VVLAI

PROVIDE INTEGRATED SOLUTIONS FOR DEEP-SEA EQUIPMENT

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TOP NOTCH DEEP-SEA EQUIPMENT

VVLAI



DEEP-SEA ROBOT SYSTEM&SOLUTIONS

www.vvlai.com

DEEPLY ENGAGED IN ROV
20+ Years

BUSINESS COVERAGE
20+ Countries

INTELLIGENT EQUIPMENT BASE
30000m²

OFFSHORE TESTING BASE
19000m²

COMPANY PROFILE

Shandong Future Robot Co., Ltd. , founded in 2005, is a deep-sea robot system and comprehensive solution provider. It possesses independently developed core technologies and a complete industrial chain.
Over the past two decades, Shandong Future has been deeply engaged in research & development, manufacturing and services of deep-sea and underwater equipment. It has built a comprehensive platform for sub-sea & underwater equipment and services. Covering the entire deep-sea industrial chain, featuring the full cycle of "preliminary R&D → mid-term construction → post-operation and maintenance".
Its products are applied in multiple fields: oil and gas pipeline laying and inspection, wind power cable laying and inspection, underwater engineering construction, mineral exploration and mining, underwater search and rescue, ship maintenance, scientific research and archaeology, river and ocean exploration, marine monitoring, and fishery aquaculture.







COMPANY HONOR

Over the past 20 years, the company has consolidated its technology-driven core competitiveness, and developed two nationally accredited high-tech enterprise subsidiaries. The R&D team is led by Tao Zewen (Professor-level Senior Engineer, Member of the Standardization Committee for Transport Salvage and Underwater Engineering of the Ministry of Transport), with Leng Jianxing (Former Deputy Chief Engineer of the Jiaolong Submersible) serving as strategic advisor.
The company has an R&D team of more than 100 members, including over 30 mid and senior-level engineers. The company holds more than 160 independently developed core technologies, and has established long-term industry-university-research cooperation with several core universities for underwater application.

150+ Certificate of Honor
150 - plus certificates covering scientific research, awards and platforms

160+ Patent
160 - plus invention, utility model and industrial design patents.

60+ Qualifications & Standards
40 - plus national and provincialqualifications and 20 - plus industrial standards.

10+ Software Copyright
10 software copyrights



- **IMCA Certifications**
- **ISO 9001 Quality Management System**
- **China Classification Society**



APPLICATION SCENARIO

MARINE OIL AND GAS DEVELOPMENT

SUBMARINE CABLE LAYING

UNDERWATER ENGINEERING CONSTRUCTION

Underwater Dredging ROV

Underwater Tunnel Boring Machine

Deep-sea Salvage ROV

Pipeline Grabbing and Cutting ROV

Deep Sea Mining ROV

Work Class ROV

Jet Trencher

Towed Trenching Plow

Chain Ditching Robot

Subsea Trencher

1000m

2000-3000m

3000-6000m

HULL-MOUNTABLE EQUIPMENT



X16K
Compact Work Class ROV



X22
Compact Work Class ROV



VY150
Heavy-duty Work Class ROV



VY250
Heavy-duty Work Class ROV



VCG550
Jet Trencher



VZT150
Underwater Drilling Sampling ROV



VBZ3T-80T
Deep-sea Salvage ROV



VYL600-800
Subsea Trencher



VYL1000-1200
Subsea Trencher



VYL1800
Subsea Trencher



VKG1100
Chain Ditching ROV



VCP60
Towed Trenching Plow



VT90
Towed Cable Laying ROV

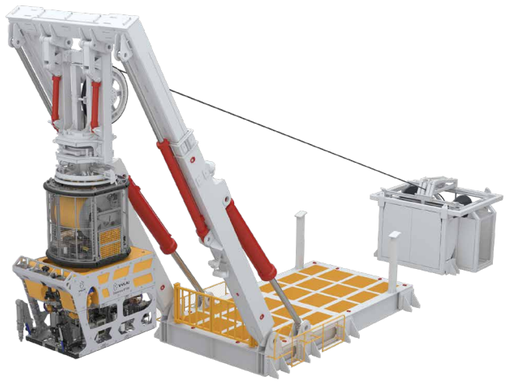


GHP800
Towed Cable Laying ROV



HEAVY-DUTY WORK-CLASS ROV

VY150-250





Basic	VY150	VY250
Power	115kW/150hp	185kW/250hp
Depth rating	3000msw (option up to 6000msw)	3000msw(option up to 6000msw)
Dimensions (L x W x H)	3250 x 1900 x 1950mm	3700 x 2200 x 2300mm
Weight in air	4.5t	5.5t
Payload	350kg (Including the weight of the manipulator and the valve chamber)	450kg (Including the weight of the manipulator and the valve chamber)
Performance		
Bollard pull		
Forward/aft	700kg	1100kg
Lateral	600kg	1050kg
Vertical	650kg	1100kg
Speed		
Forward/ Lateral	3.4kn/2.2kn	3.4kn/2.2kn
Toolkit		
Manipulator	1 x 7-axis , 1 x 5-axis	1 x 7-axis , 1 x 5-axis
Hydraulic interface	2 x 10 sets of bidirectional valves	2 x 10 sets of bidirectional valves
Auxiliary system capacity	220 bar 120 liter/min	220 bar 120 liter/min
Camera and light		
Camera interface	7 x Camera inputs	7 x Camera inputs
PTZ	2 x Dual axis PTZ	2 x Dual axis PTZ
Light	6 x Dimmable lights	8 x Dimmable lights
Control unit		
Control container	Standard container	Standard container
Control system	Integrated ROV, TMS, PDU control console	Integrated ROV,TMS, PDU control console
	Dual-touch controller	Dual-touch controller
	2 x 49 " , 6 x 22"	2 x 49 " , 6 x 22"
Power supply	380-440VAC 50/60Hz	380 - 440VAC 50/60Hz

