



**AEROSPACE & ADVANCED MANUFACTURING**

Front cover shows a Harris Corporation chassis manufactured by TAE using Aluminium Vacuum Brazing technology for the Joint Strike Fighter program.

## AEROSPACE & ADVANCED MANUFACTURING

TAE has a strong reputation as a specialist manufacturer with particular focus on components requiring the Aluminium Vacuum Brazing process. Aluminium Vacuum Brazing is a leading edge manufacturing process for fusing aluminium components together to result in lightweight, high strength, reliable end products.

TAE is the only Australian company to have successfully developed the Aluminium Vacuum Brazing technology to date and one of only a small number world-wide able to provide this process.

Aluminium Vacuum Brazing delivers:

- superior high pressure, leak-tight joints enabling integral liquid flow and electromagnetic interference reduction;
- reduced weight when compared to traditionally manufactured components;
- lower component costs through reduced part counts and assembly labour and;
- excellent electrical and thermal conductivity compared with an adhesive bonded or mechanically attached assembly.

While the capability was developed in support of F-35 Joint Strike Fighter (JSF) applications, the process has a much wider application for components such as:

- cooled electronic/avionics enclosures including liquid-cooled chassis
- cold plates
- heat exchangers
- waveguides
- radar assemblies

and other high-end technologies requiring increased cooling in restricted spaces. This process is not limited to aviation and extends to space based equipment and terrestrial installations.

TAE can provide a raw material to fully completed component solution. This includes not only the brazing process but also the associated steps such as precision machining, heat treatment, conversion coating, painting, component assembly and any required proof pressure testing and/or flow testing. All can be completed in-house to customer specific requirements.

In addition to manufacturing, TAE also has the capability to assist in the design and prototyping of components utilising this process. Further to the capabilities already listed, TAE also maintains a range of other specialist aerospace manufacturing capabilities.

These include:

- Robotic applied plasma spray coatings;
- Computer controlled automatic shot peening;
- Heat treatment including Titanium Heat Treatment;
- Component painting;
- Non destructive testing; and
- Extensive aerospace welding capability including high strength super alloys and Titanium components.

All manufacturing activities are supported by the dedicated Project Management and Engineering team.

### TAE

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