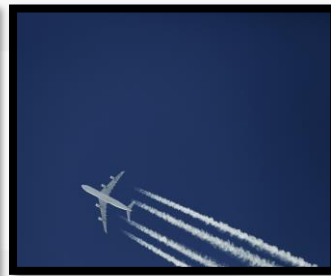
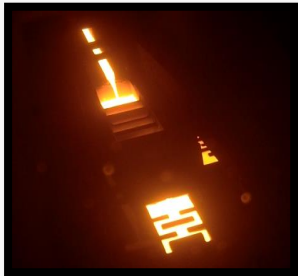
Have you secured your Q2 2025 alloy demand?

Flexible superalloy cast bar stick melt capacity options

Turning **Metals** into **Motion**



Ross & Catherall...



...are a leading supplier of vacuum melted nickel and cobalt based superalloy cast bar stick

...supply alloys to aerospace, IGT, space exploration, and additive manufacturing

...have major OEM and industry leading cast house approvals for Aerospace and Gas Power Turbine, Space and Additive Manufacturing

...have a global supply footprint for sales, technical support and deliveries

...have a long history and strong capability of alloy development and technical support

...have established alloy revert chains to ensure cost-effective melting solutions

...have established programmes for investment in technical excellence, people, capability and plant capacity

Have you secured your Q2 alloy demands?

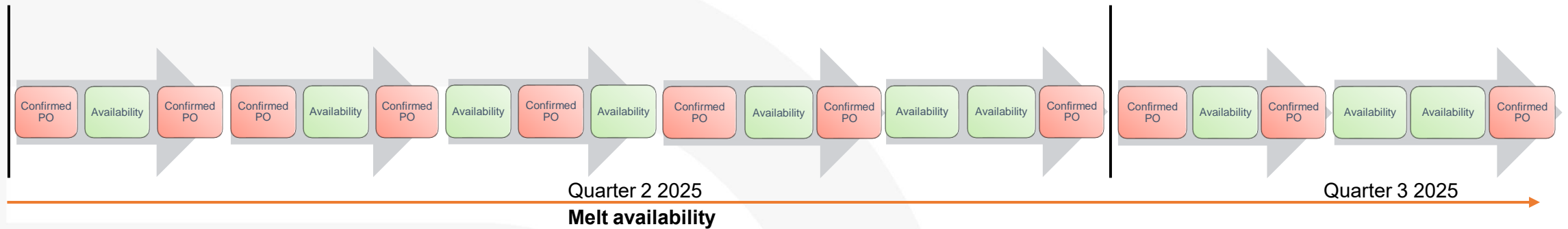
- Alloy volumes from across all sectors continues to grow. Ross & Catherall have increased melting capabilities with the addition of the latest VIM technology for the 21st century alloys required today!
 - Furnace technology configured for the highest quality masteralloy production of highly specialised nickel and cobalt-based superalloy cast bar stick, with features including:
 - Short tundish VIM design with multiple filtration to ensure optimum metallurgical quality and cleanliness
 - Integrated Unidirectional Stirring system to provide enhanced metal stirring / agitation for shortest degassing times with the highest possible electrical efficiency
- We provide melting commitment with proven technical, quality and melting capabilities, flexibilities and capacities (8 furnace capacity options)
 - Remove the concerns of revert availability by utilising our multiple capacity furnace options
 - Choose from 500kg (1,100lbs), 2800kg (6,200lbs), 4000kg (8,800lbs), 6000kg (13,200lbs), 7200kg (15,800lbs)
 - Take advantage of the current, historically low element prices, that can be realised now and secured for 2025 melting



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Ross & Catherall can provide alloy volumes with consistent and stable supply

