



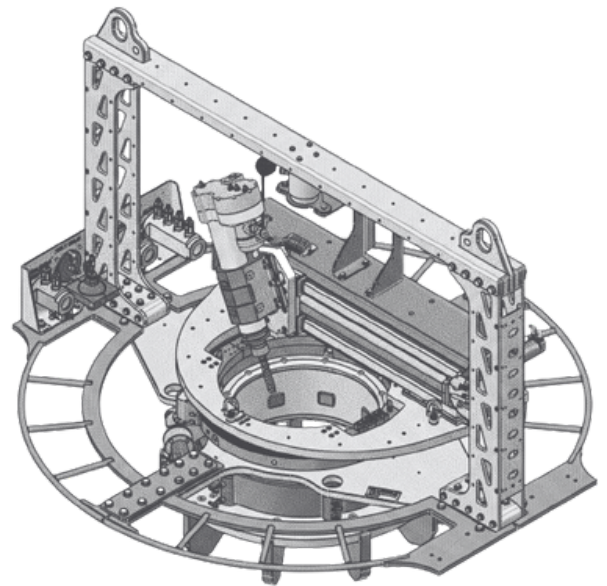
Tailored subsea solutions for complex wellhead remediation work.

The AX Machining Tool

In subsea oil and gas, wellheads are essential for anchoring drilling and managing deepwater pressures, but their underwater location can often cause corrosion that affects the integrity.

Blakemere was tasked with machining a corroded wellhead (Marlin-1) using the AX Machining Tool, a subsea system operated by an ROV. The AX Machining Tool machined the sealing surface while preserving the required AX angle.

The wellhead needed re-entry due to modern standards but was unable to due to corrosion and mechanical damage. Blakemere's AX Machining Tool provided a custom solution to restore the sealing surface and ensure safe operations.



Key Operational Features



Power to all Major Functions

Through the use of ROV supplied hydraulic power.



Accuracy to the Wellhead Axis

Utilising a clamping mechanism where the clamping dogs move inward, guiding the tool.



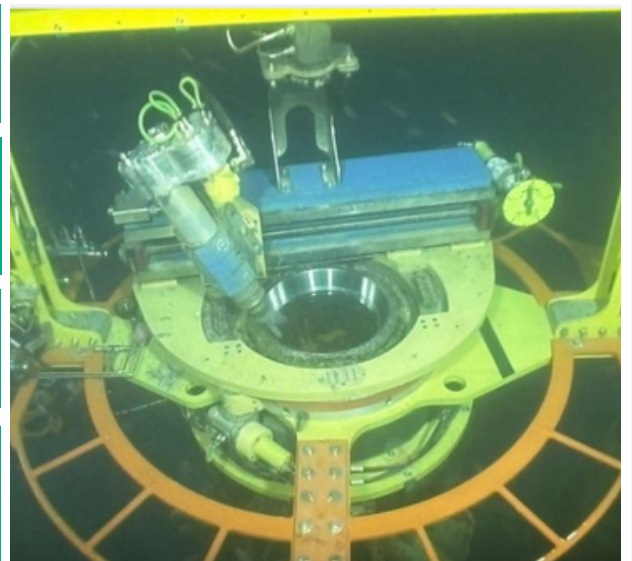
Improved Centering Reliability

With uneven number of clamping dogs.



Controlled X Axis Feed

In addition, during the machining process, slew rotation around the wellhead axis and milling head operation.





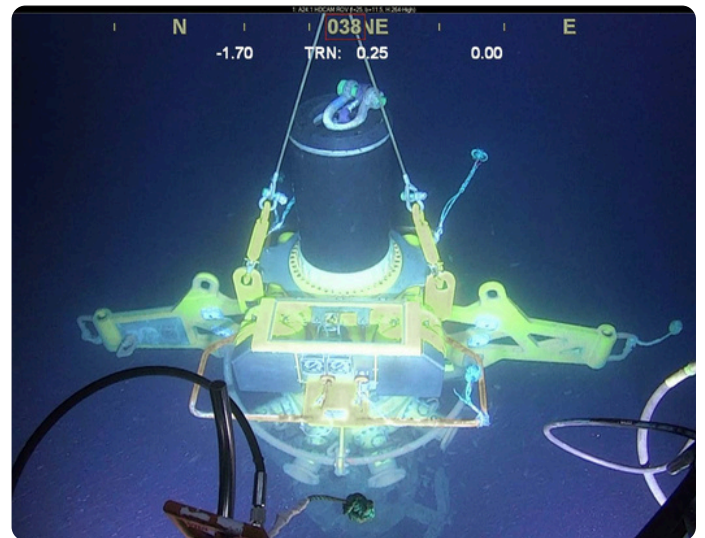
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The Wellhead Connection System (WCS)

In conjunction with the AX Machining Tool, Blakemere has created the Wellhead Connection System (WCS).

The WCS is a bespoke subsea tool designed to connect securely to a heavily corroded wellhead arrangement. It seals to the internal bore of a 13-5/8" housing, ensuring a verified sealing interface through a back seal test.

This system also features guide wire attachment points and is designed to withstand all associated loads, including bore pressure of 2,300 psi, riser bending loads, riser tension, and guide wire loading.



How the WCS prepares for well operations



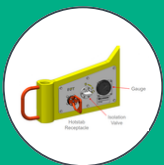
Landing on the Wellhead

Once landed on the Wellhead, all nine latching dogs are activated to lock the WCS onto the housing.



Drive Down and Tighten the Mandrel

The hydraulic slew drive lowers onto the WCS to connect with the mandrel. There, the WCS rotates the mandrel until seals touch the wellhead sealing face, then applies final preload to lock the connection firmly.



Back Seal Test

To confirm the integrity of the primary and secondary seals, the back seal cavity is pressurised via the ROV hot stab interface, with the isolation valve and monitoring gauge supporting control and verification of the test. Once sealing integrity is confirmed, guide wires can be inserted into the receptacles, the riser can be run, and the WCS is ready for well operations.