

When precision counts

Introduction

Today's hi-tech applications place big demands on materials and components. Pre-delivery engineering precision, heat treatments and accurate measurement are essential to product performance. Nicofe has the expertise, facilities and equipment to ensure our materials deliver consistently superior outcomes.

Challenge

From torquer rods, to locating pins, to optical stands for breadboards and LVDT probes, the straightness of short metallic rods used in high precision applications is mission critical.

But analysis of materials such as Hiperco, Invar, Molybdenum and Tungsten rod frequently shows variations and imperfections. Poor machining and inferior packaging also impact on delivered product quality.

In addition, the magnetic properties of materials such as torquer rods are proven to dramatically improve with specific heat treatments.

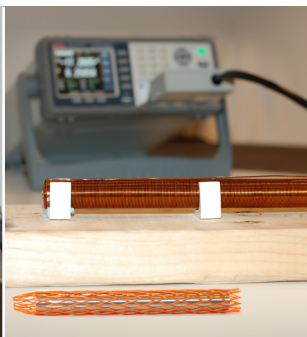
With these diverse operational requirements, the challenge for material suppliers is to deliver performance-optimised materials for every application.

Approach

Nicofe is focused on delivering first-class materials that are expertly prepared to perform at their best, whatever the task.

We understand our products and how they will behave in different situations – and we process, treat and test before shipping to ensure they perform exactly as they should.

- > Fully equipped workshop for precision machining and heat treatments
- > State-of-the-art metrology lab for accurate testing and measuring
- > Partnerships with scientific and academic organisations for additional analytical input when required



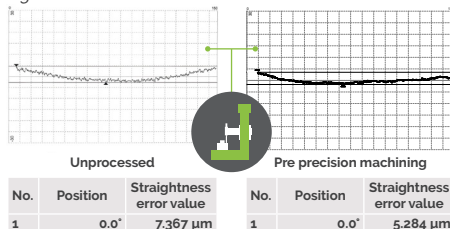


Outcomes

Issue: Talyrond measurements show imperfections in the surface and straightness of the sample rod, which can hamper magnetic properties and cause issues when precision is vital (*Fig 1*).

Solution: Precision machining improves straightness and eliminates many of the surface imperfections, which significantly improves the performance of the rod.

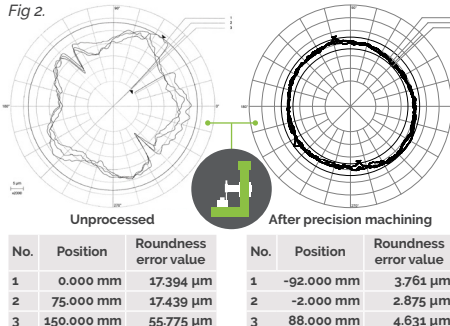
Fig 1.



Issue: Talyrond measurements show imperfections in the surface and roundness of the sample rod, which can hamper magnetic properties and cause issues when precision is vital (*Fig 2*).

Solution: Precision machining improves straightness and eliminates many of the surface imperfections, which significantly improves the performance of the rod.

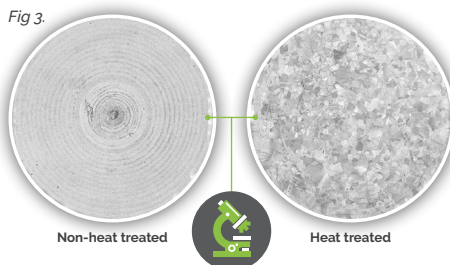
Fig 2.



Issue: The end of a rod after it has been machined, with surface grain disruption and very little grain visibility (*Fig 3*).

Solution: After heat treatment in a hydrogen anneal the grains have recovered their structure, which has greatly enhanced magnetic performance.

Fig 3.



About Nicofe

Nicofe is one of Europe's leading suppliers of premium quality refractory metals and alloys, soft magnetic alloys, and controlled expansion alloys. Our customers benefit from a diverse range of capabilities that help them address their needs more effectively, especially in the aerospace, defence, electronics and automotive sectors.

With top accreditations, comprehensive workshop facilities, and a deep technical understanding we help our customers get the most out of their materials.

Discover how we can **optimise** operational performance

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