Increased melt capacity through 2025

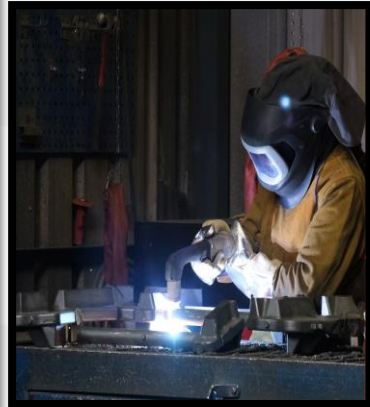


- Customers can utilise the additional melt capacity from our latest 4t furnace, increasing the melt volume range from 500kg (1,110lb) to 7200kg (15,800lbs)
- Element prices are rising, trade tariffs are already impacting element cost increases and alloy costs. Secure your 2025 alloy requirements now to reduce cost spikes
- Our lead-times for melting to despatch is approx. 4-6* weeks, including “spot orders”
- We continue to remain as proactive as possible, with regards to ensuring your alloy demands are met, however, commitment for melting with a confirmed PO must be provided to “lock-in” melting slots
- Revert containing melts should have the required revert delivered to R&C on time^ to make “furnace ready” to meet the melting schedule
- Melt slots will be allocated based on first received receipt of PO confirmation



*based on revert being available and furnace ready
 ^ As per revert specification document

In-house Revert Processing - Sustainability is possible using your in-house revert



– Our commitment to sustainability drives us to adopt environmentally friendly practices and reduce our carbon footprint, ensuring that our production processes are as sustainable as they are efficient

– Customer revert segregated, prepared & cleaned for melting

– Revert storage “closed-loop” guaranteed

– Revert ready for use in one of our 8 furnaces

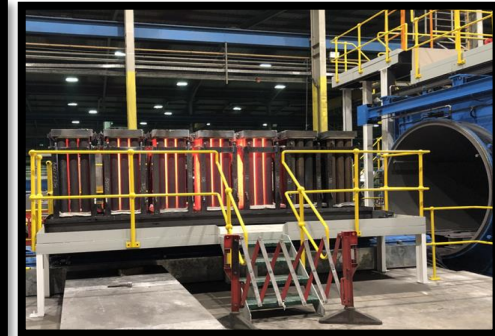


Various Melting options to maximise your revert levels

Furnace capacities kgs (lbs)	Bar Diameters mm (inches)
500 (1,100)	75 (3"), 88 (3½"), 100 (4"), 125 (5"), 150 (6"), 175 (7")
2 x 2800 (6,200)	
4000^ (8,800)	
7200 (15,800) *	

* Furnace yields approx. +/- 10% of stated capacity, * 3 x 7200kg & 6000kg furnace bodies ^ New furnace commissioned Q4 2023

- We are confident that we can meet your varying volume alloy demands using any one of our 8 VIM furnaces, combined with our revert processing cell – guaranteeing a truly sustainable “circular economy” of your revert stream



Superalloy manufacturing excellence



- Vacuum melting from 1968 ✓
 - 145 employees
- Over half a century of superalloy melting, development, manufacturing and processing experience ✓
 - World's largest selection of VIM furnace capacity options utilising the latest melting technology ✓
- Markets served: Aerospace, IGT, Additive Manufacturing, Space Exploration, and biomedical sectors ✓
 - Manufacturers of cast bar stick to the Investment Casting foundry sector ✓
 - Long history of product and process development ✓

Superalloys for investment casting



Ross & Catherall capabilities

- Technical, metallurgical & chemical specialists with long service industry knowledge and experience ✓
 - Fully accredited laboratory with ISO17025:2017 & Nadcap approvals ✓
- Largest volume capacity range of any superalloy manufacturer worldwide - 8 VIM furnaces ✓
- Invested and committed workforce with knowledge, experience and continuity in the sector ✓
 - Exact Chemistry control and bar cleanliness ✓
 - Low N <5ppm ✓
 - Low S & Super Low S < 3ppm and < 1ppm ✓

Laboratory Capabilities

- XRF - Panalytical Zetium
- OES – Spectro SPECTROMAXx and SpectroLab
- Combustion LECO C&S CS844ES and CS844
- Gas fusion O&N Leco ON836
- GDMS – Nu Instruments, Astrum
- Duplicate instruments. Replacement to state-of-the-art technology on a rolling Capex programme.