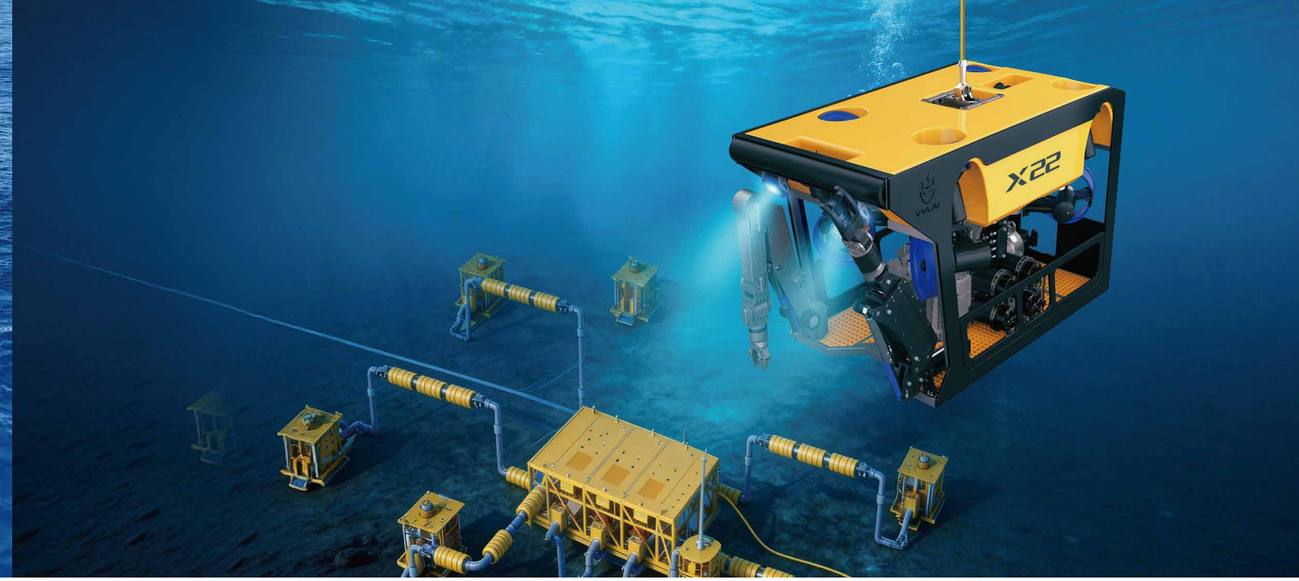


VY150



VY250





COMPACT WORK CLASS ROV

Basic	X22	X16K	X12
Dimensions (L x W x H)	2300 x 1400 x 1600mm	1600 x 1000 x 1100mm	1200 x 700 x 600mm
Depth rating	3000msw	500m	500m
Weight	1.8t	500kg	120kg
Speed	3kn	3kn	2.5kn
Camera unit	x 7	x 4	x 2



X22



X16K



X12

RAPID INSPECTION ROV

Basic	X08	X06	X04
Dimensions (L x W x H)	680 x 450 x 400mm	600 x 460 x 410mm	600 x 400 x 320mm
Depth rating	300m	200m	200m
Weight	38kg	44kg	26kg
Speed	3kn	2.5kn	2kn
Camera unit	x 2	x 1	x 1



X08



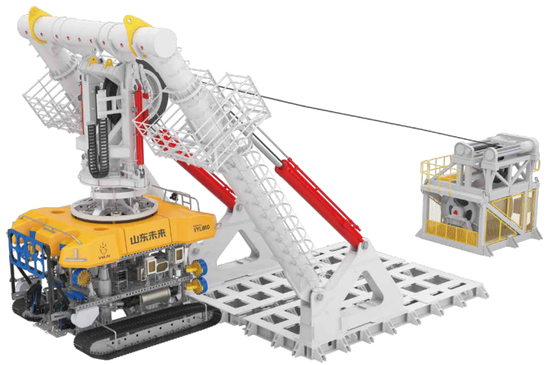
X06



X04

SUBSEA TRENCHER

VYL600-800





Basic	VYL600	VYL800
Power	600hp/220kW x 2	800hp/300kW x 2
Depth rating	2000msw (Option up to 3000msw)	2000msw (Option up to 3000msw)
Speed	0-2.2km/h	0-2.2km/h
Dimensions (L x W x H)	5580 x 4450 x 3300mm	6100 x 4700 x 3600mm
Weight in air	16.0t	17.0t
Weight in water	1.8t	2.0t
Thruster	10 x THR.Y420	10 x THR.Y420
Performance		
Jetting configuration	Dual jetter arm with forward and downward nozzles (below seabed), cable compression mechanism	Dual jetter arm with forward and downward nozzles (below seabed), cable compression mechanism
Trenching width	100-600mm	100-600mm
Trenching depth	0-3m	0-3m
Jeting power	0-1800m^3/h , 3-5bar 0-700m^3/h , 13-15bar	0-2000m^3/h, 4.5-6.5bar 0-800m^3/h , 13-15bar
Bollard Pull		
Forward/aft	⩾2t	⩾2t
Lateral	⩾0.7t	⩾0.7t
Vertical	⩾1.4t	⩾1.4t
Mechanical interface		
7-axis manipulator	x 2	x 2
Injection at the front	DN40 jet nozzle	DN40 jet nozzle
Walking mechanism		
Track	2 x Equal widthTrack	2 x Equal widthTrack
Slipper (Optional)	2 x Equal width Slipper	2 x Equal width Slipper
Cable tool kit		
Armored cable cutter (Optional)	38mm-100mm	38mm-100mm
Flexible cable cutter (Optional)	38mm-100mm	38mm-100mm



