



ROSS & CATHERALL

Revert management

Importance of revert segregation

Turning Metals into Motion



Is your revert segregated by alloy?

Unsegregated alloy revert deliveries can impact the melting and shipping date



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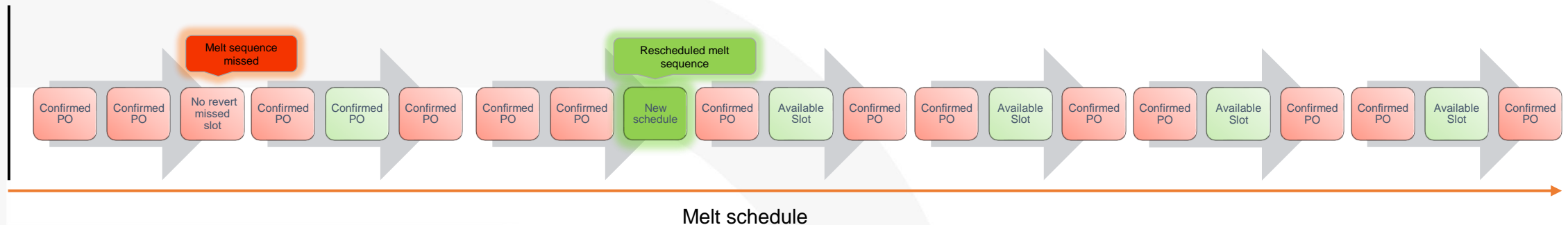
Revert segregation & management from customers

- Alloy volume demand requires the “turnaround” of revert to meet the market increases
- Revert is a key part of the alloy cost for you, understandably rapid “turnaround” is required
- Unfortunately, we have increased incidents of revert[^] deliveries, advised as being “furnace ready”, being received from customers with “mixed” alloy, this will impact melt scheduling and other risks including:
 - Mixed revert can result in the manufacture of Out of Specification (OOS)* alloy
 - Revert in quarantine – awaiting instructions from the customer
 - Delays to melting as the revert MUST be 100% inspected* to remove the “mixed” revert
 - Change to melt ratio, and costs* (increase to virgin content) due to insufficient revert being available for the original melt volume

Help us to reduce “mixed” revert deliveries

- Your furnace ready revert should be inspected and tested, at your site, to ensure it does not contain “mixed” revert
 - Suggested methods include:
 - Colour coding of revert to ensure effective segregation of different alloys
 - Analysis of revert prior to shipping with handheld XRF (Niton unit) to ensure effective segregation
- The alternative is to issue revert to Ross & Catherall for 100% furnace inspection and sorting*
 - This will remove the potential for Out of Specification (OOS) alloy being produced
 - Ensure that the melt schedule is maintained as advised on the order acknowledgment
- Optimised melt sequencing can be maintained if revert segregation is followed. If the revert is not segregated correctly at the customers site delays to the melt sequence can occur*

Revert delays impact our melt plan and your alloy delivery!



Impact of “mixed” revert deliveries to Ross & Catherall production

- Revert bearing melt ratios must have the required revert delivered to R&C on time[^] to allow sorting & cleaning to make “furnace ready” to meet the melt chemistry sequencing schedule
- “Mixed” revert deliveries can result in missed slots, and rescheduling of the cast to meet the available sequencing, this has an impact to our production, and your facility in terms of revised element costs*, your alloy manufacture delayed - as such the lead-time could increase significantly to meet the melt schedule
- If there is insufficient revert, after removing the “mixed” revert, the alloy ratio may require amending*, and/or chose an alternative **furnace** size option, to meet the available revert



- Revised revert ratio melts **WILL NOT** impact the melt chemistry sequencing schedule!
- Insufficient revert **WILL** impact the schedule as the order cannot be melted or sequenced!

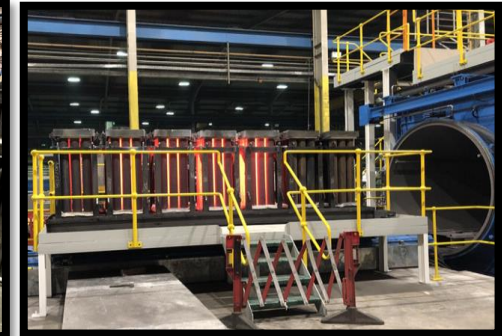
*This will result in a cost review (requote) and/or rescheduling costs
[^] As per revert specification document

Various Melting options to optimise 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



ROSS & CATHERALL

In-house Revert Processing, Storage and Secure Stocking



- Customer revert segregated, prepared & cleaned for melting
- Revert storage “closed-loop” guaranteed
- Revert ready for use in one of our 8 furnaces



Advantages of using Ross & Catherall

Our expertise adds value to chemical elements to meet customers exacting “chemistries”

Located “centrally” to all major Aerospace & IGT producers

- We are a technological, quality and service orientated supplier with the most flexible melting capabilities of any superalloy manufacturer worldwide.
- We will beat or at least match the competition on quality:
- Cleanness ✓
- Low N <5ppm ✓
- Low S & Super Low S < 3ppm and < 1ppm ✓
- Fully accredited laboratory with ISO17025:2017 & Nadcap approvals ✓
- Largest volume capacity range of 8 VIM furnaces worldwide for bar stick supply ✓