



Maycast-Nokes

Precision Engineering Limited

NON-DESTRUCTIVE TESTING
HEAT TREATMENT
METALLURGICAL SERVICES



NDT

RADIOGRAPHY

20 Years of Radiography Excellence

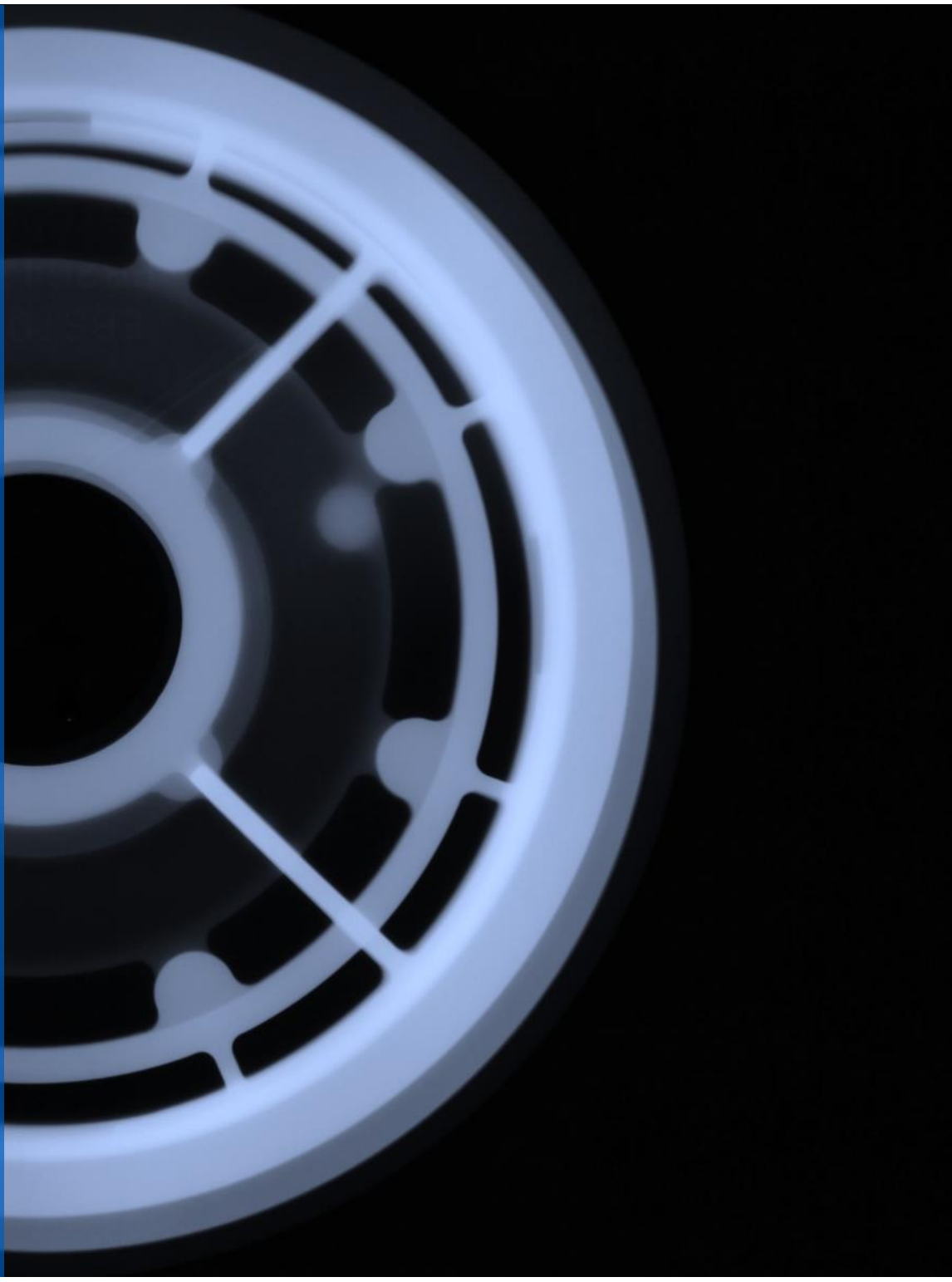
Over the decades we have provided radiographic analysis for a wide variety of items including archaeological finds, classic car parts, rare musical instruments and aerospace components.

Our X-ray facility incorporates two X-ray cells (225 kV + 320 kV). Using an automatic processor, images are produced on film and inspected against customer and industry standards for compliance.

We employ multi-disciplined NDT inspectors who are able to work in both our NDT departments (Radiography and PFD). All are qualified to NAS 410 / EN4179 + PCN level 2. In addition to our Level 2 members of staff we also have an on-site Level 3 technician who is qualified to write and sanction bespoke process techniques without any assistance from an external source.

Our X-ray department is fully NADCAP approved and we are currently on the PRI Merit program (24 month audits) following eight previous successful audits.

