

Terminator vessel-deployed subsea wellhead cutting system

A simpler, safer, and more efficient solution for subsea wellhead removal

Subsea wellhead removal is a required step to successfully abandon a well, but it can cost a lot of time and money to perform the job. Shifting from using a rig to vessel-based operations unlocks more flexibility and results in lower costs. But, there are still constraints and risks associated with traditional vessel-deployed solutions like abrasive water jet cutting (AWJC) methods, which typically require substantial deck space, personnel on board, horsepower, and have water depth limitations.

Simple, safe, efficient solution

To combat these issues, Baker Hughes introduced its **Terminator™ vessel-deployed subsea wellhead cutting system**. This one-of-a-kind system includes a hydraulic motor, wellhead connector, and industry-proven **Hercules™ cutter** to deliver a simple, safe, efficient wellhead removal solution. The Terminator system allows you to execute your subsea wellhead cutting from a vessel in an unprecedented short period of time of less than an hour for single cuts and within a few hours for multi-casing cuts.

By using a mechanical cutter instead of AWJC methods, the Terminator system eliminates associated risks with high

pressures, and only requires 2 versus the 6-8 personnel on board typically needed to operate an AWJC water cutter. It offers a much smaller footprint compared to AWJC equipment that takes up 100-150 m² of vessel deck space and weighs 50-60 tons. Once the Terminator system is deployed overboard, there is no additional equipment on the deck. It also reduces the overall environmental footprint by burning less fuel, at only 100 hp compared to 1000 hp of AWJC systems.

How it works

The cutting system is guided into the well and the connector latches onto the subsea wellhead. An ROV is used to guide the tool and to provide power at deeper water depths. Alternatively, divers can also be used in shallow water when hydraulic power can be supplied from the deck. The ROV uses an internal HPU to enable rotation of the motor and Hercules cutter. Pressure to the knives' actuator is also adjusted by the ROV to activate them and make the cut. A pressure drop signals positive indication that the pipe has been completely cut. This differs from the AWJC which does not provide confirmation of a full circumferential cut, possibly leaving uncut areas that make it harder to recover the pipe.

Applications

- Cutting and retrieval of subsea wellheads
- Well abandonment/ decommissioning

Benefits

- Deploys with a small crew of 2 field personnel
- Requires minimal to no deck space
- Reduces environmental footprint, using only 100 hp
- Offers quick, easy mobilization of 1-2 hours
- Confirms positive indication of completed cut
- Increases flexibility with no limitation on water depth
- Lowers HSE exposure



For a single string cut, the entire cutting operation—deploying from the deck to laying back down on the deck—takes approximately 2-3 hours. This saves considerable amount of operational time compared to 6-12 hours using a standard rig or 4-5 hours using other vessel-deployed methods.

Immediately following the cutting procedure, the subsea wellhead and

conductor are removed. This can be performed during the same run, or as a separate trip, depending on the length recovered and surface handling capability.

Contact your local Baker Hughes representative to learn how the Terminator system can reduce time and costs on your next subsea wellhead removal operation.

Terminator cutting system specifications

Subsea wellhead connection	18 3/4 in. H-4; adjustable for MLS systems and other sizes
Load capacity	100 tons*
Casing/conductor cut range	9 5/8 in. to 60 in.
Number of casings cut	1 to 3
Overall dimensions	4.59 ft (1.4 m) diameter x BHA length (depending on cut-depth)
Weight in air	6 to 10 tons (depending on BHA configuration)
Maximum water depth	10,000 ft (3,000 m)*
Temperature rating	14 to 104°F (-10 to 40°C)
Vessel lifting requirements	Crane or winch
Vessel deck space requirements	Minimal, accommodate tool length
Power supply	Work-class ROV Umbilical from vessel
Connections	2 port Blue Logic 60 mm valve stab plus 4 port API 35 mm stab
Hydraulic consumption	Minimum: 100 l/min Maximum: 400 l/min
Motor speed	Minimum: 25 rpm Maximum: 200 rpm
Torque	0-25000 Nm

*Rating can be upgraded upon request.