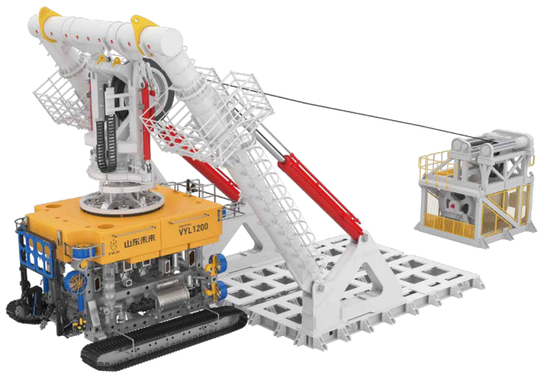
VYL600



VYL800

SUBSEA TRENCHER

VYL1000-1200





Basic	VYL1000	VYL1200
Power	1100hp/410kW x 2	1200hp/460kW x 2
Depth rating	2000msw	2000msw
Speed	0-2.2km/h	0-2.2km/h
Dimensions (L x W x H)	6300 x 5370 x 3800mm	6300 x 5370 x 3800mm
Weight in air	23.0t	23.5t
Weight in water	2.5t	2.5t
Thruster	10 x THR.Y500	10 x THR.Y500
Performance		
Jetting configuration	Two sets of main jetting systems,capable of independent operation, with a dual leg jetting system installed at the front.	Two sets of main jetting systems,capable of independent operation, with a dual leg jetting system installed at the front.
Trenching width	100- 600mm	100- 600mm
Trenching depth	0-3m	0-3m
Jeting power	0-2000m^3/h , 6-8 bar 0-1000m^3/h , 10-15bar	0-2000m^3/h , 8-10bar 0-1000m^3/h , 12-15bar
Bollard Pull		
Forward/aft	⩾3.5t	⩾3.5t
Lateral	⩾1.5t	⩾1.5t
Vertical	⩾2.8t	⩾2.8t
Mechanical interface		
7-axis manipulator	x 2	x 2
Injection at the front	DN40 jet nozzle	DN40 jet nozzle
Walking mechanism		
Track	2 x Equal widthTrack	2 x Equal widthTrack
Slipper (Optional)	2 x Equal width Slipper	2 x Equal width Slipper
Cable tool kit		
Armored cable cutter (Optional)	38mm-100mm	38mm-100mm
Flexible cable cutter (Optional)	38mm-100mm	38mm-100mm



