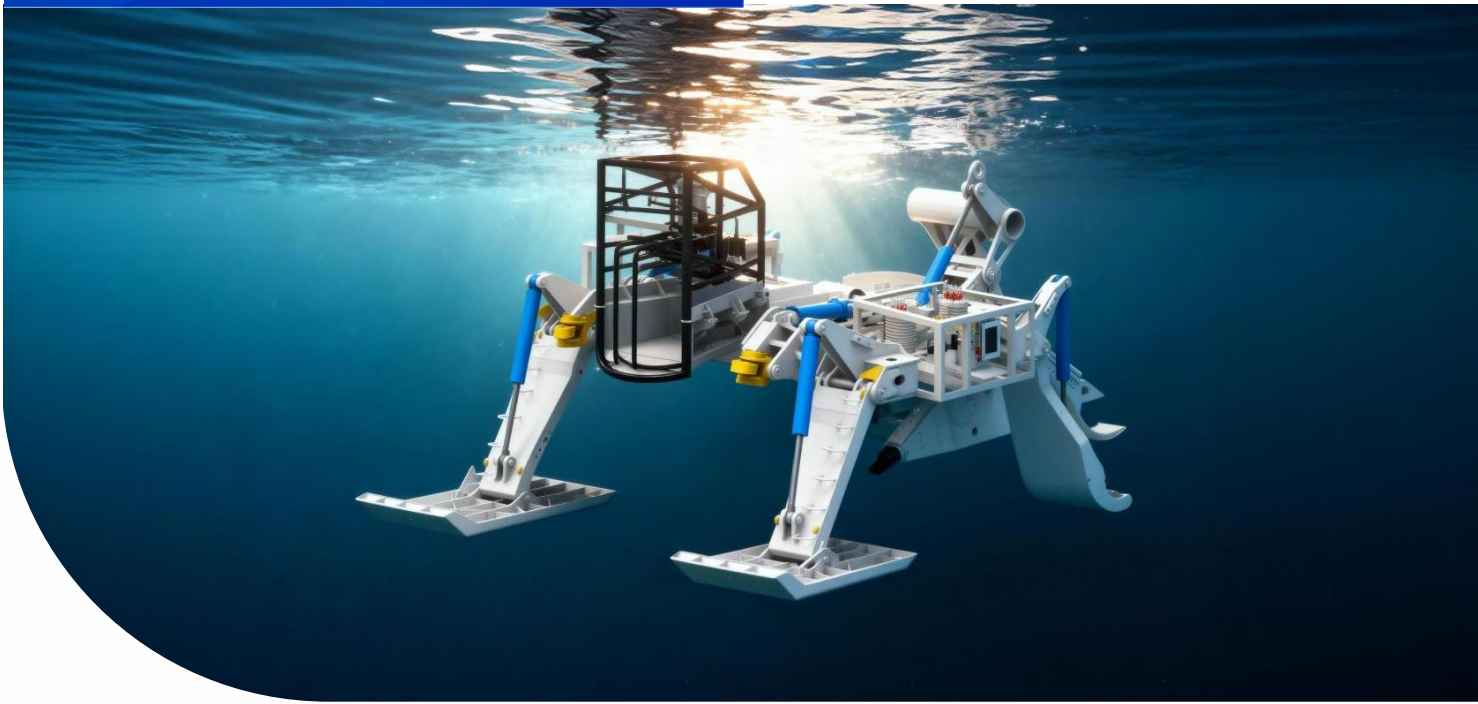


TOP NOTCH DEEP-SEA EQUIPMENT



VCP60 Towed Trenching Plow

Technical Specifications

Technical Specifications

1.Product Overview

The VCP60 Towed Trench Plough is a key burial equipment developed by our company for the marine optical cable/electric cable laying field. It mainly relies on the traction of the mother ship to complete trench excavation in designated areas and the burial of optical cables/electric cables.

The most prominent feature of the VCP60 Towed Trench Plough is that it integrates two core processes: "trench excavation" and "optical cable/electric cable laying". It breaks the traditional step-by-step construction mode of "first laying the optical cable/electric cable by a cable-laying vessel, then excavating and burying by a trencher". Driven by the towing mother ship, the trench plough can complete the entire process in one go without the coordination of multiple devices. Especially in long-distance optical/cable laying projects, it can significantly shorten the construction cycle and greatly improve operational efficiency.

