

**TOP NOTCH
DEEP-SEA
EQUIPMENT**



VYL1000 ROV

Technical Specifications

Technical Specifications

1.Product Overview

The VYL1000 Cable Laying Robot is the latest generation of ROV-type subsea trencher independently developed by our company. It is specially designed for the burial of subsea cables, umbilical cables and small-diameter pipelines. Its powerful trenching capability combined with a high-power system enables it to adapt to various soil conditions and subsea environments. It can complete operational tasks quickly and accurately, providing strong support for the smooth implementation of subsea projects. At present, this robot has been widely used in deep-sea construction operations such as the burial of subsea oil and gas pipelines, power and telecommunication cables, as well as subsea cable maintenance.



Fig. 1:VYL1000 Axonometric Drawing

2. Technical parameters

2.1 ROV System

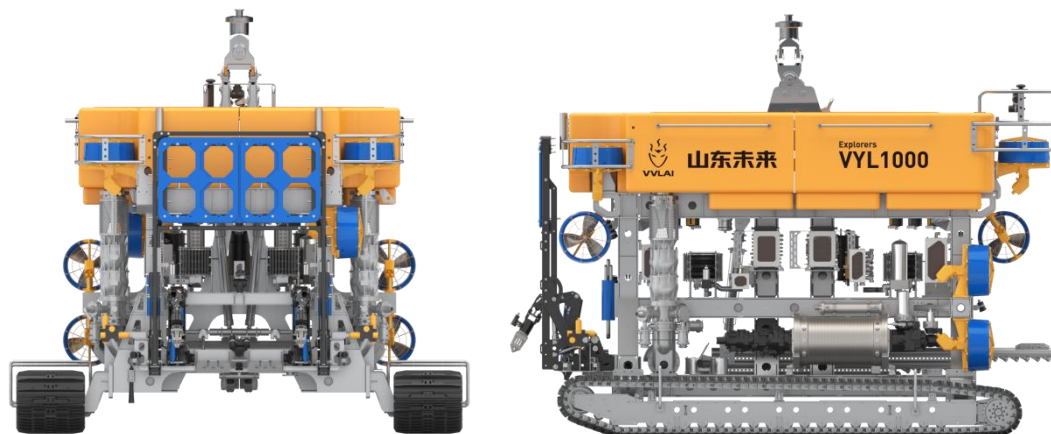


Fig.2: VYL1000 Side View / Front View

ROV System	
Basic parameter	
Power	1100Hp/410kWx2
Power supply voltage	6000VAC
Dimensions (L×W×H)	6300 ×5370 ×3800mm (including cable pressing mechanism)
Weight	23t (in air) / 2.5t (in water)
Hydraulic Oil	Hydraulic oil No. 32 (can be replaced with No. 22 depending on environment)
Depth rating	2000msw
Speed	Maximum 2.2km/h(depends on the seabed condition)
Performance	
Trenching Width	100-600mm
Trenching Depth	3m

ROV System	
Water Pump Flow Rate	1000m ³ /h x2 (at 8bar pressure) low-pressure pump unit 500m ³ /h x2 (at 15bar pressure) - high-pressure pump unit
Water Pump Pressure	8bar (at 1000m ³ /h x2 flow rate) - low-pressure pump unit 15bar (at 500m ³ /h x2 flow rate) - high-pressure pump unit
Thruster	10 x THR.Y500
Bollard Pull Forward/aft	≥3.5t
Bollard Pull Lateral	≥1.5t
Bollard Pull Vertical	≥2.8t
Environmental technical indicators	-10~45℃ operation、-20~50℃ storage
Mechanical interface	
7-axis manipulator (right)	On-off control (analog optional); arm span 2m, maximum lifting capacity 240kg, maximum clamping force 400kg.
7-axis manipulator (left)	On-off control (analog optional); arm span 2m, maximum lifting capacity 240kg, maximum clamping force 400kg.
Jetting at the front	DN40 jet nozzle
Slipper (Optional)	Equal width Slipper×2
Armored cable cutter (Optional)	Cable cutting: diameter armored cable from 38mm to 100mm Working pressure: 20mpa (external booster)
Flexible cable cutter (Optional)	Cable cutting: diameter flexible cable from 38mm to 100mm Working pressure: 20mpa
Electrical interface	
Sensor interface	Sensor interfaces can be customized (Including sensors such as INS, Doppler log, sonar, ultra-short baseline (USBL), depth gauge, altimeter, etc.)
PTZ	Three 2-axis Pan&Tilt, with horizontal adjustment ±60°, vertical adjustment ±60°.
Cameras	Equipped with 9 camera input interfaces (connectors) Connector type: VVLJXT Series.

ROV System	
Light	11 lights, with brightness adjustment. Maximum total power 1500 W. Connector type: VVLJXT Series
Other configurations	
Tracking System	1 set (optional)
USBL	1 set (optional)
Flowmeter	1 set(optional)
Altimeter	1 set
Depth gauge	1 set
Inertial navigation system	1 set
Obstacle avoidance sonar	1 set
Forward looking sonar	1 set

2.2 Deck Support Unit



Fig. 3:Control System



Fig. 4:Power supply system

Deck Support Unit	
Control container	
Dimensions (L×W×H)	6058mm×2438mm×2591mm
Weight	6t
System composition	The cabin, ROV control system, ROVpower supply system, refrigeration system, dehumidification system, alarm system, emergency escape system, etc.
Control system	

System composition	all the necessary elements for controlling the ROV and the PDU are integrated into the operator's console. •2 All-in-one touch screen computers •4 monitors 43 inches.
ROV control software	Chinese/English
Power supply system	
Dimensions (L×W×H)	6058mm×2438mm×2896mm
Weight	14t
System composition	Integrated independent power distribution unit (PDU), which includes circuit breakers, contactors, overload relays and transformers, terminals and isolation points for all high voltage connections.
Spare parts container	
Dimensions (L×W×H)	6058mm×2438mm×2591mm
System composition	spare parts racks, crane, air conditioner, emergency and escape system.
Workshop container	
Dimensions (L×W×H)	6058mm×2438mm×2591mm
System composition	workbench, air conditioner, emergency and escape system.

2.3 Launch and Recover System



Fig. 5:LARS System



Fig. 6:Cable Winch



Fig. 6:Hydraulic power unit



Fig. 7:LARS Control Room

LARS	
A-Frame	
Safe working load	300kN
Horizontal distance of A frame	9.7m

Clear Width of A frame	7.3m
Amplitude change time (average)	~150s
Swing angle	100°outboard, 40°inboard
Extension distance of Swing stopper	2.3m
Rotation angle of Swing stopper	270°
Cable winch	
Safe working load	Outer layer 30t/Inner layer 42t
Cable retracting and Releasing speed	30t@20m/min
Cable length	1000m
Operating Sea State	Suitable for operation in Sea State 5, emergency recovery in Sea State 6
Hydraulic power unit	
HPU Power	2×200kW
System pressure	260L/min x2
System pressure	23Mpa
Hydraulic oil type	L-HM46 (can be replaced with No.22 depending on the environment)
Weight	5000kg (without hydraulic oil)

3.Photo



Figure: Explorers VYL1000 Trencher actual photo



Provide World-class
Integrated Solutions for Deep-sea Equipment

山东未来机器人股份有限公司
SHANDONG FUTURE ROBOT CO.,LTD

Add: No.52,Chuangye Rd,Hi-tech Zone,Weihai,China
Tel: 0631-5326187 Mob: 13082680120 Fax: 0631-5326187
Email: robot2@vvlai.com www.vvlai.cn www.vvlai.com



WeChat



WeChat Channels