

PRESS RELEASE

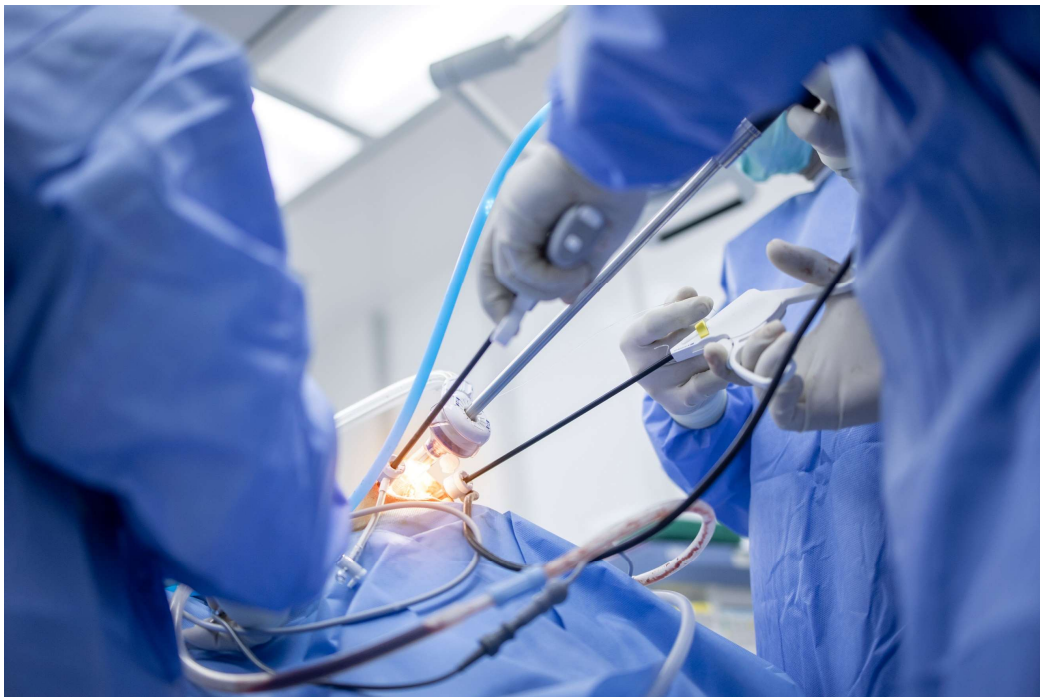
FOR IMMEDIATE RELEASE

Date: 24th February 2024

Editorial:

Alliance Tooling Case Study: Revolutionising Keyhole Surgery with Sustainable Innovation

A leading medical device manufacturer sought the expertise of Alliance Tooling, a premier British plastic injection mould toolmaker, to embark on an ambitious project. The goal was to develop a new polycarbonate cap for an optical trocar device used in keyhole surgery.



This innovative product aimed to be the first reusable component of its kind in the market, indicating a significant leap towards sustainability in medical procedures. The initiative not only promised to enhance the company's green credentials but also to reduce material waste significantly.

Client Challenge

The project presented several challenges, primarily ensuring the complex cap design was optimised for mass manufacturing through plastic injection moulding. Achieving

this required a delicate balance between functionality, aesthetic appeal, and production efficiency.

Our Approach

At Alliance Tooling, we are committed to delivering excellence through collaboration and technical innovation. Understanding the critical nature of this project, our team of injection mould tool designers engaged in regular, intensive meetings with our client. This collaborative approach allowed us to thoroughly understand the product requirements and the challenges it presented.

To address these challenges, we embarked on a rigorous process of mould design optimisation. Our focus was on refining the cap's wall thicknesses and drafts to ensure manufacturability without compromising on its aesthetic appeal to the end user. Through these efforts, we successfully navigated the complexities of the design, ensuring the cap could be moulded efficiently on a mass scale.

Project Highlights

The project was marked by several key achievements that underscored Alliance Tooling's commitment to innovation and sustainability:

- **Annual Plastic Waste Reduction:** Through the introduction of this re-usable cap, we estimated a significant reduction of 1 ton of plastic waste annually. This achievement not only supports environmental sustainability but also represents a milestone in the medical industry's efforts to minimise material waste.
- **Optimised Tool Design for Mass Manufacturing:** Leveraging our extensive experience in injection mould toolmaking, Alliance Tooling successfully optimised the cap's design for mass production. This optimisation process was critical in ensuring that the product could be injection moulded efficiently without sacrificing quality or functionality.
- **Innovative Manufacturing Techniques:** The project utilised fully hardened steel inserts and a direct 8 drop valve gate runner system. These advanced manufacturing techniques contributed to the high-quality and durability of the final product.
- **Enhanced Product Finishing:** The cap featured a textured finish on the A side and a polished finish on the B side, demonstrating our ability to achieve high aesthetic standards alongside functional requirements.
- **Efficient Ejection System:** The incorporation of a stripper plate ejection system exemplified our commitment to manufacturing efficiency, ensuring smooth and reliable production processes.

Conclusion

The successful completion of the optical trocar device cap project stands as a testament to Alliance Tooling's expertise in plastic injection mould tooling, specifically within the medical sector. This project not only delivered a first-of-its-kind product to the

market but also set new standards for environmental responsibility in the medical device industry.

At Alliance Tooling, we are proud to have partnered with our client in this groundbreaking project, demonstrating our ability to tackle complex challenges through innovation, collaboration, and quality.

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Image(s) attached: Image 1: Keyhole surgery

About Alliance Tooling Ltd:

Based in Leicestershire, Alliance Tooling Ltd was founded in 1999 to supply the plastics industry with high-quality injection mould tooling with a personal service for its clients. Now a market leading toolmaking company, Alliance Tooling are committed to manufacturing excellence, offering tooling options from small aluminium prototype moulds through to large, hardened steel, multi-cavity tooling. Customer service at the heart of the company, and with facilities in the UK and the Far East, Alliance Tooling has flexibility to suit every project.