



## Process Services

## Onsite Machining

### THE STRENGTH TO PROTECT

### Background

Fortress Energy has long-standing relationships with many clients; however, this particular client has a working history with our onsite machining specialists spanning more than 20 years, primarily within the Shipbuilding sector.

With a trusted relationship firmly in place, the client contacted our onsite services division to deliver the first scope of work by Fortress Energy with a firm understanding that the project would be delivered right first time.

### Scope

A new build research vessel being built in Birkenhead had been launched into water. 70% complete, the project was at a stage where they needed to permanently bolt down the ship's propeller system.

Fortress Energy was asked to bore out insitu for installing fitted bolts in the propeller shaft bearing blocks and then bore out for fitted bolts in the shaft coupling.

### Challenge

With access constraints, extremely accurate boring requirements (within a 1000th of an inch) combined with a demanding schedule made this a challenging scope of work.

On inspection, it was realised that the team had to bore out the holes to make them bigger insitu. Precision was required with no room for error; therefore, a bespoke machine was used to ensure it was fit for purpose, due to the tight access constraints.





## Local and skilled. Global and strong

### Solution

Fortress Energy deployed a highly experienced team with the right skills to ensure smooth delivery.

Working closely with Climax, global manufacturer of portable machining equipment, a standard machine was customised, combining 150+ years-experience from the team involved to develop an effective and efficient solution.

A Climax boring bar was modified, and jig plates were fabricated to mount the machine. Firstly, the team bored out the bearing blocks, the shaft itself was approx. 200mm diameter, therefore the bearings were large. The bolts were then fitted and when securely in place, a chock fast resin was used firmly positioning the bearings. Once alignment checks had taken place, Fortress Energy then bored out the shaft couplings and the fitted bolts were positioned in the couplings, allowing the shipyard to spin the propeller shafts in the water for the first time under load.

### Results

The scope was delivered in five weeks, with the team working 7-days a week to meet the agreed six-week timescale. Working closely with Climax and the client's machine shop, customised machinery and manufactured fitted bolts was project managed seamlessly to avoid delay.

Delivered safely with no incidents and within budget, the client was extremely satisfied to complete the work ahead of schedule, ensuring their deadline was not impacted.

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 **CLIMAX**  
Portable Machining & Welding Systems

