

The case study

This approach was taken with a leading aircraft manufacturer and later extended to his subcontract supply base:

thyssenkrupp Aerospace reviewed the customer's bill of materials at tube and bar component part level and generated an accurate bulk forecast in random or multiple lengths. This demonstrated that demand amounted to 14,000 component parts per week cut from 480,000 m (1,574,800 ft²) of tube and bar per year.

A process for embodying new component parts was developed and linked to an on-going length optimization process to minimize waste.

In order to reduce handling it was decided that sequenced kits should be delivered direct to the point-of-use line at a rate that aligned to the aircraft manufacturer's production 'takt' time.

Regular meetings with suppliers improved communication and resulted in improvement programs which provided further benefits.



Key benefits

- Scrap was reduced by 22 %
- Inventory was reduced by €760,000 and customer WIP to 3 days
- Occupied space was reduced by 9,000 m² (97.000 ft²)
- Increased forecast visibility and accuracy drove an increase in confidence for everyone involved
- On-time delivery and right-first-time quality of near to 100 % drove a significant improvement in customer satisfaction

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Tube/Bar products



The challenge

Optimize material
consumption

Aluminum, steel and titanium tube and bar for aircraft construction is used in a wide range of specifications, diameters and wall thicknesses.

Each of these items is used in a variety of different lengths which would be uneconomical for a mill to produce and therefore are cut from common stocked lengths prior to use. However, unless carefully controlled, this can result in the generation of excessive material waste and at the same time multiple handling can generate process scrap and/or quality problems.

The problem can be solved firstly by optimization software which calculates the 'mother' lengths to be stocked to cover the aggregated demand for the cut items and secondly by dedicated processing to cut, debur and wash the items in order to reduce handling and eliminate quality problems.

Planning and process control procedures can also be implemented to facilitate the packing of in-sequence production kits, which can be delivered with job cards to the point of use on the customer's shop floor, thereby eliminating transactional costs and reducing work in progress.

The process...

- Tube and bar lengths are optimized using demand planning.
- 'Mother' tube held in mill-supplied cases to minimize handling.
- Deburred.
- Washed to remove grease.
- Cut to size.



Aluminum
Steel
Titanium
Aluminum-Bronze
Nickel
Copper



...to a customized solution

- Parts are individually bagged and can be kitted into customer-specified families.
- Dedicated transport ensures delivery to point of use on a just-in-time basis.

