

Enabling Intelligent Intervention: A Connected Vision

In pursuit of safer and more cost-effective liquid-based rigless/riserless interventions, the oil and gas industry is identifying new techniques and technologies that can help it maximize revenues from existing brownfields and new assets by enhancing their output.

In a “lower for longer” environment, operators are looking to reduce the complexity and increase the efficiency of hydraulic intervention operations. At the heart of the matter is the practical issue of accessing subsea wells more easily and intelligently.

SECC's Hot Make Hot Break (HMHB) connector provides operators with the best available, safest, and most cost effective technology to access subsea wells from a range of subsea production assets including manifolds, PLEMs, PLETs, and subsea trees. The HMHB, Emergency Quick Disconnect (EQD) provides a reconnectable, self-sealing weak link that breaks during vessel drift off. These facets minimise downtime and maximise safety.

Permanent Subsea Solution for Hydraulic Well Intervention

Considerable operational savings can be realised by installing the HMHB on a subsea manifold creating a permanent access point. The estimated cost of a single HMHB access point is just 1-2% of a standard manifold build. The practice of pre-installing a HMHB on a subsea manifold to allow hydraulic intervention from a DP-2 vessel has been undertaken by Secc's clients since 2014.



Figure 1: (Left) Preinstalled 2 inch female connector on a manifold, in the mated position; (Right) The manifold being deployed subsea.

This methodology was used by a major oil company to complete a series of successful scale squeezes on two of its North Sea subsea assets. The operator used an open water conduit connected to the permanently mounted HMHB allowing a cheaper “vessel of opportunity” to be used in place of a LWI vessel. It also removed the need for more elaborate intervention equipment.

In light of positive results, SECC has since seen the HMHB connector permanently mounted on other subsea manifolds and new-build projects in the North Sea. Having the HMHB permanently installed subsea also reduces the costs associated with mobilisation and movement of intervention equipment from one region of the world to another.

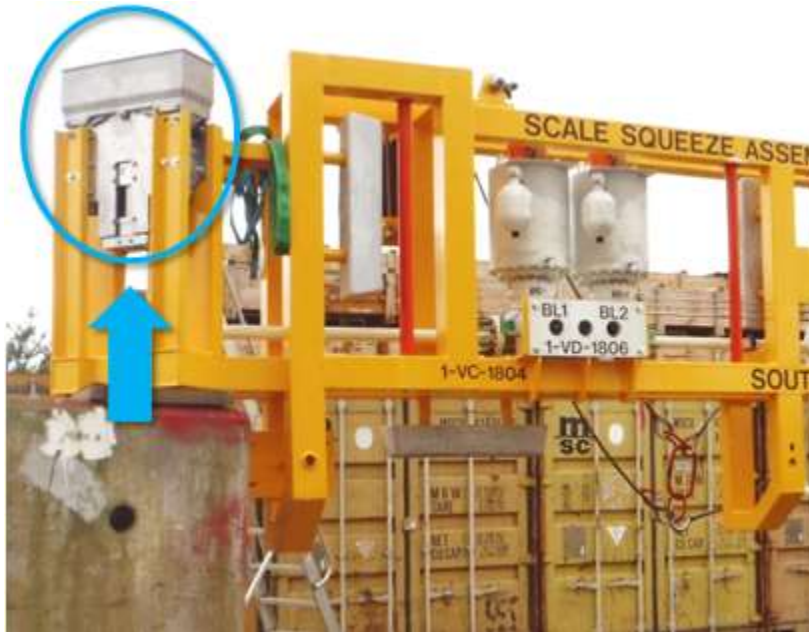


Figure 2: Secc female connector preinstalled on an extension frame prior to being attached to a manifold.

Savings associated with the reduced complexity of operations bypassing the need for large equipment spreads, and the ability to use “vessels of opportunity” (which in turn can speed up operations and reduce deferred oil costs) are all leading to seven-figure cost savings per intervention.

A New Era

The subsea intervention industry is witnessing an important new era in technological innovation, fueled by the widespread desire to find safer, easier, and more cost-effective ways to maximise output from existing brown fields and new assets. A key component of this effort is Secc’s Hot Make Hot Break connector. Its plug-and-play capability allows instant access to subsea wells without the need for specialist vessels or equipment, delivering considerable time and cost savings whilst assuring maximum safety.

CLIENT	PROJECT	QTY	PRODUCT	DELIVERED
TALISMAN ENERGY (UK) LIMITED	TWEEDSMUIR	2	HMHB	Jul-12
ITHACA ENERGY (UK) LTD	GREATER STELLA	2	HMHB	Apr-13
TALISMAN SINOPEC ENERGY (UK LIMITED)	MONTROSE BLP	2	HMHB	Feb-14
REPSOL SINOPEC RESOURCES UK LIMITED	BLANE	1	HMHB	Mar-17
TECHNIP FMC for ITHACA ENERGY (UK) LTD	ITHACA VORLICH	1	HMHB	TBD

Table 1: Current reference list of where Secc's HMHB connector is permanently mounted onto a subsea production system.

To date there are now 9 connectors permanently mounted subsea in the UK – the first of which was installed in 2012 with no operational issues.

SECC's technologies speak to the heart of the growing energy transition debate. It helps Operators get more from the original oil in place by reducing the cost and complexity of hydraulic intervention operations & from a cleaner aspect based on the amount of CO2 per KG of steel used in an operation being much less - as the amount of equipment required is reduced.

SECC also have demonstrated the technology to BSEE (USA Bureau for Safety and Environmental Enforcement) and they have indicated that they see no reason why this technology and approach should not be used globally.

To wrap it up the technology has been proven to lower the cost and complexity of hydraulic interventions. The technology can contribute to an energy transition strategy and can demonstrate a reduction in CO2 emissions associated with hydraulic intervention.