"I've just had my first look at the components you produced for us and I'm staggered by the excellent job you guys have done. They are the most impressive pieces we've seen on this project. The fitting team leader is hugely impressed by the quality of the finished product.

Well done, guys!"

Design Engineer
Equipment producer unsurpassed for critical applications.

About Copper Alloys Ltd
- Based in Stoke-on-Trent, England
- Producing speciality metals and components for critical engineering applications

Project Goals
- Manufacture forgings in largest-ever section
- Control complicated machining to achieve close tolerance
- Deliver within a tight timescale

Approach
- Created an innovative material production route to achieve sufficient hot working
- Risk mitigation strategy, openly communicated to customer
- Manage machining process closely
- Forward planning to ensure smooth inter-stage progression

Results
- Delivered one week ahead of schedule
- 100% compliance, zero concessions
- Customer "staggered by the excellent job"

Critical Manifold Block Forging

British manufacturer Copper Alloys Ltd develops engineering solution to meet complex equipment challenge.

What was the project?
A marine defence equipment producer approached Copper Alloys Ltd with a unique problem: their customer had specified a component in a material that had never before been produced in such a large section.

The material was a high-strength cupro-nickel alloy to the defence standard DSTAN 02-835, which is typically produced up to 12” (305mm) diameter.

Component machining
Following a rigorous testing schedule, the forgings were proven to be high integrity and now focus shifted to the machining process. Taking a solid block weighing 550kg to a precision machined component weighing 130kg took the latest in CNC technology and hands-on management to ensure protocol was respected.

Risk mitigation
The scenario planning at the front end did prevent a problem becoming a disaster, as a forging was scrapped due to human error at the finish machining stage. As planned however, there was a forging available to slot into the process at no impact to the delivery schedule. Although this was not a requirement of the contract, Copper Alloys Ltd produced enough material for two extra components should the need arise.

A happy customer
Upon their customer’s inspection of the pressure-tested components, they could see that the attention to detail and made the difference, down to the items coming pre-packaged with a sling to make it easy to lift them out of the boxes. These parts were "the most impressive pieces on the project".