

Mission Critical Manufacturing



Project Detail

A purchaser of mission-critical componentry demands engineering and process excellence from its service and solutions providers. Hosico is one of a select group of Australian companies contracted by the end-user, via its specialist sub-contract suppliers, to manufacture mission-critical components and solutions to the most stringent standards.

The end-user had unique requirements for very robust equipment that must work at all times in a range of applications and harsh environmental conditions, where a failure to perform puts lives at risk. In this instance, a key supplier approached Hosico to manufacture core and consumable mission-critical componentry.

Solution

Hosico was able to work with the end-user's supplier on the formulation, selection and rigorous testing of polymers for heat, impact-resistance and stability in response to temperature and moisture.

Hosico repeatedly achieved and maintained complex geometries and high-quality surface finishes that employed a diversity of leading-edge manufacturing techniques such as gas injection moulding and frictional welding, and drew on Hosico's nearly forty years' experience of complex tool making. Part validation included the use of Hosico's extremely accurate non-contact structured light scanner - one of only two of its kind in the country.

Engineering and process challenges that Hosico overcame in the delivery of product outcomes to the end-user were:

- compliance to a rigorous, non-negotiable defence specification and approvals standard;
- design and prototyping of a component that must maintain its geometry to tight tolerances in the most extreme conditions;
- validation of a complex component;
- compliance to Defence protocols.

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Manufacturing methodology and raw materials employed for this assignment:

- Cinpres gas injection moulding machine;
- filled nylon polymer;
- Branson ultrasonic welding machine;
- Breuckmann smartSCAN 3D HE structured light scanner with resolution to 2 micrometres.

Outcome

Hosico's unique, fully-integrated engineering capability was integral to the development of this solution for a particularly technically sophisticated and demanding end user. Stringent usage requirements formed the basis of a detailed design and functional prototyping strategy and, finally, a complex but robust and reliable product.

This product has been so successful that additional contracts for the supply of tens of thousands of units have been let, with Hosico again the preferred and only supplier. Furthermore, the technology has formed the basis of other products for less demanding end-users and environments, leveraging high-utility and robustness to make other ultra-high quality products for everyday use.

Hosico's capabilities and track record make it an ideal supplier for the sophisticated and technically demanding end-users in segments including Biomedical, Medical devices, Defence, Aviation, Automotive, and Telecommunications.