

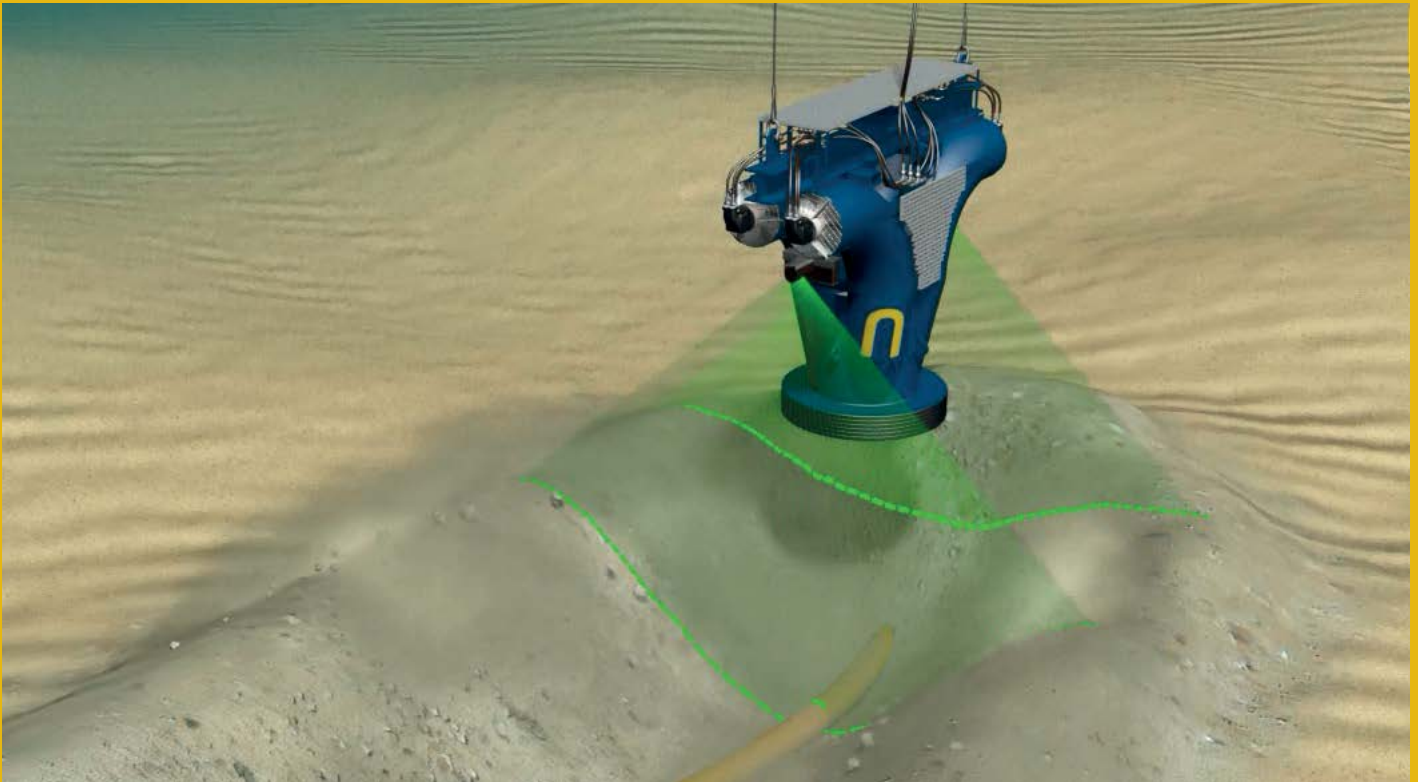


**N-SEA
KNOWLEDGE:
SHAPING
A NEW
SUBSEA ERA**

**N-SEA EQUIPMENT
EXCAVATION
TOOLS**

DELIVERING SUBSEA
PEOPLE / VESSELS / EQUIPMENT

N-SEA: CONTROLLED FLOW EXCAVATION TOOLS



N-Sea is a leading independent specialist subsea services contractor operating within the international oil & gas and renewable energy markets.

Our N-Sea Twin-prop and Quad-prop excavation systems were designed and developed in-house; each system is constructed to be non-contact and non-intrusive, ensuring controllable and safe operations for operators and clients' assets.

Both the Twin-prop and Quad-prop systems produce a focused high flow volume of water which is directed downwards onto the seabed. The high flow volume of water breaks up the seabed formation and disperses the seafloor evenly. Both systems can be used for trenching and deburial on varying types of seabed including; debris, rock, sand and clay in advance of operations starting. Such operations include IRM, leak detection, repositioning and decommissioning. Depending on soil type depths of up to 3 m can be achieved.

The equipment is housed in a large tube fitted with two or four propellers driven by a powerful compact hydraulic motor. Each system is fitted with a 2D or 3D sonar survey package (multibeam, bathy sensor, altimeter, motion sensor and gyro sensor) to provide accurate data for pre and post surveys and for live monitoring during operations.

Each system is designed to be rapidly mobilised and safely deployed from vessels, jackups or moored barges.