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What do Ross & Catherall provide?

- Supply chain confidence ✓
 - Known element prices/availability for all alloy requirements for 3,6,9 & 12 months (based on volume commitment)
 - Guaranteed melting slots and volume commitment*
 - Latest furnace technology of any superalloy cast bar stick manufacturer worldwide
 - Known, programmed deliveries
- Flexibility ✓
 - Scheduled melting and delivery to align with your customers forecasts/demands*
 - Largest range of melting furnace capacities from 500kg-7200kg (8 furnaces in total) – widest choice worldwide
 - Revert managed, prepared in-house and available to meet known melt demand
- Location ✓
 - Centrally located for deliveries worldwide
- In-house revert processing & preparation facility ✓
 - Revert managed and shipped from customers worldwide
 - Revert prepared, stored and available to meet known melt demand – readily available*
 - Revert is utilised sooner and alloy cast bar stick is delivered in time, in full



New 4t furnace commissioned October 2023



Advantages of using Ross & Catherall

Ross & Catherall hold a prestigious position within the investment casting sector for the manufacture of superalloy cast bar stick, leveraging over 50 years of expertise and continuous innovation in vacuum melted superalloy production, while supplying our knowledge to your specifications

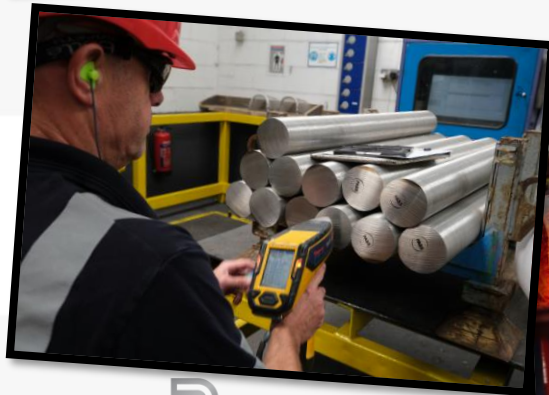
- We are a technological, quality and service orientated supplier with the most flexible melting capabilities of any superalloy manufacturer worldwide.
- Largest volume capacity options worldwide of any superalloy cast bar stick manufacturer - choice of 8 VIM furnaces ✓
- Located “centrally” to all major Aerospace & IGT producers ✓
- Alloy cleanliness ✓
- Delivering Low N <5ppm ✓
- Delivering Low S & Super Low S < 3ppm and < 1ppm ✓
- Fully accredited laboratory with ISO17025:2017 & Nadcap approvals ✓

Your trusted partner in advanced superalloy solutions



Our people are our strength!

- Mastermelt principle melters - continuity of workforce with over 150 years* experience and knowledge
- Senior Management Team - average tenure 10 years at Ross & Catherall, several with over 30 years industry experience
- Technical and Laboratory specialists, many with over 25 years industry experience in superalloy metallurgical development and chemical services
- Established programmes for investment in technical excellence, people, capability and plant capacity



Ross & Catherall Limited

Superalloy Manufacturing Excellence

- Vacuum melting since 1968
- World's largest selection of VIM furnace capacity options utilising the latest melting technology
- Aerospace, IGT, Additive Manufacturing, Space Exploration and biomedical sectors
- Supplying to the Investment casting and Additive Manufacturing industries
- Over 50-year history of product and process development
- Our expertise adds value to chemical elements to meet customers exacting "chemistries"



ROSS & CATHERALL

SERVING THE GLOBAL INVESTMENT CASTING COMMUNITY FOR OVER 50 YEARS

Industry Approvals

- AS 9100: Rev D / ISO 9001: 2015
- ISO 14001: 2015 Environmental Management Standard
- ISO 45001: 2018 Occupational Health & Safety Management
- ISO17025: 2017 Testing and Calibration Laboratories
- Nadcap (MTL)

Copies of all certificates can be provided



Materials Testing Laboratories

