



SCAR Seabed System Pre-Cut Trenching



Specification

| PRE-CUT TRENCHING | SCAR 1 | SCAR 2&3 | SCAR MAX |
|-------------------------|--|--|--|
| Max. Operating Depth | 3000m + (practical limitations apply) | 3000m + (practical limitations apply) | 3000m + (practical limitations apply) |
| Trench Depth | Up to 1.4m (single pass) Up to 2.4m and 3.4m in subsequent passes | Up to 1.4m (single pass) Up to 2.4m and 3.4m in subsequent passes | Up to 3m (single pass) Up to 5.2m and 7.4m in subsequent passes |
| Speed Range | Up to 1000m/hour | Up to 1000m/hour | Up to 1000m/hour |
| Tow Force (Design Load) | 150Te | 150Te | 350Te |
| Steering | Duplicates vessel route: self-correcting bridle | Duplicates vessel route: self-correcting bridle | Duplicates vessel route: self-correcting bridle |
| Minimum Turning Radius | < 50m | < 50m | < 75m |
| Weight | Variable ballast 17-40Te | Variable ballast 17-40Te | 105Te |
| Length (assembled) | 9.7m | 9.7m | 23.6m |
| Width (assembled) | 5.3m | 5.3m | 15.4m |
| Height (assembled) | 2.7m | 2.7m | 6.2m |
| Transportation | All SCAR Seabed Trenching Systems are road transportable. | | |

The SCAR Seabed System family currently includes 3 system models - SCAR 1, SCAR 2&3 and SCAR MAX. SCAR 1 is the original SCAR system design, and is capable of clearing a 10m swathe in route preparation mode and trenching to 1.4m in pre-cut trenching mode, each in a single pass. With all SCAR systems, far greater clearance widths/trench depths are possible using multipass techniques. SCAR2 & 3 are the next generation of the SCAR 1 tool, and these include a removable share option as well as compatibility with the 13m and 15m pass Route Preparation and Backfill systems. Most recently, the SCAR MAX system has been developed as the strongest and most powerful pre-cut trenching plough in the world (able to withstand through chassis loads of up to 1000Te). SCAR MAX can deliver pre-cut trenches of up to 3m in a single pass. All three models encompass the ESS design philosophy of safe, simple and robust, and are tailored to deliver the most risk averse and cost effective trenching solution available on the market.

“...because we think differently”

Clients Include:



SCAR Seabed System Pre-Cut Trenching



“...because we think differently”

Established in 1996, Ecosse Subsea Systems is known as an innovative provider of both products and services for all offshore installation requirements and has earned a global reputation for outstanding service delivery. Ecosse is an industry frontrunner in the delivery of trenching, subsea lifting and technology development services and expertise and are providers of onshore and offshore Personnel to the Oil & Gas, Renewables and Interconnector markets.

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SCAR Trenching Capabilities

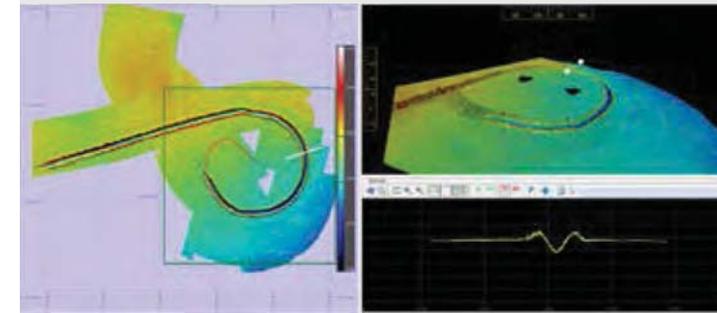
The modular SCAR Seabed System has been developed to deliver an all-in-one or one-part solution for the trenching and burial of subsea cables, pipelines and umbilicals.

SCAR in pre-cut trenching mode is designed to excavate trenches along a given product route in advance of the product lay campaign, off of the project critical path.

SCAR can excavate trenches ranging from 0.6m to 3m in a single pass (depending on the model and configuration of the tool), with greater depths possible by utilising the system's unique in-trench multipass capability.

SCAR is launched and recovered over the stern roller of an AHTS vessel, and can be operated from the beach (0m LAT) to very deep water.

Inherently simple and robust, the SCAR Seabed System in pre-cut trenching mode reflects the lowest risk, highest productivity trenching option for a wide range of products and projects, particularly those associated with arduous/challenging seabed conditions.



SCAR Seabed System Pre-Cut Trenching Key Features:

- Designed to cut trenches from shore to shallow to deep water: 3,000m+
- Pre-Trench cutting for cables, umbilicals and pipelines
- World's first 'in-trench' multipass plough
- Suitable for steel core umbilicals, pipelines, flexible pipelines, power cables, life of field seismic arrays
- Can be launched and recovered from a range of vessels in high sea states – no crane or A-frame required if stern roller available
- Very deep trenches possible
- Rapid mobilisation and deployment
- Steerability – proven ability to follow vessel route accurately
- Will cut around curves and bends
- SUST technology allows efficient uninterrupted soils testing for full lay route trenchability and soil burial protection index assessments

SCAR Seabed System

- Available Configurations:
 - Route Preparation/Boulder Clearance
 - Trenching - pre-cut/post-lay/multipass
 - Backfill
 - SUST (SCAR Uninterrupted Soils Testing)
- Available Models:
 - SCAR 1 (up to 1.4m single pass - deeper trenches with multipass)
 - SCAR 2 (up to 1.4m single pass - deeper trenches with multipass)
 - SCAR MAX (up to 3m single pass - deeper trenches with multipass)
- Economic cost per metre
- Low mobilisation costs
- 5 to 150 tonne pull capacity (SCAR 1, 2 & 3) - smaller tow forces allow smaller support vessels hence lower fuel consumption, increased efficiency and reduced CO₂ emissions
- Very high power to weight ratio
- <50m turning circle
- Road/container transportable
- Can operate in deep or shallow water and at shore ends
- Robust design with single moving part and no hydraulic or electrical connections - significantly reduced tool downtime and offshore spread and personnel costs
- Suitable for the Oil & Gas, Renewables & Interconnector sectors

With rough terrain a speciality, SCAR is robust and reliable in conditions too difficult for conventional ploughs to handle.

SCAR is safe, simple & robust.