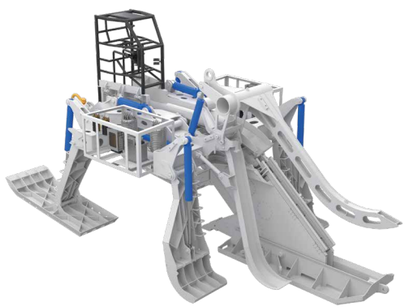
VYL1000



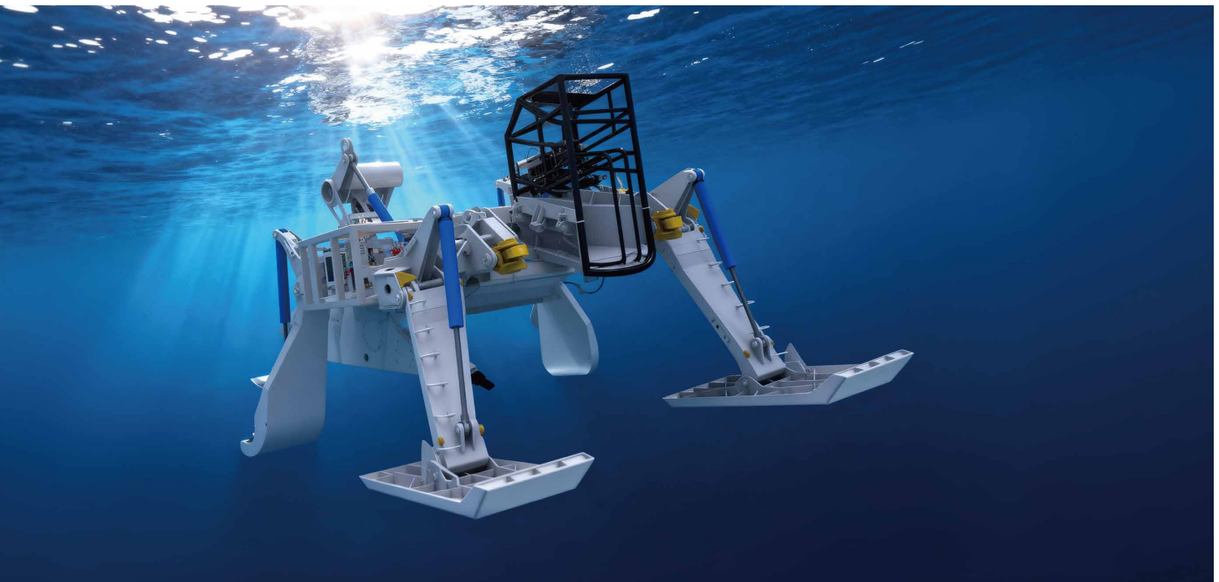
VYL1200

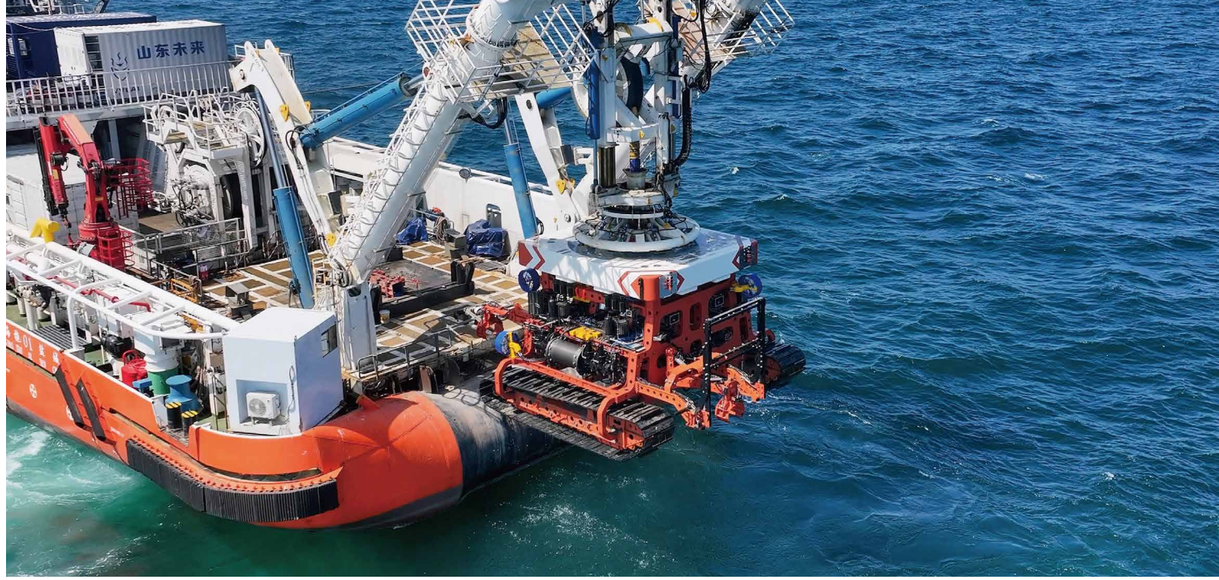
TOWED TRENCHING PLOW

VCP60



Basic	VCP60
Power	45kW/60hp
Depth rating	1000msw
Speed	0-2km/h
Dimensions (L x W x H)	9000 x 4500 x 4800mm
Weight in air	22t
Performance	
Submarine cable burial diameter	20-160mm
minimum cable bending radius	1.5m
maximum TMS diameter	400mm
Trenching depth	0-1.2m/1.5m (Variable)
Working soil type	Sand, silt, clay, weathered rock, etc.
Steering angle	±15°
Maximum towing load	50t
Traction angle	0-30°
Cable entry method	Lateral Cable Entry





CHAIN DITCHING ROV

VKG1100

Basic	VKG 1100
Power	2 x 410kW
Depth rating	1000msw
Speed	48-2114m/h
Dimensions (L x W x H)	8800 x 6500 x 4800mm
Weight in air	34t
Weight in water	18t
Thruster	4 x THR.Y500
Performance	
Trenching depth	3m
Trenching width	400mm
Maximum climbing angle	15°
Maximum cable passing diameter	300mm
Soil strength	100-400kPa
Ground pressure	Maximum 25kPa
Trenching system	
Configuration	Single vertical hydraulic drive chain
Ditching chain power	410kW
Ditching chain speed	Up to 4m/s
Ditching chain width	400mm
Ditching chain type	Heavy-duty chain with cutting teeth
Rear mud discharge pump	95kW, 900m³/h



MULTI FUNCTIONAL CABLE LAYING ROV

ZYL1000



Basic	ZYL1000
Power	800kW
Depth rating	1000msw
Dimensions (L x W x H)	7700 x 5800 x 4000mm
Weight in air	20t
Weight in water	15t
Performance	
Burial depth	4m
Trenching speed	0 - 1km/h
Burial diameter	100 - 450mm
Camera unit	x 8





JET TRENCHER

VCG550

Basic	VCG550
Power	400kW
Depth rating	2000msw
Dimensions (D x H)	ϕ2400 x 4300mm
Weight	9t
Thruster	2 x THR.Y300, 6 x THR.Y420
Performance	
Trenching depth	2.3m
Trenching width	4.2m
Trenching speed	0.2-0.4km/h
Deck Unit	
Control container	1 x 10’ container
Electrical system	1 x 10’ container, 3000V
Cable trays, Winch	Customization
Lifting equipment	13t Cantilever crane or 13t A frame
Camera Unit	
Camera	8 x 2-megapixel color camera
Light	8 x 50W LED lights
Sonar	1 x Front and 1 x rear







SHALLOW-WATER

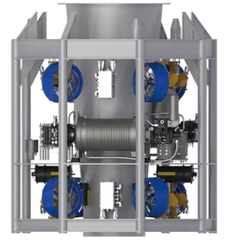
ROCK-DUMPING SYSTEM

VPS60M

Basic	VPS60M
Total Power	600kW
Rock-dumping Depth (folded)	50m
Rock-dumping depth (deployed)	60m
Dimensions (L x W x H)	45 x 9.5 x 4.5m
Weight	95t
Load Capacity	50t
Driving Mode	fully hydraulic
Performance	
Roll Motion Compensation Angle	8°
Pitch Motion Compensation Angle	5°