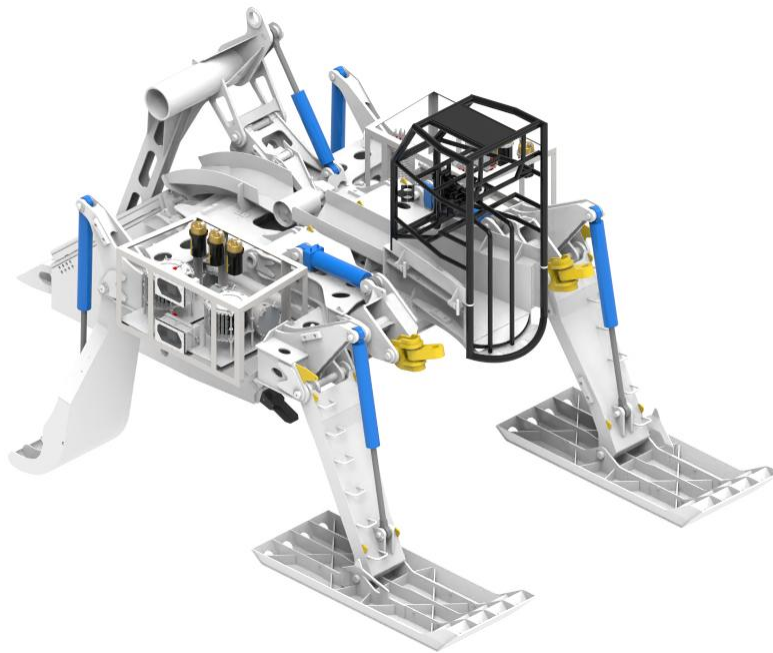


Fig1:VCP60 Towed Trenching Plow

2. Technical Parameters

2.1 Robot System

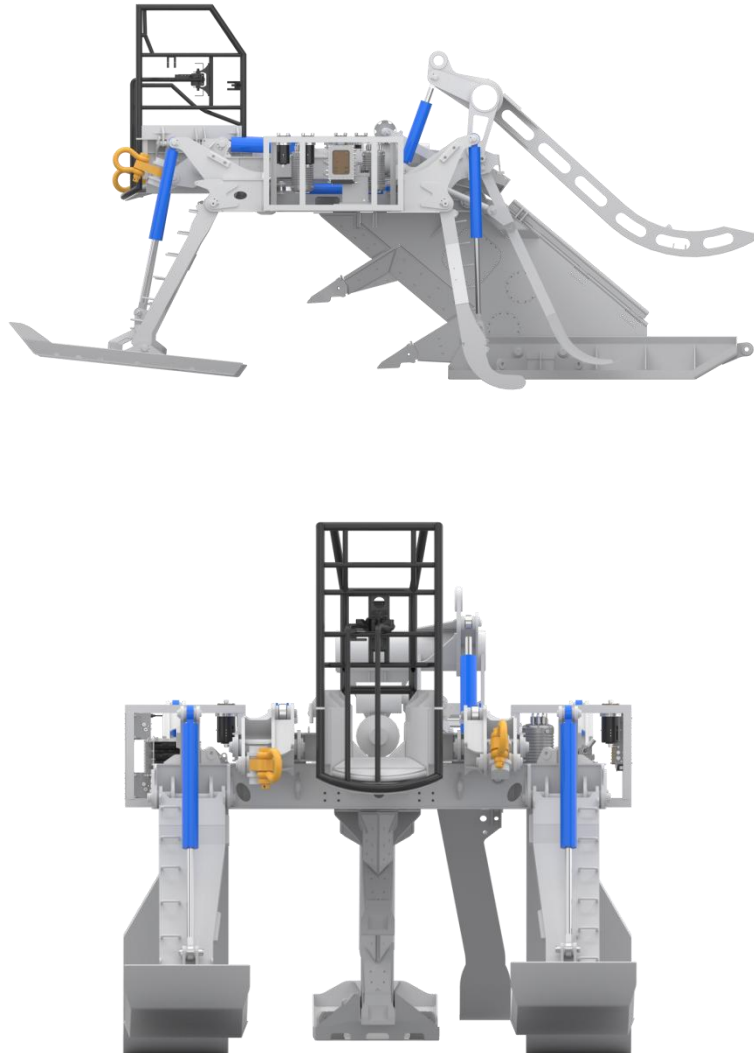


Fig.2:VCP60 Side View / Front View

Robot System	
Basic Parameters	
Total power	45kW/60hp
Supply voltage	3000VAC 50Hz/60Hz