BENEFITS

- High level of safety for sensitive subsea structures, pipelines and cables (assets) due to the non-contact and non-intrusive system
 - Rapid deployment and quick mobilisation time
 - Live monitoring during operations
 - Precise depth establishment by using multibeam
 - Accurate data by using multibeam
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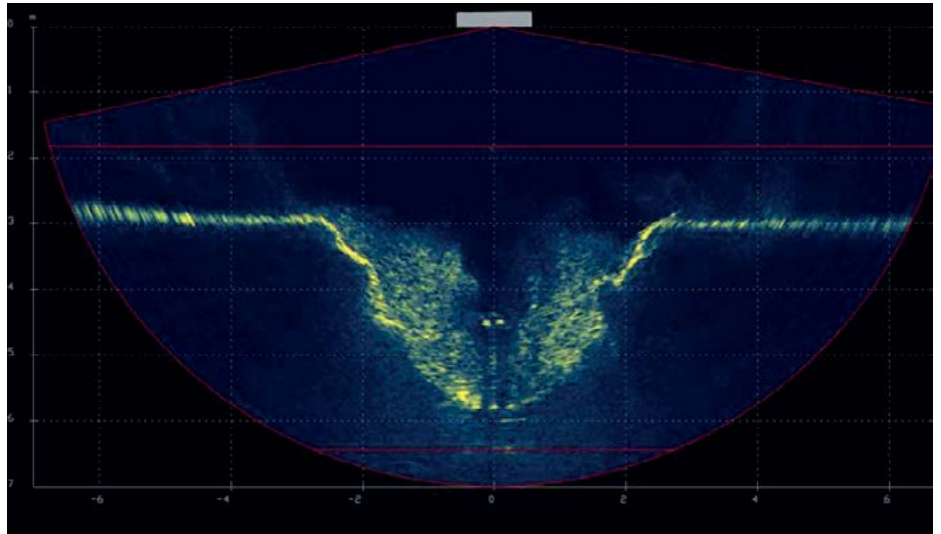
N-SEA: CONTROLLED FLOW EXCAVATION TOOLS

TWIN-PROP: SPECIFICATIONS

General Information

Main components of the Twin-prop are two double bladed propellers contained within a stainless-steel tube.

Stability (position and movement) is assured by the opposite direction in which the blades rotate. The rotation of the propellers sucks/draws water into the topside of the Twin-prop and then water is forced out from the downside onto the seabed.



DIMENSIONS AND WEIGHT

Width	1110 mm (external diameter)
Width	800 mm (internal diameter)
Height	1889 mm
Weight in Air	1500 kg
Number Available	1
Certification	Lloyd's for the lifting appliances

HYDRAULIC PACK OF SYSTEM PRESSURE

Power Supply	380 VAC/50 Hz
Power Pack	440 VAC/60 Hz max. 300 Bar (adjustable flow/ pressure)
Maximum Working Pressure	280 Bar

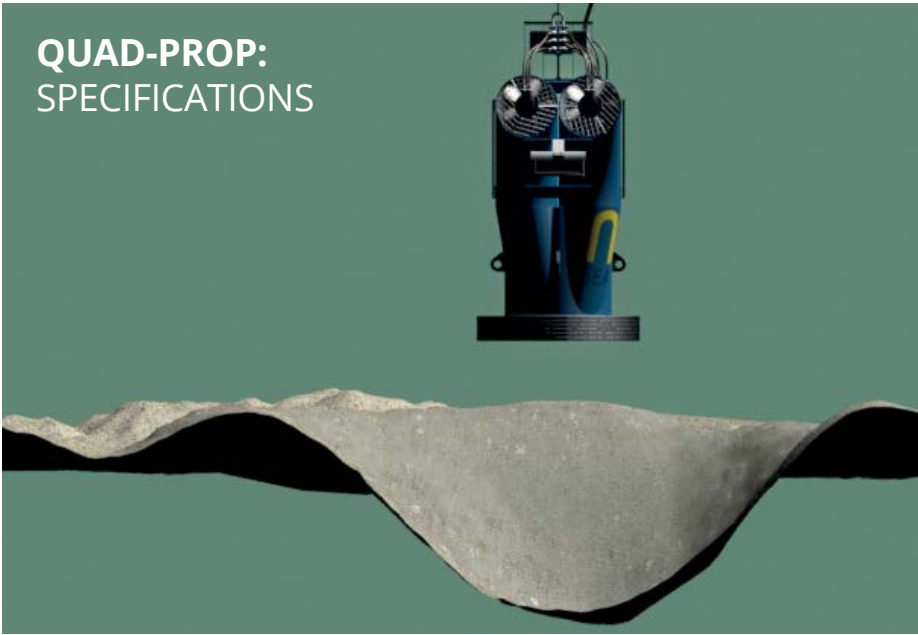
OPERATING PARAMETERS

Operating Depth	3-80 m
Flow Rates	0-2.3 m ³ /sec
Exit Velocity	0-4.6 m/sec
Thrust	Up to 1 ton



N-SEA: CONTROLLED FLOW EXCAVATION TOOLS

QUAD-PROP: SPECIFICATIONS



General Information

Main components of the Quad-prop are four bladed propellers contained within a stainless-steel tube.

Stability (position and movement) is assured by the opposite direction in which the blades rotate. The rotation of the propellers sucks/draws water into the topside of the Quad-prop and then water is forced out from the downside onto the seabed.

DIMENSIONS AND WEIGHT

Width	1110 mm
Width Internal	800 mm
Height	1889 mm
Depth	1330 mm
Weight in Air	3600 kg
Thrust	1.75 ton
Number of Available	1

HYDRAULIC PACK OF SYSTEM PRESSURE

Power Supply	380 VAC / 50 Hz 440 VAC / 60 Hz
Power Pack	Max. 300 Bar (with internal generator and adjustable flow/pressure)
Maximum Working Pressure	350 Bar (hydraulic)

OPERATING PARAMETERS

Operating Depth	3-80 m
Flow Rates	0-4.2 m ³ /sec
Exit Velocity	0-5.75 m/sec
Thrust	Up to 1.75 ton



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N-Sea Certificates

ISO 9001
ISO 14001
VCA
OHSAS 18001

The specifications are believed to be correct and subject to revision without prior notice. The data provided is included for general information only and should not form part of any binding agreement between N-Sea and any third party. Revised January 2020.

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