

User Story

Hadleigh Castings

FARO



Measurement of precision aluminium castings

FARO 'Casting' a Spell on Hadleigh Quality

METAL FABRICATION / NON-CONTACT MEASUREMENT *The flexibility and accuracy of FARO Edge ScanArm has helped to enhance Hadleigh Castings' measuring capability, but also speed-up the company's inspection throughput.*

Although the quality of a business' output is vitally important to its success, the ability of a company to supply its customers with products and services at the right price is equally essential. The recent sale of an advanced FARO Edge ScanArm to Hadleigh Castings Ltd proved that ensuring the quality of a company's output can be achieved whilst also satisfying the commercial imperative.

Since the company was started over 45 years ago, Hadleigh Castings has established a reputation as one of the UK's leading aluminium foundries. Regular investments in the best available technology and the continuous training of the company's staff has helped to create a modern, highly efficient production facility that is capable of producing precision sand casting and gravity die casting to very close tolerances.

The company's extensive range of aluminium casting technologies and services includes CAD CAM, Pattern Making, Boxless Sand Moulding,

Precision Sand Casting, Gravity Die-Casting CNC Machining, Final Finishing and Product Assembly. In addition, extensive Inspection and Material Testing Facilities ensure the delivery of high quality products to its demanding client base.

The high standard of work produced by Hadleigh Castings has enabled the company to develop an impressive international client base. Challenging industries served include the Aerospace, Automotive, Rail, Marine, Motorcycle, Defense, Life Sciences, Communications, Environmental and Test and Measurement sectors.

Given the nature of its customers, Hadleigh Castings administer an exacting quality regime and operates a system of Quality Management which is approved and certified to BS EN ISO 9001:2008, International Railway Industry Standard [IRIS Rev2] and is currently working towards AS9100 Rev C.

To enable the company to achieve the stand-

ards agreed with its customers, throughout all production processes Hadleigh Castings use a range of modern analytical, measuring, testing and inspection equipment. In-house facilities include Material Testing, Pressure Testing, and inspection by CNC Coordinate Measuring Machines, Endoscopes, Ultrasonic and Dye Penetrant.

Illustrating the all-embracing nature of the company's quality philosophy, Inspection Staff exercise control of all aspects of production and maintain documentation which is held for statutory periods to demonstrate traceability. Hadleigh Castings' Quality Department also has the final responsibility for the company's dispatch process; ensuring components are suitably protected, packed and correctly documented in accordance with Purchase Order requirements.

As a rapidly increasing order book had created the possibility of delays in processing work through its impressive Metrology suite, a >>

Hadleigh Castings

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>> recent search was made for a suitable technology that would not only enhance Hadleigh Castings' measuring capability, but would also speed-up the company's inspection throughput.

Robin Mills, Hadleigh Castings Business Standards Manager explained. "Having looked at several alternative systems that could further improve our quality function and help to increase the flow of our inspection work, we decided to purchase an Edge ScanArm system from FARO. Compared to the other available systems, the ScanArm proved to be the ideal tool for product development, inspection and quality control functions. We were very impressed by the FARO system's ability to perform point cloud comparison with CAD, rapid prototyping, reverse engineering, and 3D modelling of free-form surfaces."

"Although the FARO operating system is very straight forward, our learning curve was helped by the excellent training we had from our FARO Sales Engineer. Now in regular use on raw castings, ranging from a few grams to over 300 kilograms, the flexibility, ease of use, remarkable speed and great accuracy of the FARO ScanArm means that in future we also intend to use it on machined components" added Mr. Mills.

"Adopting non-contact measurement techniques has considerably speeded-up our 1st article measuring process and significantly reduced our new products' time to market. An example of the considerable time advantages that we have gained through the use of our FARO ScanArm is the regular detailed inspection that we undertake on a very complex casting. Previously, the painstaking, very precise inspection routine took us over 30 hours to complete. Now, with the use of our FARO Edge ScanArm, we are able to accomplish the complex task with improved levels of accuracy in less than 4 hours" pointed out the Hadleigh Castings Business Standards Manager.

"Given our ever shorter project lead-times, the ScanArm will be utilised to fast track, confirmation of the dimensional alignment of new or modified sample parts against the customer supplied 3D models. Also, as Faro's software uses graduated colour graphics to indicate the tolerance condition of components' features, in addition to tabulated reports, we are now also able to supply customised reports containing detailed graphical information" emphasized Robin Mills.

Advanced non-contact measurement devices are becoming increasingly popular throughout the world across a wide range of industries. Handheld laser scanners provide a quick and effective way to inspect and reverse engineer complex parts and surfaces. The easy to use technology is able to turn everyday objects into digital computer models. Soft, deformable, and complex shapes can be easily inspected – all without ever coming in contact with the part.

An acknowledged leader in the field, FARO's ScanArm combines all of the advantages of the FaroArm with the addition of a hand held laser scanner, rendering it the perfect contact/non-contact measurement system. Unlike other scanning systems, the ScanArm's hard probe and the Laser Line Probe can digitise interchangeably without having to remove ei-



Non-contact measurement of castings to speed up precise inspection routine

ther component. Users are able to accurately measure prismatic features with the hard probe, then laser scan sections requiring larger volumes of data — all with one simple easy to use tool.

Robin Mills concludes. "In addition to improving our accuracy capability, the speed of operation of our new FARO ScanArm has enabled us to significantly speed-up our inspection processes. The man hours saved by the use of the FARO Edge ScanArm will ensure that our return on investment time will be even faster than first estimated."

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ROBIN MILLS, HADLEIGH CASTINGS BUSINESS STANDARDS MANAGER

HADLEIGH CASTINGS

Hadleigh Castings was founded in 1968 to provide a full aluminium casting and manufacturing service.

Over the years continued investment in technology and training has created a modern, high quality production facility capable of producing precision sand casting and gravity die casting to very close tolerances.

As a leading sand and die foundry we are Professionals in producing quality castings of exacting standards. and consistently produce quality aluminium products for major manufacturers, especially in the UK and European markets, and also for other regions in the world.

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– FOUR GOOD REASONS –

Robin Mills, Hadleigh Castings Business Standards Manager says:

- 1** Quality Control: The FARO system allows to perform point cloud comparison with CAD, rapid prototyping, reverse engineering, and 3D modelling of free-form surfaces"
- 2** High Accuracy: The ScanArm has helped to accomplish complex tasks with highly-improved levels of accuracy.
- 3** Speed and flexibility: "The speed of operation of our new FARO ScanArm has enabled us to significantly speed-up our inspection processes."
- 4** User-friendly Software: "Due to FARO's easy-to-use software we are now able to supply customised reports containing detailed graphical information."



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SUMMARY

Adopting Non-contact measurement techniques has considerably speeded-up our 1st article measuring process and significantly reduced our new products' time to market