Maycast-Nokes is able to offer a sub-contract NDT service, inspecting components manufactured by other companies to their required standards - For further information please contact **NDT@maycast.co.uk**.



NDT

PFD

A NADCAP Approved Service

Penetrant Inspection is a used to detect surface breaking defects within a component such as cracks, laps and porosity.

The principle of the testing method is that the dye/penetrant is drawn into any surface breaking defect by a process of capillary action. After a period of time soaking in the dye the castings are removed and water washed. When viewed under ultra violet light any defect will bleed with dye indicating a possible defect. Castings are inspected against customer/national specifications and sentenced accordingly.

We employ multi-disciplined NDT inspectors who are able to work in both NDT departments (Radiography and PFD). All are qualified to NAS 410 / EN4179 + PCN level 2. In addition to our Level 2 members of staff we also have an on-site Level 3 technician, meaning that we can write and sanction all of our own process techniques without any assistance from an external source.

Our PFD departments is fully NADCAP approved and we are currently on the PRI Merit program (24month audits) following eight previous successful audits.



METALLURGY

Outlined below are some of the tests performed at Maycast-Nokes. Tensile testing, metallography and hardness testing are all qualified under the stringent requirements of our NADCAP Heat Treatment approval.

Tensile Testing

Maycast-Nokes performs tensile testing up to 100KN capacity at ambient temperature. Tests can be performed in accordance with:

BS EN 10002

BS EN 2002

ASTM E8

The test bars used may be as cast, turned to size or machined directly from a casting depending on the customers' requirements.

Chemical Analysis

Chemical analysis is performed using optical emission spectroscopy (OES) on a state of the art "Spectromaxx" system.

Current capabilities allow the testing of aluminium, steel and copper based alloys. For more information on alloys analysed please email us at NDT@maycast.co.uk.

Metallography

Samples are prepared using manual and semi-automatic polishing procedures. They are analysed using a light microscope ranging from 50x to 600x magnification.

Analysis includes:

General microstructure

IGA/IGO

Porosity

Grain size

Hardness Testing

Rockwell hardness testing is carried out per ASTM E18 and BS EN ISO 6508. Tests are performed using the Rockwell scales: HRA, HRB, HRC and HRE. The limits are often set by the material specification, but the frequency is usually set by the customers' requirements.

Other Testing

Other tests performed by Maycast-Nokes include:

Intercrystalline

Bend

Fracture

Our metallurgy facilities are available on a subcontract basis. For further information please email us at NDT@Maycast.co.uk.

HEAT TREATMENT

Maycast-Nokes' NADCAP approved heat treatment department is equipped to perform a number of processes on a wide range of aluminium alloy castings.

All heat treatment processes can be tailored to the needs of a specific customer or part and are carried out by qualified technicians in accordance with AMS and British Standards.

The Maycast-Nokes' heat treatment facility is available for independent sub-contract work.

Our heat treatment facilities include:

2 x Solution ovens:

Working capacity: 900 x 900 x 600

Weight: up to 140 kg

4 x Precipitation ovens:

Working capacity: Up to 1000 x 1000 x 1000

Weight: Up to 200 kg

All ovens are computer controlled, fully traceable and monitored by our Materials Laboratory.



QUALITY

Quality is the foundation upon which Maycast-Nokes Precision Engineering Ltd has built its reputation.

We have held NADCAP accreditation for NDT since November 2006 and we are now on the Supplier Merit Scheme. Not only does this allow us to carry out NDT work for Prime Contractors that require NADCAP, but also guarantees that whoever the customer might be, all our NDT inspection is carried out to the very highest standards.

Both Radiographic and Penetrant inspection are controlled by strict process control checks. We have 7 Level 2 inspectors and a level 3 NDT inspector (company level 3) who are highly experienced and hold NAS410/EN4179 and PCN qualifications.

Maycast-Nokes holds NADCAP approvals for PFD, Heat treatment and X-Ray along with industry required approvals BS EN ISO9001:2008 and AS9100 Rev C.

We embrace all areas of customer support within the quality function, from first contact to post-delivery support.

Customers Approvals: BAE Systems, UTC, Aircelle, Liebherr Aerospace, MBDA, Thales, Zodiac Aerospace, GKN.



ABOUT US

Maycast-Nokes is a precision engineering company based in Halstead, Essex.

We manufacture precision sand, investment/lost wax and gravity die castings in aluminium and steel.

We supply fully finished castings for aerospace, defence, automotive and general engineering applications.

In addition to our two foundries we operate a simultaneous 5-axis equipped machine shop and our extensive in-house facilities include heat treatment, metallurgy labs, **Non-Destructive Testing (PFD, X-Ray)** and pattern shops.

Because of our wide range of in-house services Maycast-Nokes customers are able to source fully-machined and finished castings from a single order. If required, castings can be assembled into complete assemblies or sub-assemblies, ready for the production line.

Maycast-Nokes holds quality certifications for ISO9001:2008, AS9100 REV C and NADCAP (NDT, X-Ray).



CONTACT



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