



ApplicationFocus

CT – Turbine Impellers



Comprehensive inspection of impellers with CT

Being subject to excessive temperatures and pressures, the smallest variations or defects can enormously effect the performance of automotive components such as impellers in turbochargers. This makes 100% inspection necessary not only for dimensions but also for structural and build quality. For impellers used in automotive turbochargers, the measurements of inner and outer dimensions are essential to ensure a perfect fit and energy

efficiency. Also inspection of the blade wall thickness is important to guarantee necessary durability with the minimal material use. For pre-production optimisation, the Nikon X-ray and Computed Tomography systems are indispensable tools. They enable the non-destructive inspection of prototypes, to gain a better insight whilst preserving the expensive parts.

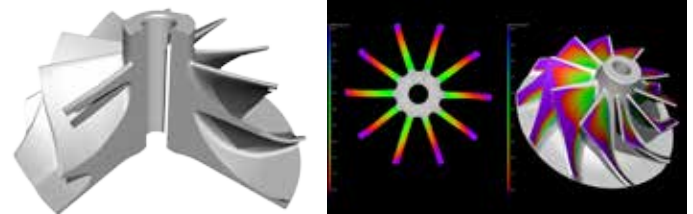
Customer challenges

- Dimensional inspection of products with complex geometry
- Able to inspect a large variety of materials, shapes and sizes
- Avoid destructive testing of expensive prototypes and sample products
- Structural inspection of weld quality (voiding, cracks etc.)
- 100% inspection of life-critical components instead of sample based inspection
- Shorten pre-production development to go faster to market

Nikon Metrology's solutions

XT H industrial CT systems featuring micro-focus sources

- Wide range of 160-450kV micro-focus sources to inspect small to large, dense samples
- Variety of flat imaging panels available for maximum detail
- Part-to-CAD dimensional inspection with micron accuracy
- NDT structural analysis of void, cracks, inclusions
- Ability to fully automate process enabling fast 100% inspection of the parts
- Open-tube source guarantees low cost of ownership
- Full protective enclosure – compliant to CE and DIN 54113 radiation safety standards



Wall thickness measurement comparison to CAD





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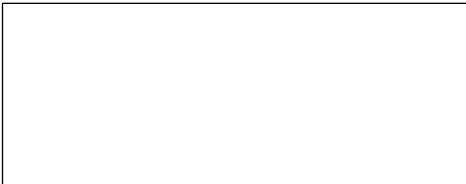
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