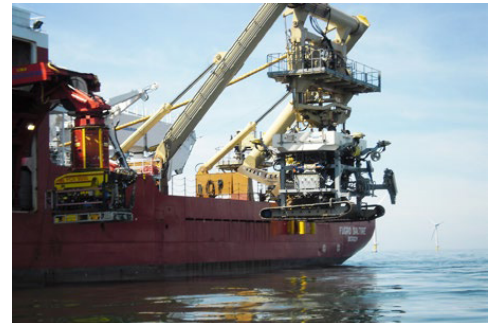


Q1400 TRENCHING SYSTEM

The Q1400 Trenching system has the capability to perform jet trenching in soils of up to 100 KPA and mechanical chain cutting of soils of up to 250 KPA. The system consists of a “common trenching module” and separate tracked “jetting and mechanical cutting skids” with a customised launch and recovery system (LARS) rated to Lloyds sea state 6.

In jet trenching mode, the Q1400 has 1100kW (1475 hp) of available power, 800 kW of this power is via variable speed drive (VSD) electric motors with direct drive water pumps. The jetting tool has twin-legged parallel jet swords. The system is designed for trenching up to 3 m in soil conditions ranging from 5 KPA to 100 KPA (using 2 m & 3 m jetting swords); and is capable of accommodating products up to 900 mm in diameter. The sophisticated jetting system also has the capability for backwashing, eduction and back filling of seabed material.

The flexibility of the Q1400 trenching system is illustrated when it is operated in the chain-cutting mode. In this mode it is configured with a 2 m x 400 mm chain cutter coupled with an instrumented cable bell mouth and depressor with a 3m minimum bend radius (MBR) and two product-loading arms. It has a dedicated HPU for the chain cutter. The system has a capability to accommodate flexible products up to 250 mm diameter.



JETTER MODE - GENERAL

Power	1,100 KW (1475 hp) 2 x 150 KW Electro / Hyd HPUs driving multiple hydraulic pumps 2 x 400 KW Variable speed electric motors directly driving mixed flow water pumps
Operating depth	1,500m
Max product diameter	900mm
Max trench depth	3.0m

JETTER MODE - DIMENSIONS

Length	7.8m
Width	6.3m with tracks
Height	5.5m
Ground clearance	1.0m
Weight in air	40Te
Weight in water	0 - 1,500Kg

JETTER MODE - SOIL STRENGTHS

Minimum soil bearing in tracked mode of 5 KPA
Capable of burial in soil strengths up 100 KPA @ 3m depth
Pitch & Roll capability of +/- 15

JETTER MODE - JETTING SYSTEM

Water supply	2 x 400 kw direct drive water pumps Maximum flow 2300 m ³ /h Variable up to 15Bar
Configuration	Twin legged jet tool mounted on double scissor linkage
Jet swords	2m & 3m
Trench depth	Variable from 0 – 2 or 3m dependent on which swords are fitted
Jetter internal	2m swords - closed 200mm to 900mm max
Dimensions	3m swords – closed 200mm to 900mm max

JETTER MODE - EDUCTOR/BAC KWASH SYSTEM

Configuration	Twin legged Eductor / Backwash system with parallel function for constant angle back wash
Trench depth	Variable from 0 – 3.0m
Trench width	200mm – 900mm
Dredge	1 x 200kw jet pump provides variable water supply to venture type pump @ 5 Bar

CHAIN CUTTER MODE - GENERAL

Power	450 KW (600 hp) 3 x 150 KW Electro / Hyd HPU's driving multiple hydraulic pumps
Operating depth	1,500m
Max product diameter	250mm
Max trench depth	2.0m x 400mm

CHAIN CUTTER MODE - DIMENSIONS

Length	8.0m
Width	6.3m with tracks
Height	5.5m
Ground clearance	0.5m
Weight in air	40Te
Weight in water	10 - 15Te

CHAIN CUTTER MODE - SOIL STRENGTHS

Minimum soil bearing in cutter mode of 12 KPA
Capable of burial in soil strengths up to 250 KPA @ 2m depth
Pitch & Roll capability of +/- 15 degrees

CHAIN CUTTER MODE - CUTTER SYSTEM

Configuration	2m long x 400mm wide chain cutter driven by Hydraulic motor with product MBR of 3.0m and bespoke depressor system
Power system	175 KW HPU (150 KW for Chain Cutter - 25 KW for Spoil Removal)
Cable loading arms	2 x loading arms with 2000 kg lift capacity fully instrumented
Emergency product unload	Hot Stab to ROV Intervention panel
Spoil removal	Centrifugal dredge pump water flow 500m ³ /hr

LAUNCH & RECOVERY SYSTEM

Wide angle A frame c/w teleleg	40 Te SWL up to Sea State 6 Umbilical Snatch Limiter Submersible Cursor & Latching system Centralised A Frame & LARS control Hut
Umbilical winch	c/w 1,800m of umbilical
2.5Te HIAB	For maintenance assistance
LARS HPU	Open Frame 460 KW HPU