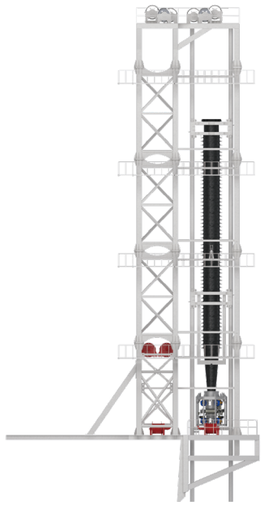
DEEP-WATER

ROCK-DUMPING SYSTEM



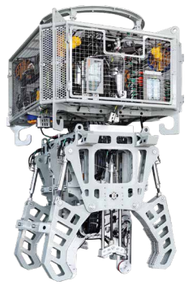
VPS230M

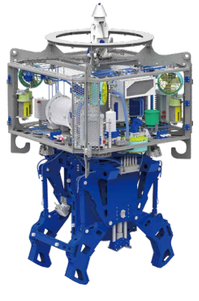
Basic	VPS230M
ROV Power	280kw x 2
HPU Power	400kw
Rock Dumping Opening	0.8m
Maximum Rock Dumping Depth	230m
Maximum Rock Dumping Rate	1000 t/h
Maximum Rock Dumping Particle Size	140mm
Dimensions (L x W x H)	4 x 5 x 37m
Weight	≈300t
Performance	
Roll Motion Compensation Angle	8°
Pitch Motion Compensation Angle	5°



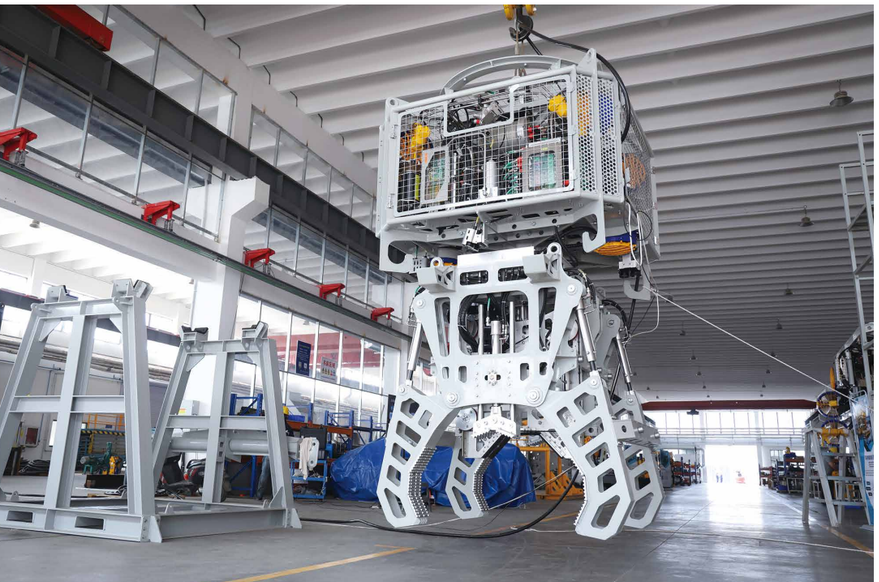
GRABBING AND CUTTING ROV

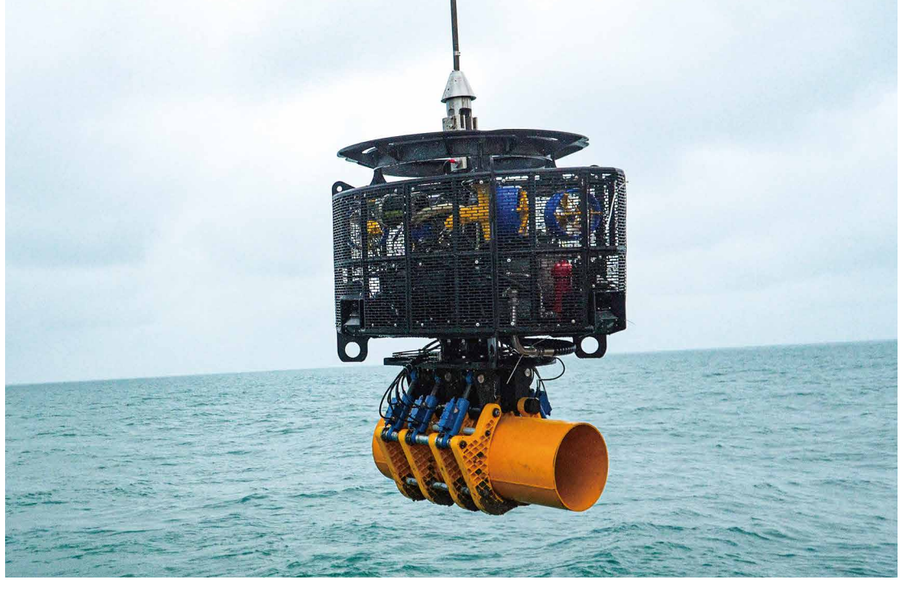
VDL150P





Basic	VDL150P-A	VDL150P-B
Power platform		
Power	120kW	120kW
Dimensions (L x W x H)	2000 x 2000 x 2300mm	2000 x 2000 x 2300mm
Weight	2t	2t
Cutting module		
Dimensions (L x W x H)	1450 x 1900 x 2100mm	960 x 1400 x 1700mm
Weight	1.5t	1.2t
Performance		
Depth rating	3000msw	3000msw
Open size	1.2m	1.2m
Cutting diameter	0-600mm	0-400mm
Lift capacity	10t	20t
Cutting type	Sea pipe	Submarine cable
Module replacement	Quick replacement	Quick replacement

