



**CUSTOMER
PART
APPLICATION
AM TECHNOLOGY**

ECS Special Projects
Shock Tube Strain Relief Clip
Device to prevent the lead line from being pulled from the explosive charge
Markforged Composite 3D Printer

THE PROBLEM

One of the strengths of ECS Special Projects is in their core capability of R&D and bespoke product manufacture. Due to the nature of sub-sea EOD (explosive ordinance disposal) and autonomous ROV (remote operating vehicles), each solution is unique to an application, resulting in a product range that is high value and low unit volume. To use traditional manufacturing techniques would be costly, take weeks to manufacture and is restricted by minimum order quantities.

THE ADDITIVE SOLUTION

Using Markforged composite 3D printers to design, develop and manufacture has strengthened ECS's ability to deliver innovative, bespoke solutions, and quickly. ECS use their 3D printer prominently in R&D. The high level of accuracy and functionality of the printed parts enables quick testing, design iteration and proof of concept. But further to R&D, the high quality of the 3D printed part has resulted in new revenue opportunities by manufacturing low batch volumes of end products for external customers.

OUTCOME OF ADDITIVE

"We have been able to enhance the design of components for better functionality. Now, we have a flexible product that can be manufactured with or without threading – same design, easily adapted to each specific requirement. Due to 3D printing, we can choose to drop in a Nylon insert lock nut, or not, at the same low cost and short lead times."



ABOUT ECS SPECIAL PROJECTS

Established in 2011, ECS Special Projects, based in Dorset UK, is a specialist manufacturer of mechanical equipment and assemblies for marine, sub-sea, and defence industries. Supplying clients internationally, ECS Special Projects specialises in the research, development, design and manufacture of bespoke EOD products and innovative ROV autonomous solutions.

www.ecs-sp.co.uk

"Time is the best outcome of using Additive. To manufacture something traditionally is generally 2-3 weeks. Now we can design something and have it on our desks the following morning. The time saved and ease of quickly knocking up a concept and printing it is incredible"

Steve Randall, Operations Director

RETURN ON INVESTMENT

TRADITIONAL FABRICATION	MACHINED IN NYLON. OUTSOURCED MANUFACTURE WITH A MIN. PURCHASE QUANTITY OF 200 UNITS AT £10 PER UNIT
USING ADDITIVE	ENHANCED CLIP, 3D PRINTED IN NYLON AND MICRO CARBON-FIBRE. PRINTED AS SINGLE UNIT IN SMALL BATCHES OF 50
COST SAVING	3D PRINTED COST PER PART 40p. CNC COST PER PART £10 COST SAVING: 96%
PART PERFORMANCE	PART RE-DESIGNED TO INCLUDE ABILITY TO DROP IN A NYLOC FOR ENHANCED PERFORMANCE

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