



Solution Treatment Furnace

E2SL completed a project for a leading metal component manufacturer in the UK which included the turnkey supply of a Solution Heat Treatment Furnace for Aerospace Components.

→ Aim

After forging, components destined for use in the aerospace industry require heat treating to relieve stresses created during forming, and to produce the required metallurgical properties. To ensure the high quality required for this application, the temperature distribution within any furnace used for this process has to be extremely uniform, and compliant with the requirements of any certifying authority, in this case Rolls-Royce PLC.

Using the concept of a working envelope within the furnace, the required temperature uniformity for this unit was required to be $\pm 6^{\circ}\text{C}$ at operating temperatures below 750°C , and $\pm 10^{\circ}\text{C}$ at operating temperatures above this; the operating temperature range for the furnace was specified to be $650\text{--}1150^{\circ}\text{C}$.

Given that the life of the furnace is expected to be long, fuel efficiency was also considered important, in order to minimise operation costs. Consequently, heat recuperation technology and low thermal mass principles were incorporated into the design of the unit.

→ Scope of Work

A full turnkey furnace supply package was provided, namely:

- mechanical, electrical and control design
- Manufacture and procurement of system elements
- Project management
- Site installation

Commissioning and certification trials

→ Benefits

A reliable, energy efficient and certification compliant heat treatment facility for forged aerospace components was provided, helping the company to maintain cost effective and competitive operations in this market sector.

Please visit our website www.e2sl.co.uk



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