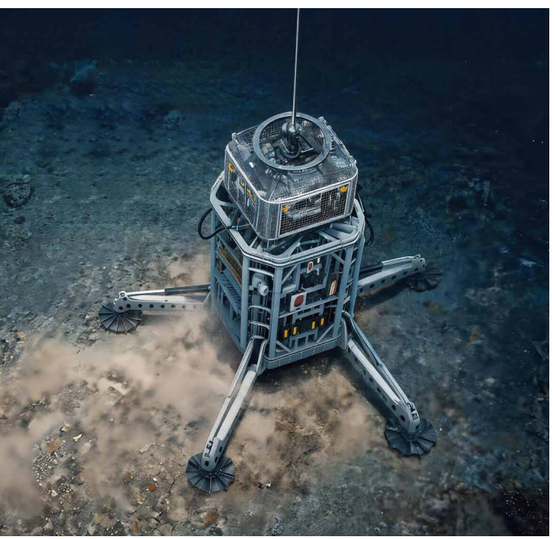




DEEP-SEA SALVAGE ROV

VBZ3T-80T

Basic	VBZ1000 3T	VBZ500 45T	VBZ500 80T
Power	55kW	115kW	200kW
Pressure	21Mpa	21Mpa	21Mpa
Dimensions (L x W x H)	2100 x 1400 x 2500mm	3200 x 2800 x 5000mm	3200 x 2800 x 5000mm
Depth rating	1000msw	500m	500m
Weight	2.7t	16t	21t
HPU	55kW3000V	115kW3000V	200kW3000V
Camera unit	5 x 200px	5 x 800px	5 x 800px
Performance			
Grasping weight	3t	45t	80t
Using sea conditions	Level 4	Level 4	Level 4
Grasp opening	0.61m	3m	3m
Rotation angle	±90°	\	\
Deck unit			
Carrying shelter	\	20 'standard container	20 'standard container
Hydraulic winch	45kW 1100m armored cable (load-bearing)	12kW 550m armored cable (non-load-bearing)	15kW 550m armored cable (non-load-bearing)
Control container	Four-screen portable console	Nine-screen console	Nine-screen console
Navigation & position	INS+Sonar	INS+Sonar	INS+Sonar

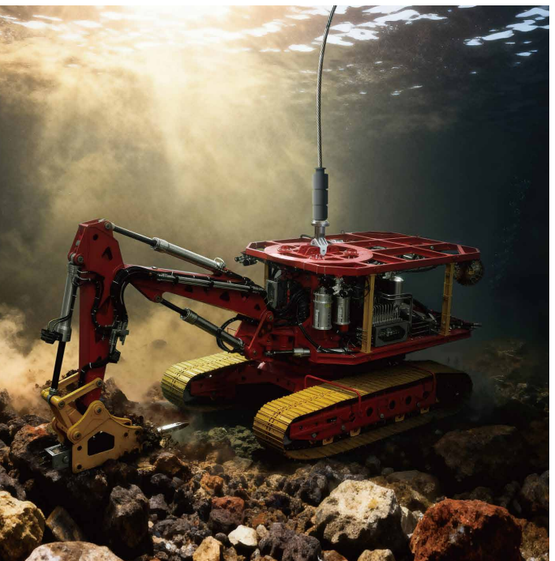


DEEP SEA DRILLING SAMPLING ROV

VZT150

Basic	VZT150
Power	150hp
Weight	⩽9t
Depth rating	2000msw
Sampling depth	32m
Sampling diameter	64mm
Sampling length	1.5m
Rotating coring power	120hp





SUBSEA EXCAVATOR

VWJ400

Basic	VWJ400
Power	280kW
Depth rating	1500msw
Dimensions (L x W x H)	8000 x 3000 x 3000mm
Weight in air	12t
Mud displacement	900m³/h
Performance	
Through Max. particle size	150mm
Max. excavation weight	600kg
Max. excavation distance	6m
Max. excavation depth	4m
Max. unloading height	3m

DEEP SEA MINING ROV

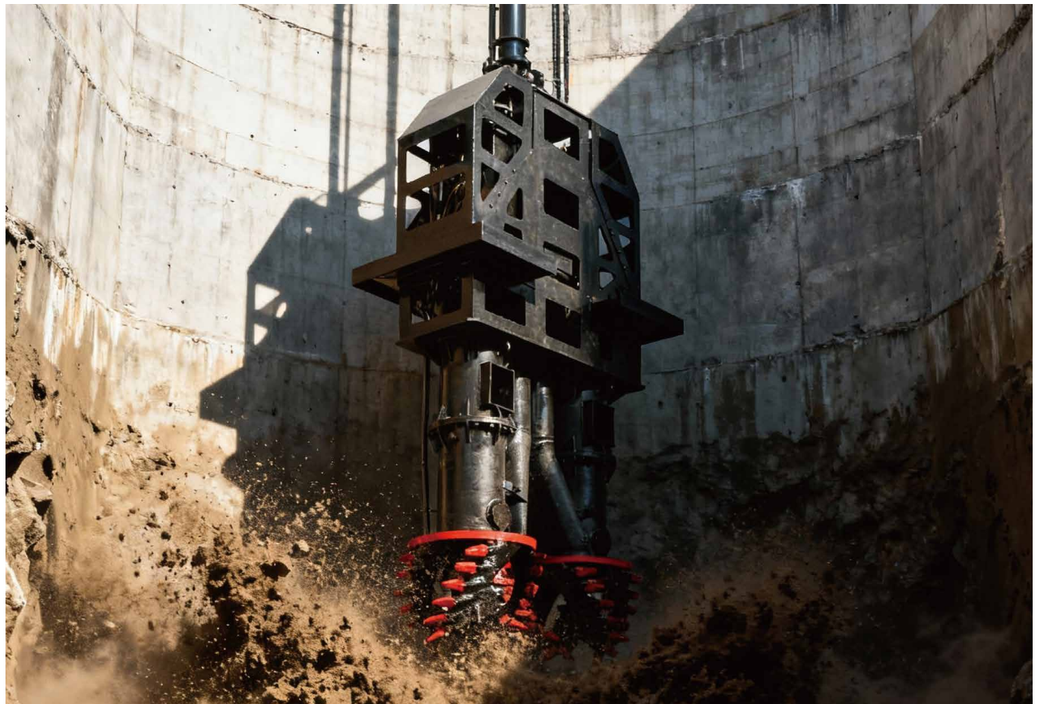
VLD600

Basic	VLD600
Dimensions (L x W x H)	6000 x 1950 x 2500mm
Weight	5t
Depth rating	600-3000msw
Speed	5-26m/min
Suction filter pump	2 x 250mm Underwater Dredge Pump
Manipulator	2-axis hydraulic Manipulator extension length 2500mm, lifting force 500kg
Optional tools	360 degree rotatory mixing manipualtor 60mm caliber jet pump

