

Riser Severance System (RSS)

Remotely deployable cutting solution for safe and efficient marine riser removal in emergency subsea operations

FEATURES

- Pre-curved linear shaped charge (LSC) housed in a split-ring assembly for precise riser severance
- Dual detonator system supports simultaneous initiation from surface vessel
- Armored cable deployment for flexible operations
- Pressure-tested for ultra-deep-water environments
- Compact and modular design allows transport by road, sea, or air

BENEFITS

- Enables riser severance without vertical access, ideal for shallow water blowouts
- Deploys from dive support vessels, drill ships, or semi-submersibles using ROV
- Fires remotely from a safe offset, improving crew safety
- Cuts cleanly around the riser circumference, minimizing debris and damage
- Mobilizes quickly for emergency response, reducing downtime and risk
- Supports safe and efficient well-capping operations in high-risk environments

Overview

Subsea well blowouts often require marine riser removal to support well capping operations. In shallow water, hydrocarbons at the surface can block vertical access, which renders traditional shear deployment unfeasible. To address this challenge, Halliburton developed the Riser Severance System (RSS).

This system is a remotely deployable explosive cutting tool designed for 21-in. and 24-in. marine risers. Operators deploy the RSS using a work-class remotely operated vehicle (ROV) from a surface vessel positioned away from the well site. The system features a pre-curved linear shaped charge (LSC) housed in a split-ring assembly that securely closes around the riser. Once in position, the initiation system sends voltage through an armored cable to simultaneously fire detonators on both halves of the tool. These detonators activate an initiation charge into the LSC, producing a high-velocity copper jet that cleanly severs the riser wall.

The RSS can be mobilized quickly by road, sea, or air. This supports rapid response in emergency scenarios and improves safety and efficiency during well intervention.

Typical Applications

- Emergency subsea response where vertical access is blocked by surface hydrocarbons
- Shallow water blowouts requiring rapid riser severance to support capping
- Operations from offset vessels where direct overhead positioning is not possible

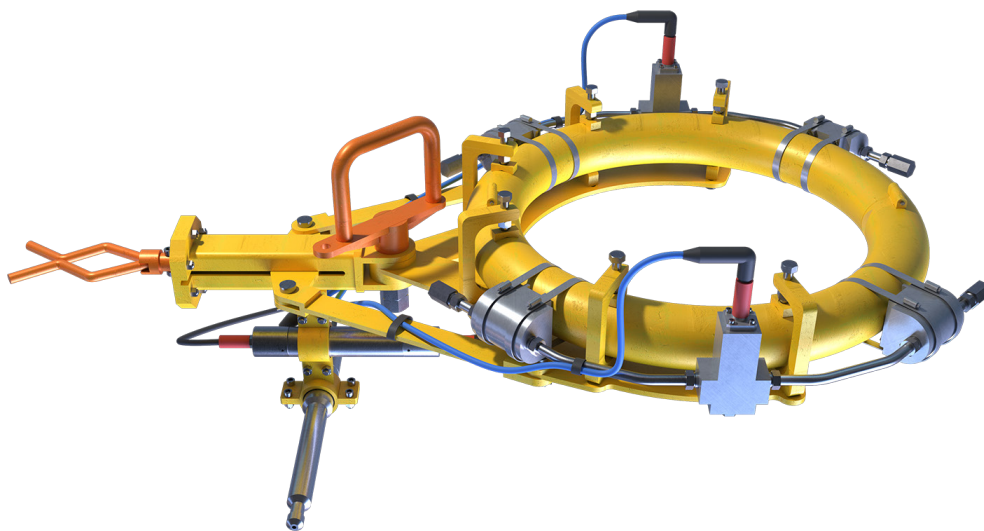


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Specifications (RSS 21-in. and RSS 24-in. marine riser configuration)

PARAMETER	VALUE
Target (marine riser)	21-in. OD, 1.188-in. wall thickness
	24-in. OD, 1.500-in. wall thickness
Maximum working depth	12,500 ft seawater (3,810 m)
Tool weight (air / water)	21-in. 97 kg / 82 kg
	24-in. 101 kg / 85 kg
ROV interface	1 main lift point (grabber compatible)
	1 fishtail handle for closing
Surface connection	Standard mono cablehead connection; Armored monocable 7/32-in. or 5/16-in. diameter
Firing mechanism	Surface initiated via wireline firing panel
Charge configuration	Pre-curved linear shaped charge (LSC), centralized within split-ring housing
Design verification	Pressure rated to 12,500 ft water depth

Note: Contact Halliburton for engineering review if riser OD, wall thickness, or internal hardware differs from specifications listed above.



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