

CASTING CERTIFICATIONS FOR THE AEROSPACE INDUSTRY



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Yankee Casting has been producing quality sand castings since 1961, with a focus on aerospace, defense, and marine applications, as well as some medical and commercial castings. Multiple generations of foundry engineers work with their customers from conceptual prototypes through full lifetime support of production parts.

Like all foundries that produce parts for the aerospace industry, they must maintain their AS9100 certification. In addition, they are committed to Total Quality Management, Continuous Quality Improvement, and Just-In-Time Delivery. Their quality system is also ISO 9000:2000 certified and their heat treating facility is NADCAP certified to AS7102. Welding and Material testing are NADCAP approved as well.

What are AS9100 and NADCAP?

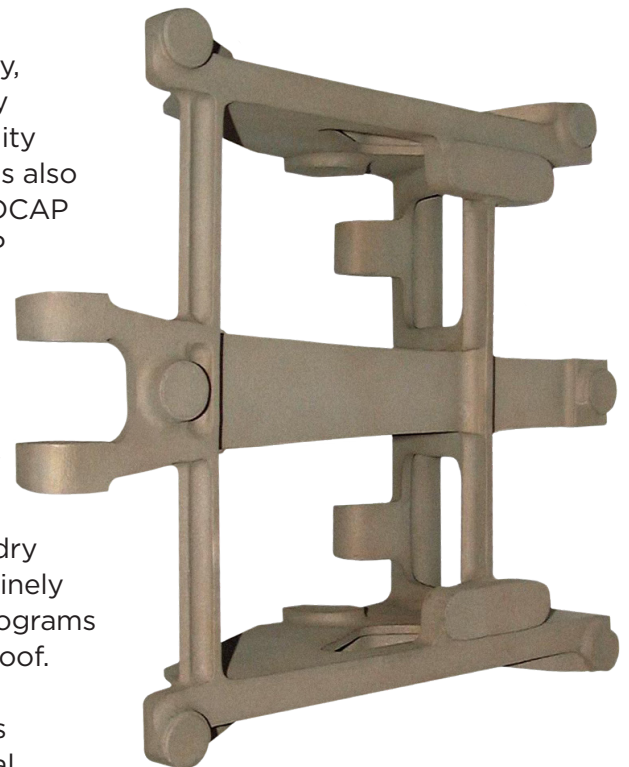
The AS9100 Certification is required for any foundry making parts for the Aerospace and Defense (AS&D) industry, but those not familiar with that industry may wonder what the certification requires, and what the end customer gets for it. At the top level, the AS9100 is the ISO 9001 program – on steroids. As such it includes the ISO designation in the AS9100 certificate. The program is managed by the International Aerospace Quality Group (IAQG). The certification governs the quality management processes of the manufacturer in a manner intended to guarantee the output is of exceptional workmanship, and ensures that all steps of the manufacturing process are

traceable and repeatable. This is the level of quality control that is required by the FAA, DoD, and NASA.

An AS9100 certified foundry has documented and routinely audited quality control programs for everything under the roof. Incoming sand and metal inspections, pouring times and temperatures, physical, chemical and NDT testing of castings are all documented. Also, subcontractors (if any) should also be AS9100 approved – so machinists, heat treat, and other operations that are farmed out by the foundry must be performed by companies that also follow the same stringent quality control and management processes.

Why Make Commercial Castings at an AS9100 Certified Foundry?

Maintaining and following all of the process and quality control documentation from order to final shipment adds cost to the process, every step of the way. Why would someone consider making a commercial casting at such a foundry? Customers who understand, know they have 100% confidence in the operations of the whole company. Running an AS9100 certified foundry requires the entire staff from pouring & molding to front office to be top