UNDERWATER TWISTED PAIR SUCTION MACHINE
SJT850



Basic	SJT850
Dimensions (L x W x H)	2730 x 1200 x 4300mm
Weight	5t
Total power	55kW (Maximum 400kW)
Voltage	380VAC
Working pressure	16Mpa
Twisted suction head specification	ϕ850mm
Twisted suction head rotation speed	31r/min
Inner diameter of slag discharge pipe	250mm



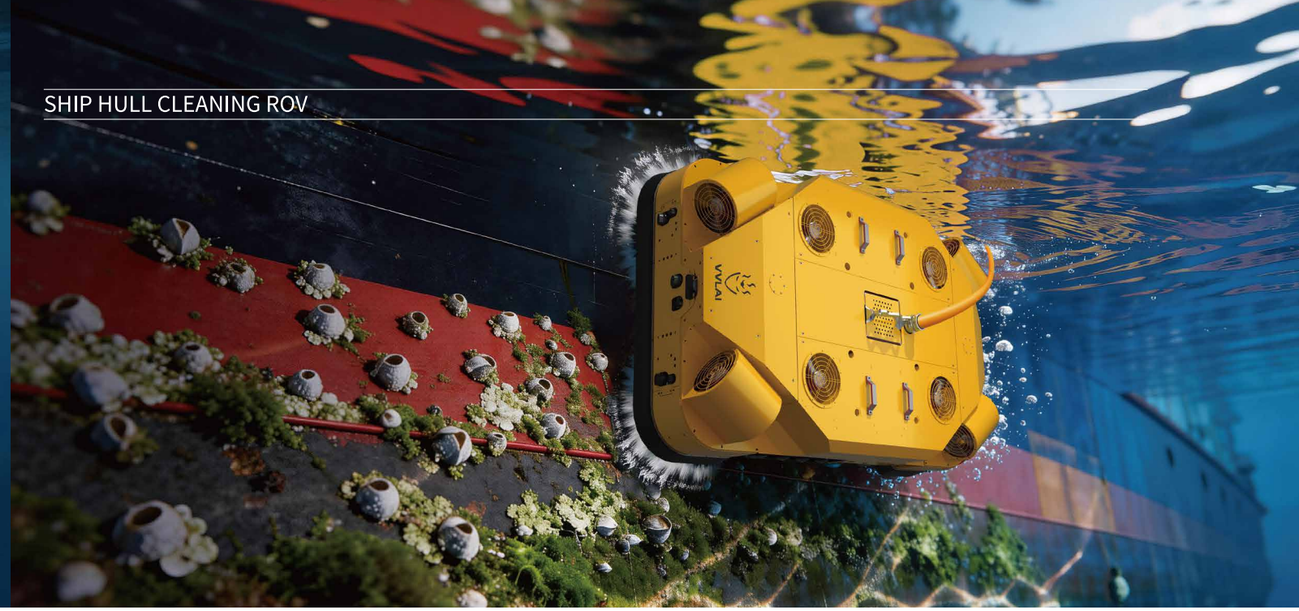
UNDERWATER TUNNEL BORING MACHINE
JX1500



Basic	JX1500
Dimensions (L x W x H)	15750 x 15750 x 4500mm
Weight	78.5t
Depth rating	50m
Camera unit	16 x 200px, 2 x 800px
Rotation angle	360°,0.7~7rpm
Extension range	2000mm
Reamer rotation	360°, 2~30rpm
Pump flow rate	360m^3/h
Pump Head	50m
Through particle size	100mm
Filter particle size	50mm
Backwash flow rate	⩾100m^3/h