Dimensions (L x W x H)	9m×4.5m×4.8m (Including Cable Pressing Mechanism)
Weight in air	22t
Hydraulic oil	Hydraulic Oil No. 32 (No. 22 can be replaced according to the environment)
Depth rating	1000msw
Cable burial speed	Maximum 2 m/s (depending on seabed conditions)
Robot Performance	
Submarine cable burial diameter	20-160mm (maximum repeater diameter: 400mm), minimum cable bending radius: 1.5m
Burial depth	0-1.2m/1.5m (Variable)
Working soil type	Sand, silt, clay, weathered rock, etc.
Steering angle	Steering Angle: $\pm 15^{\circ}$
Maximum towing load	Maximum Bearing Capacity of Towing Mechanism: 50t (Built-in tension sensor can provide real-time feedback of towing force during towing and traveling)
Traction angle	0-30(Standard Range)A larger traction angle is typically suitable for operations in shallow water environments. In soft soil with low traction force, a larger traction angle can only be adopted if the front part of the equipment is not lifted off the seabed.
Cable entry method	Lateral Cable Entry
Environmental technical indicators	Operating Temperature: -10~45℃ Storage Temperature: -20~50℃
Main Carrying Components	
Forward-Looking sonar	1 Set
Obstacle-Avoidance sonar	1 Set

Altimeter	1 Set
Depth gauge	1 Set
Fiber optic gyroscope	1 Set
Gimbal	1 Set
Light	5 Set
Camera	5 Set
Acoustic positioning	Reserved Installation Interface for Acoustic Positioning

2.2 Control system

Control system	
Control and High-Voltage Power Supply Container	
Dimensions (L×W×H)	6.1m*2.45m*2.9m
Weight	8t
Equipment configuration	Communication Links: Fiber optic switches, etc. Control Links: Touch screens and their hosts, display screens, physical control panels, industrial computers, etc. Multimedia Links: Video recorders, monitoring displays, etc. Auxiliary Equipment: Lighting lamps, alarms, air conditioners, ventilation equipment, fire-fighting equipment, main doors, emergency escape doors Circuit Equipment: Equipment switches, emergency buttons
System composition	Two identical pilot seats, network switches, refrigeration systems, dehumidification systems, alarm systems, emergency escape systems, etc. One integrated independent power distribution cabinet, including circuit breakers, contactors, overload relays, signal transformers, as well as terminals and isolation points for all high-voltage connections.
Control System	
System composition	Two identical pilot seats, with all necessary controls for operating the ROV and PDU integrated into the console. 2 x touch controllers 4x48" video monitors The control system of the burial machine is equipped with a configuration interface that can connect video surveillance signals to the ship-wide network, allowing access from specific addresses.
Operating software	Chinese, English, and Russian can be switched.

Spare Parts Container	
Dimensions (L×W×H)	6.1m x 2.45m x 2.9m
System composition	Spare Parts Racks, Cranes, Air Conditioners, Emergency Systems, Escape Systems
Maintenance Container	
Dimensions (L×W×H)	6.1m x 2.45m x 2.9m
System composition	Operation Console, Air Conditioners, Emergency Systems, Escape Systems

2.3 Launch and Recover System

LARS SYSTEM

A Frame

Safe working load (SWL)	50t
Operating sea conditions	Lv4
Swing angle	73° outboard from the vertical; 73° inboard from the vertical
The outboard lifting point is apart from the hinge point of the gantry boom	$\geq 10.5\text{m}$
A-frame width	11.5m
Luffing time (average)	Approximately 300 seconds (depending on the HPU)
Operating temperature	-20°C-40°C

Umbilical Cable Winch

Pay-out and retrieval speed	30m/min
Cable storage capacity	2000m
Operating sea conditions	Lv4
Maximum braking force	$\geq 128\text{kN}$
Heat dissipation system	Spray cooling with a flow rate of 120L/min. The overhead spray system features a water collection pan integrated with the winch frame base, equipped with a drain outlet. The umbilical cable temperature detection system enables optimal spraying operations in the diving zone without causing thermal damage to the umbilical cable.

