

A unique and purpose built vehicle to lay and bury interconnection array cables as part of MPI Offshore's single source solution for off-shore wind turbine installation.



The Remotely Operated Vehicle LBT1 (ROV) is a powerful, rough terrain tracklayer capable of operating in up to 50 metres of water. It can be launched from the Resolution, lay and bury the cables simultaneously with other construction operations.

The ROV can carry up to 1,000 metres (3,330 feet) of 110/120 mm diameter cable on a subsea reel that is hydraulically driven, enabling it to payout and pick up while on the sea bed. This eliminates the need for cable catenary control from the installation vessel during lay and burial operations.

Its combination of chain cutter and jetting tool either work together or separately, depending on the conditions, to lay and bury cable at one pass, with a typical speed of 200m/hr (650ft/hr) even on firm seabeds. Despite weighing almost 60 tonnes (132,000 lbs) when fully-laden with cable, its wide tracks also support and propel it on the weakest soils.

The ROV is purpose built for short inter turbine cable runs. It can reverse within a few metres of the start j-tube to commence the cable burial. At the second end, the cable is laid off appropriate to the j-tube design.

The ROV can be operated from vessels other than the Resolution and is available for hire as a stand-alone vehicle. It provides, in particular, the optimum solution for the rapid laying of short lengths of cable in applications involving tight turns that a plough could not achieve.

General Information

Maximum Operating Depth	50m
Vehicle Length (less jet tool)	7.5m
Vehicle Maximum Length (3.0m jet tool fitted)	11.5m
Vehicle Width	7.5m
Vehicle Height (to docking point)	7.75m
Weight in Air (without reel fitted)	35Te
Weight in Air (with reel & 20Te cable)	60Te
Track Type	Plastic track plates on a single steel chain
Ground Pressure	25-30kPa
Speed Range (no burial)	0-2,000m/hr
Speed Range (trenching)	50-1,000m/hr
Vehicle Power	900kW Total - 1 x 300kW-4 pole underwater electro-hydraulic unit - 2 x 300kW-4 pole underwater direct electric drive water pumps
Tractive Effort	20Te under good seabed conditions
Structure	Monocoque chassis constructed from high strength steel
Electronics Pod	One atmosphere steel pressure vessel 50.0m depth

Jet Tool Burial Specification

Configuration	Twin-legged device straddling the cable
Power	2 x 300kW, 3.3kV, 60Hz. Submersible water-filled motors
Pumps	2 x Pleuger KN357 pumps
Soil Strength (maximum)	100kPa shear strength
Trench Depth Options	1.6m and 3.0m
Cable Path Width	150mm
Cable Bend Radius	1.6m during lay operations

Chain Cutter Specification

Configuration	Chain type mechanical cutter, mounted under the centre of the vehicle
Power	150kW
Soil Strength	Up to 400kPa shear strength. Some higher strength soils are cuttable
Trench Depth	1.6m
Cutting Picks	Rock picks, 25mm dia tungsten carbide point attack tools for hard, abrasive ground
Hydraulic Supply	From vehicle hydraulic system
Control Functions	Tool depth and cutter speed

Vehicle Cable Reel Specification

Structure	High strength steel
Core Diameter	3.2m
Width	1.7m
Cable Capacity	1,000m (@ cable dia 110mm to 120mm)
Weight	Empty - 4,000kg. Loaded - 25,000kg
Reel Drive	Hydraulic, from the vehicle hydraulic system

Surveillance Specification

Cameras	A total of 5 cameras, combining colour and mono output
Sonar	Kongsberg MS1000 front and rear mounted
Cable Tracking	Interface to TSS cable tracking equipment
GPS Position	CSI wireless DGPS Max; Frequency - 1.575GHz; Horizontal accuracy - < 1.2m