SHIP HULL CLEANING ROV



CLM100

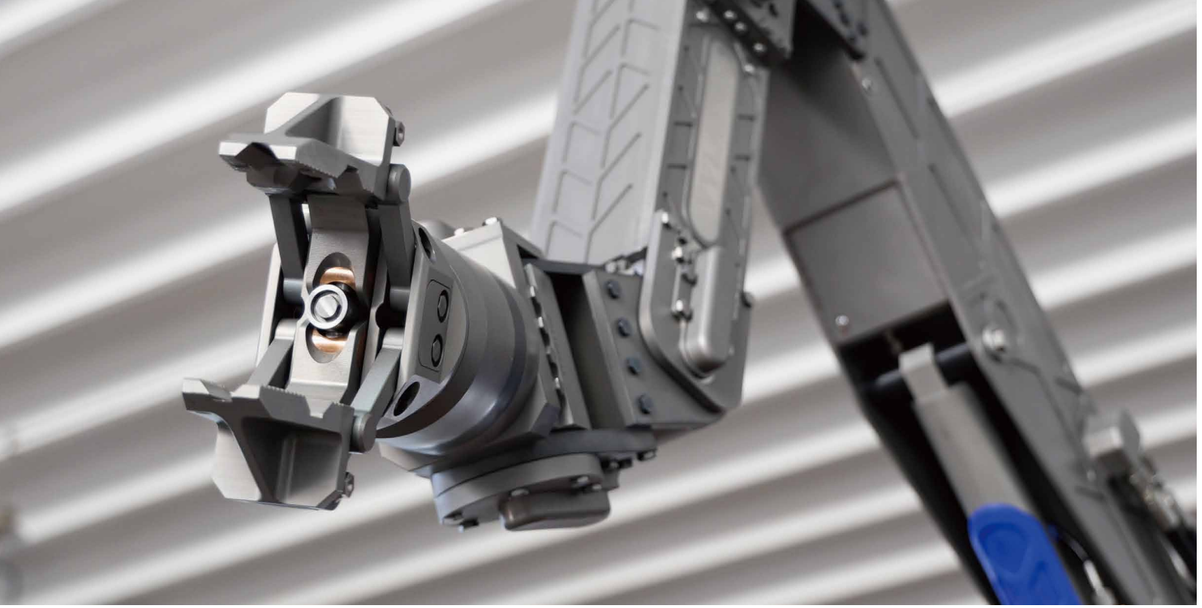


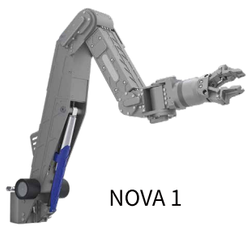
CLM200



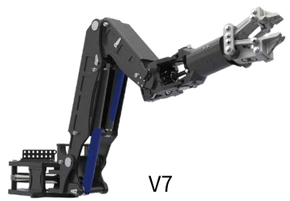
CLK300

Basic	CLM100 (BRUSH)	CLM200 (BRUSH)	CLK300 (CAVITATION)
Dimensions (L x W x H)	1500 x 1100 x 550mm	2250 x 1380 x 610mm	2250 x 1380 x 610mm
Weight	305kg	850kg	800kg
Power supply	Supply voltage: 380~440 VAC	Supply voltage: 380~440 VAC	Supply voltage: 380~440 VAC
	Power: 17kW	Power：65kW	Power：45kW
Working speed	0-15m/min	0-25m/min	0-25m/min
Cleaning efficiency	400-600m²/h	1800-2000m²/h	1400-1600m²/h
Cleaning target	Algae, barnacles and shellfish with thickness less than 50 mm	Algae, barnacles and shellfish with thickness less than 100 mm	Algae, barnacles and shellfish with thickness less than 100 mm
Depth rating	100m	100m	100m
Cameras and lights	4 x 2 megapixel color wide-angle lenses	6 x 2 megapixel color wide-angle lenses	6 x 2 megapixel color wide-angle lenses
	4 x 100W LED Lights	2 x 100W LED Lights,4x50W LED Lights	2 x 100W LED Lights,4x50W LED Lights
Thruster	8 x THR.D150	8 x THR.D210	8 x THR.D210
	With adjustable rotation speeds	With adjustable rotation speeds	With adjustable rotation speeds
Walking driven	3 x Driving wheels	Track	Track
	Adsorption:Permanent Magnets + Vertical Thrusters	Adsorption：Permanent Magnets + Vertical Thrusters	Adsorption：Permanent Magnets + Vertical Thrusters
Cleaning mechanism	3 x Brush cleaning discs	6 x Hydraulic bristle brush discs	6 x Cavitation water jet brush discs
	Rotation speed 400r/min	Rotation speed 500r/min	
Cable & Winch	Length 200m	Length 150m	Length 100m
		Electric winch	Electric winch
Crane	Lifting height 3m	Lifting height 3.4m	Lifting height 3.4m
	Arm span 3.5m	Arm span 4m	Arm span 4m
	Safe working load (SWL) 400kg	Safe working load (SWL) 1.5t	Safe working load (SWL) 1.5t





NOVA 1



V7



V5L

MANIPULATOR



Basic	Active Joystick
Control mode	Closed-loop position control Master-slave control / Non-force feedback
Number of axes	6 axes + 1 opening-closing function
Main material	Corrosion-resistant aluminum alloy
Safety protection	Joystick anti-misoperation protection Screen anti-misoperation protection Emergency stop function



NOVA 1 Active Joystick

Basic	7-AXIS MANIPULATOR NOVA 1	7-AXIS MANIPULATOR V7	5-AXIS MANIPULATOR V5L
Control mode	Closed-loop position control / Master-slave control Non-force feedback / Hydraulic drive	Open-loop control /Non-force feedback Hydraulic Drive	Open-loop control /Non-force feedback Hydraulic Drive
Number of axes	6 axes + 1 opening-closing function	6 axes + 1 opening-closing function	4 axes + 1 opening-closing function
Main Materials	Titanium alloy + stainless steel	Aluminum alloy boom + stainless steel hydraulic cylinder	Aluminum alloy boom + stainless steel hydraulic cylinder
Weight	Weight in air 100kg, in water 78kg	Weight in air 85kg, in water 70kg	Weight in air 64kg, in water 48kg
Performance			
Depth rating	3000msw（option up to 6000msw）	3000msw（option up to 6000msw）	3000msw（option up to 6000msw）
Maximum arm span	1922mm	1900mm	1372mm
Lifting capacity at full arm span	122kg	100kg	181kg
Maximum-Lift,-Nominal	454kg	240kg	270kg
Gripping force	4092N	3900N	4448N
Wrist rotation torque	170Nm	170Nm	205Nm
Wrist rotation speed	6-35rpm	6-35rpm	6-35rpm，Continuous 360°
Gripper opening	99mm(Standard pincer gripper; 3-finger and 4-finger grippers available as options)	150mm(Standard pincer gripper; 3-finger and 4-finger grippers available as options)	284mm(Standard 3-finger grippers; 4-finger grippers available as options)
Rotation Angle			
Azimuth joint	240° Swing	75° Swing	105° Swing
Shoulder joint	120° Pitch	111° Pitch	100° Pitch
Elbow joint	270° Pitch	131° Pitch	0-368mm Telescoping
Pitch joint	180° Pitch	120° Pitch	\
Swing joint	180° Swing	120° Swing	\
Wrist joint	N x 360°	N x 360°	N x 360°