Steel Wire Rope Winch

Rated load	500kN
Steel wire rope diameter	52mm
Pay-out and retrieval speed	30m/min
Cable storage capacity	2000m
Operating temperature	-20°C~40°C
Hydraulic Power Unit	
System power	2 × 150kW
System pressure	250bar
Hydraulic oil type	L-HM46 (Grade 22 can be replaced according to the environment)
Supply voltage	380VAC 50Hz/60Hz

3.Photo

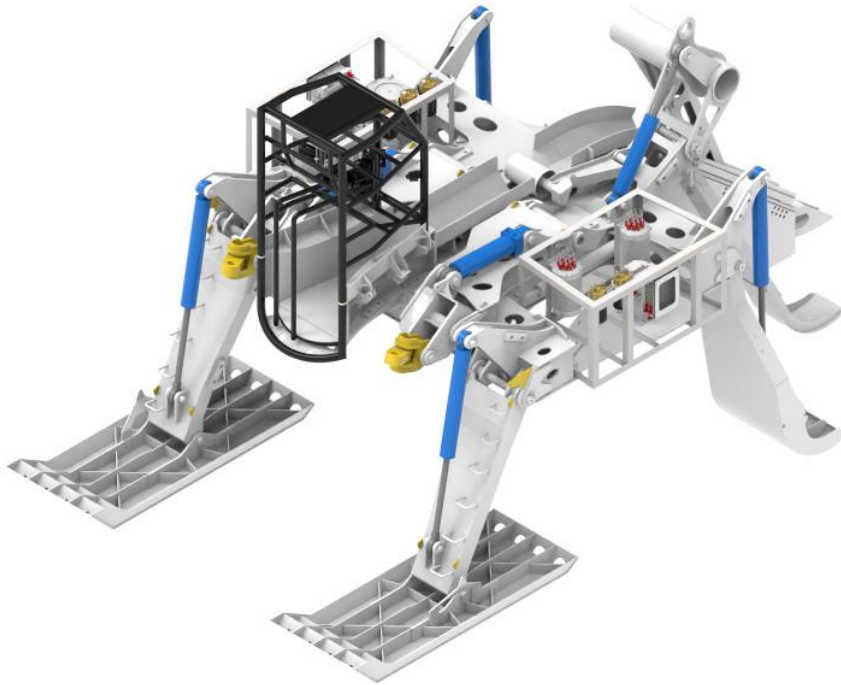


Figure: Axonometric View of VCP60 Towed Ditching Plow

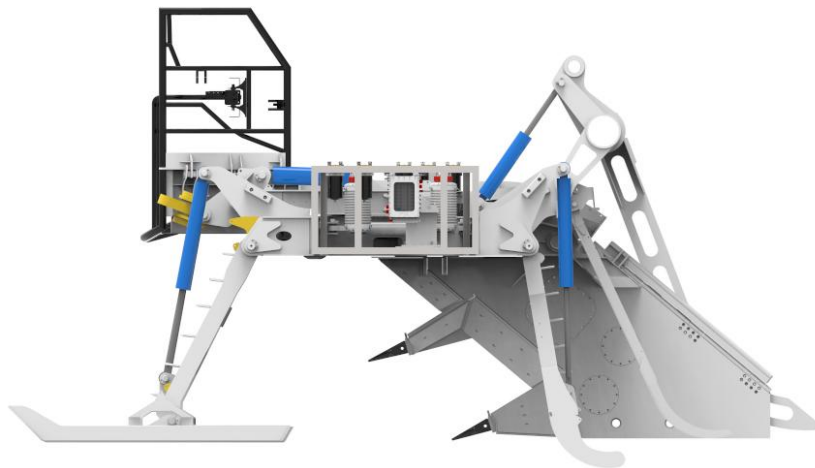


Figure: Side View of VCP60 Towed Ditching Plow



Provide World-class
Integrated Solutions for Deep-sea Equipment



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