

Rapid Response Disconnection Emergency Cutting

Hydraulically activated cutters are emerging as mission-critical technology in situations where a rapid response emergency disconnection may be needed as part of a project's emergency disconnection contingency planning. Any situation where a physical connection is used to tow, tether or support two objects offshore may benefit from the provision of an emergency cutter.



Cutting Edge Technology

The mechanics of guillotine cutting are well understood. Hydraulically activated, the guillotine can be used to cut steel wire rope, armoured electrical cables/EFL, hydraulic lines/hoses/HFL and softline synthetic fibre ropes by forcing the blade into the material.

As the material undergoes plastic deformation this V wedge creates a huge tensile load, once this tension exceeds the ultimate tensile strength of the material is cut.

Unlike other cutting methods where there is a risk of the item flexing during cutting and either trapping or snapping the blade, closing the guillotine's anvil locks the metal / plastic elements in position ensuring the cut is completed successfully with no risk of jamming.

The blade geometry can be optimised to suit the materials being cut. As a result, the mixed material bundles found in umbilical, hoses and cables such as multiple fluid transfer lines, steel tension member, fibre rope, reinforced hoses and electrical conductors, are rapidly cut by the guillotine cutter in seconds.

The guillotine cutting tool is made from coated steel or lightweight aluminium and readily integrated within subsea intervention systems.

There is no depth limitation to the use of the cutter and can be deployed long-term.

The hydraulic cutters key features include:

- Rapid cutting of steel wire rope, fibre rope, armoured cable, umbilicals - multiple fluid transfer jumpers, electrical lines and tension wire
- Compact design and range of construction materials for deployment, offshore, subsea and in nuclear environments
- Long lasting, robust and reliable hydraulic cutter and blades
- Readily integrated within existing equipment.



Emergency Cutting Scenarios

Emergency cutters have been deployed in a range of mission critical applications.

Maritime Winch Line Cutters



Steel Wire Winch Cutter

Deck mounted steel wire winches, traction winches and crane mounted winches are a common feature of many offshore projects such as subsea deployments, abandonment and recovery, mooring and towing. Integrated into the winch configuration, the Allspeeds winch line cutter is designed to handle the types of high performance, multistrand steel wires typically used offshore.

The Allspeeds steel wire winch line cutter can be readily adapted for use on any type of winch. It allows free movement of the wire through the closed cutter mouth without affecting normal winch operations. Once activated, the Allspeeds cutter will cut the steel wire in a few seconds, preventing further risk to personnel or the vessel.



Fibre Rope Winch Cutter

Fibre ropes are an attractive alternative to steel wire in towing, lifting and salvage operations. Easier to handle, lighter and stronger, they allow vessel operators to maximise winch load capacity.

The fibre rope cutter is a lightweight aluminium, or more robust steel, construction mounted on a transverse arm that allows free movement of the rope through the closed mouth, without affecting normal operations. When the cutter is activated, the recessed blade is released, and the rope is cut against the tool's anvil.

Subsea Intervention

Allspeeds emergency cutters enable rapid cutting of hydraulic and electrical flying leads as well as mixed material bundles typically found in umbilical, hoses and cables such as multiple fluid transfer lines, steel tension member, fibre rope, reinforced hoses and electrical conductors.

As an integral part of an IWOCS-deployed, well commissioning tool, an umbilical is connected to sacrificial hoses and cable bundle securely positioned in the mouth of the emergency cutter. Once activated the sacrificial bundle is cut in a single operation within seconds.

Designed for deployment for extended periods subsea, the emergency cutter can be function tested in situ, ensuring the tool is ready for use in the event of an emergency. It can also be supplied as ROV resettable ensuring intervention operations can be resumed as soon as possible in the event of an emergency disconnection.

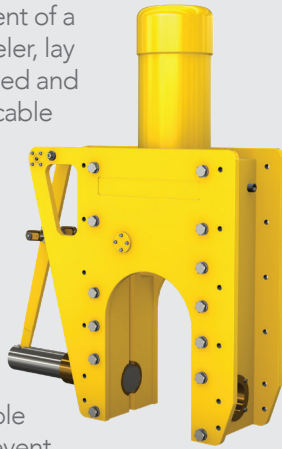


Emergency Cutting Scenarios cont.

Offshore Wind

During cable lay, in the event of a problem with the cable reeler, lay operations may be disrupted and the vessel put at risk. The cable cutter is either deck mounted or deployed subsea with a work class ROV.

The cutter can be used for cable lay and repair. During cable lay, the cutter is mounted on the stern of the vessel with cable passing through it. In the event of a problem with the cable reeler that puts the vessel at risk, the cutter can be activated immediately, severing the cable and freeing the ship to return to port.



Airborne Emergency Cutters

Allspeeds emergency cutters aren't restricted to maritime and offshore applications. They are also used airborne on helicopters during power line maintenance.

An Allspeeds emergency cutter weighing just 1.2kg has been developed for helicopters for maintenance personnel suspended in a basket during 'live-line' maintenance on high voltage, pylon power lines. The spring-loaded cutters cut the 'anti-spin' lines instantly in the event the basket needs to be lowered and released quickly.



Contingency Planning

Allspeeds Emergency cutters should be seriously considered as part of contingency planning for projects involving towing and tethering.

At one level, they offer clear health and safety benefits when a vessel and crew may be at risk during vessel towing and power line maintenance. While, at another level, they have commercial and environmental benefits

during subsea well intervention and offshore wind projects, for example, where project disruption has a significant impact on project delivery times and costs.

Allspeeds cutters have a track record over many years of providing a clean, emergency cut within a few seconds. Cutters can be readily customised to meet specific project requirements.

To find out how Allspeeds emergency cutters can assist your contingency planning contact:

Allspeeds Ltd

Royal Works, Atlas Street
Clayton-Le-Moors
Accrington
Lancashire
BB5 5LW

Tel: **+44 (0)1254 615 100**
Email: **info@allspeeds.co.uk**
Website: **www.allspeeds.co.uk**