Helicopter Rudder Pedal

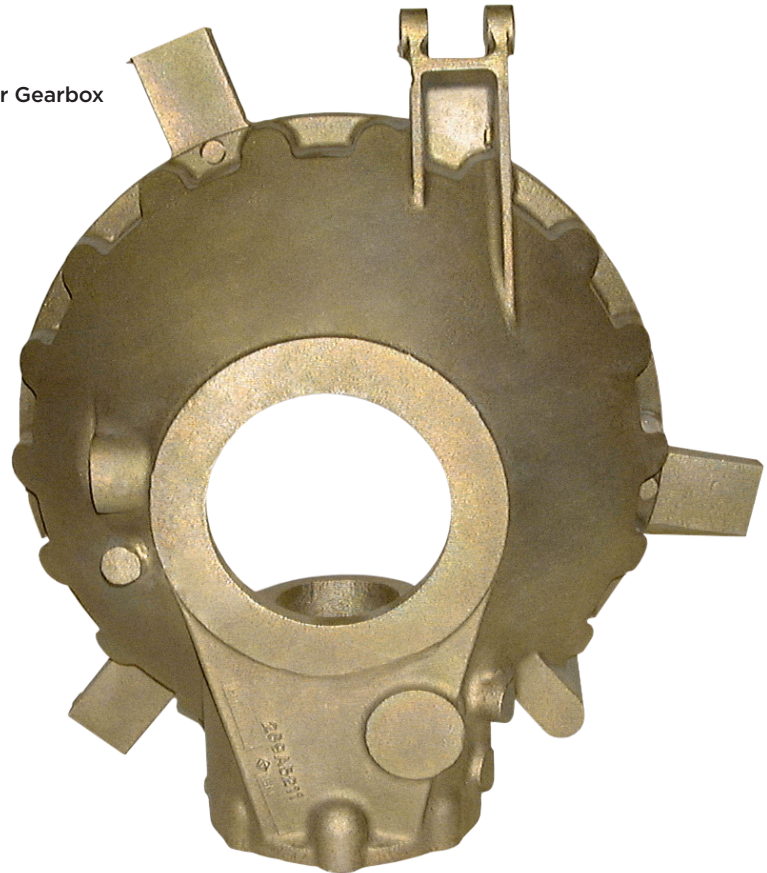


caliber, consistent, professional individuals. The level of skill, training, and attention to detail is higher all the way through such a shop. Even customer communications and response times are governed by the standard, so these foundries have a higher onus to make castings right, and deliver them on time, than a standard commercial foundry.

It is important to have an in-house internal process to track delivery ratings. In one case, they were producing a clock tower casting. While their cost per casting was higher, the higher quality castings delivered allowed the customer to substantially reduce any rework, and eliminated most of the customer's in-house inspection costs. The net result was a total reduction in the project cost for the customer.

New technology makes it easier and more cost effective to meet the AS9100 requirements. Aerospace customers typically purchase castings in lots less than 50 pieces per year, but sometimes higher volume as well. An in-house pattern shop allows them make and change tooling as needed, while maintaining control of confidential customer data. Investments in flexible robotic work cells allow repeatability and tolerance control beyond the typical human worker's abilities. Welding operations and heat treating are also certified, reducing the number of shops that their customers need to work with on any given casting.

Helicopter Gearbox



In-house Quality Control:

- Metrology grade 3D Scanners, scan to CAD reporting
- Chemical and physical metal testing
- Digital x-Ray for NDT testing
- Fluorescent Penetrant Inspection (FPI)
- Simulation programs for metal solidification and flow

While the AS9100 standard defines what must be documented, how to document it, and how often the company gets reviewed - this is still just a standard. Your goal of course is to receive customer communications and response time that exceeds their standards.

Top Values of the AS9100 Certification

- Documentation requirements demand process consistency & repeatability over a period several years
- Sophisticated work tracking & routing system used for every part poured
- Includes & exceeds all ISO requirement
- Higher confidence in quality & consistency for medical device, instrumentation, as well as AS&D

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YANKEE CASTING

AEROSPACE CERTIFIED
AS9100 / NADCAP 7102 / ISO9001

Aluminum & Magnesium Foundry
No-bake Sand Castings

In House Capabilities:

✓ Prototypes, Design Engineering, Pattern Shop, 3D Scan to CAD,
Full Production Run, Robotic Cutoff & Grind, NDT X-RAY / FPI, Heat Treat Ovens,
Tensile Tester, Spectrometer, Welding of Aluminum and Magnesium

INVESTING IN THE FOUNDRY OF THE FUTURE!

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