



Specification Data Sheet

Rotech T4000 Subsea Excavation System

Description

The Rotech T4000 is one of a range of patented subsea excavation tools operated by Rotech Subsea Limited. The Rotech tools are currently the “state of the art” in mass flow technology, excavating with a high speed but low pressure column of water. Key advantages include:

- Non-contact method of excavation providing high levels of safety for sensitive subsea structures and pipelines.
- Excellent performance in wide variety of seabed materials, including stiff clay.
- Straightforward deployment with minimal deck space requirements.
- Speed and ease of mobilisation. Everything is designed to fit into 20' containers and has been flown to several projects in the past.

Uses

The Rotech T4000 can be used for a wide variety of subsea excavation requirements, such as:

- Pipeline, umbilical and cable trenching, pre-trenching or deburial.
- Pipeline free-span remediation.
- De-burial of subsea templates, well-heads or jacket members, from seabed materials, mud slides or drill cuttings.
- Salvage of dropped equipment or vessels.
- Removal of rock dump.
- Site preparation for subsea installations.
- Civil excavation works, including harbour/berth clearance, channel maintenance and site preparation for sea defense works.

Excavation Method

The Rotech T4000 excavation tool generates a large volume column of water travelling vertically down to the seabed at a velocity of up to 10 meters per second. The effect of up to 4 cubic meters of water per second hitting the seabed at this speed creates a powerful excavation force capable of breaking up stiff clays.

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Performance

Rotech T4000 Performance Rates		Excavation Rates	
Flow Rates	0 to 4 m ³ /sec	Sand/Fine silt	Up to 1200m ³ /hour
Exit Velocity	0 to 10m/sec	Gravel/Rock dump	Up to 800m ³ /hour
Operating Depths	3m to 250m	Stiff Clay	Up to 400m ³ /hour
Thrust	0 to 3 tonnes		

Control

The patented shape and impeller alignment of the Rotech T4000 eliminates reactive torque, giving the tool unparalleled stability in the water – without clump weights. A sonar system is mounted on the Rotech T4000 to provide a real-time profile of the excavation effect immediately under the tool. The tool is powered by a compact hydraulic power pack rated to 400 litres/min @ up to 200 bar, which provides immediate control of the excavation effect.

The combination of a stable tool, providing a profile of the excavation as it happens, combined with instant controllability allows the Rotech T4000 to be used for projects requiring the highest levels of accuracy and control.

Equipment Dimensions & weights

No of units	Description	Length(m)	Width(m)	Height(m)	Weight(kg)
1	Rotech T4000 subsea excavation tool	3.8	1.4	2.2	5000
1	Skid mounted hydraulic power pack 400l/min @ 200 bar	2.5	1.6	2.0	3600
1	Hydraulic hose reel winch c/w 3 x 120m umbilical hoses	2.0	2.0	2.0	3500
1	Container of spares and tools inc 2 x Reson 9001 Seabat multi-beam sonar systems.	6.3.	2.5	2.5	8000