

TOP NOTCH DEEP-SEA EQUIPMENT



5-axis Manipulator-V5

Technical Specifications

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1. Product Overview

1.1 Introduction

The main structure of the V5L 5-axis Manipulator is made of aluminum alloy and undergoes special anodizing treatment. It features light weight, corrosion resistance, wear resistance and strong lifting capacity, and is mainly used for the operation of heavy-duty work-class remotely operated vehicles (ROVs).



Fig. 1: V5L 5-axis manipulator

1.2 Technical Advantages of the V5L 5-axis Manipulator

- Durable and highly reliable under harsh conditions;
- The main body is made of aluminum alloy, featuring lightweight construction;
- No exposed pipelines, resistant to scratches, and suitable for complex operating environments;
- Titanium alloy grippers with high clamping force, sturdy and durable;
- Compatible with a variety of grippers for flexible matching;
- Equipped with a deep-water camera and lighting, ensuring clear visibility;
- Installation orientation is customizable.

2.Technical Specifications

2.1The main body of the manipulator

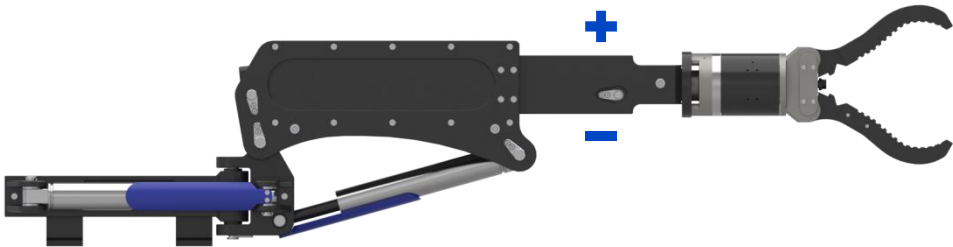


Fig. 2:Horizontal Deployment Position Diagram (Direction: Upward is Positive, Downward is Negative)

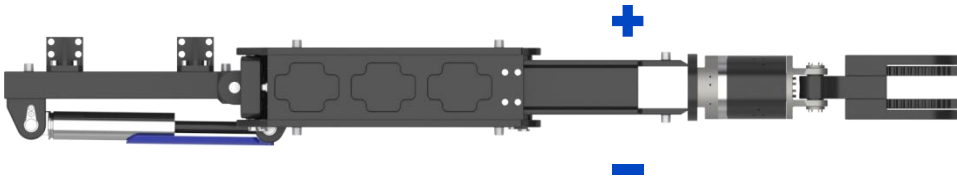


Fig. 3:Top View (Direction: Left Swing is Positive, Right Swing is Negative)

Main Technical Parameters	
Control Mode	Open-loop control/Non-force feedback/Hydraulic Drive
Number of axes	4Axes + 4 Opening-Closing Function
Communication Protocol	Ethernet (RS232 or RS485 customizable)
Main Material	Alumnium alloy boom + Stainless Steel hydraulic cylinder
System Pressure	20MPa
Weight	Weight in air 65kg,in water 48kg
Operation Parameters	
Depth Rating	3000m (6000m customizable)
Maximum Arm Span	1372mm

Lifting Capacity at Full Arm Span	181kg
Maximum-Lift, Nominal	270kg
Gripping Force	4448N
Wrist Rotation Torque	205Nm
Wrist Rotation Speed	6-35rpm, Continuous 360°
Gripper Opening	284mm (Standard 3-Finger grippers, 4-Finger Grippers Available as Options)
Rotation Angle	
Azimuth Joint	105° Swing
Shoulder Joint	100° Pitch
Elbow Joint	0-368mm Telescoping
Wrist Joint	N*360°
Remarks:When the manipulator is horizontally deployed with its maximum arm span, the angle of each joint is 0°;Left-right swing: Along the direction of the manipulator, left swing is positive;Pitch: Upward pitch is positive;The following parameters represent the mechanical limit dimensions. The normal working angle range should be reduced by approximately 5°.	

3.Manipulator Dimensions&Workspace

3.1Manipulator Dimensions

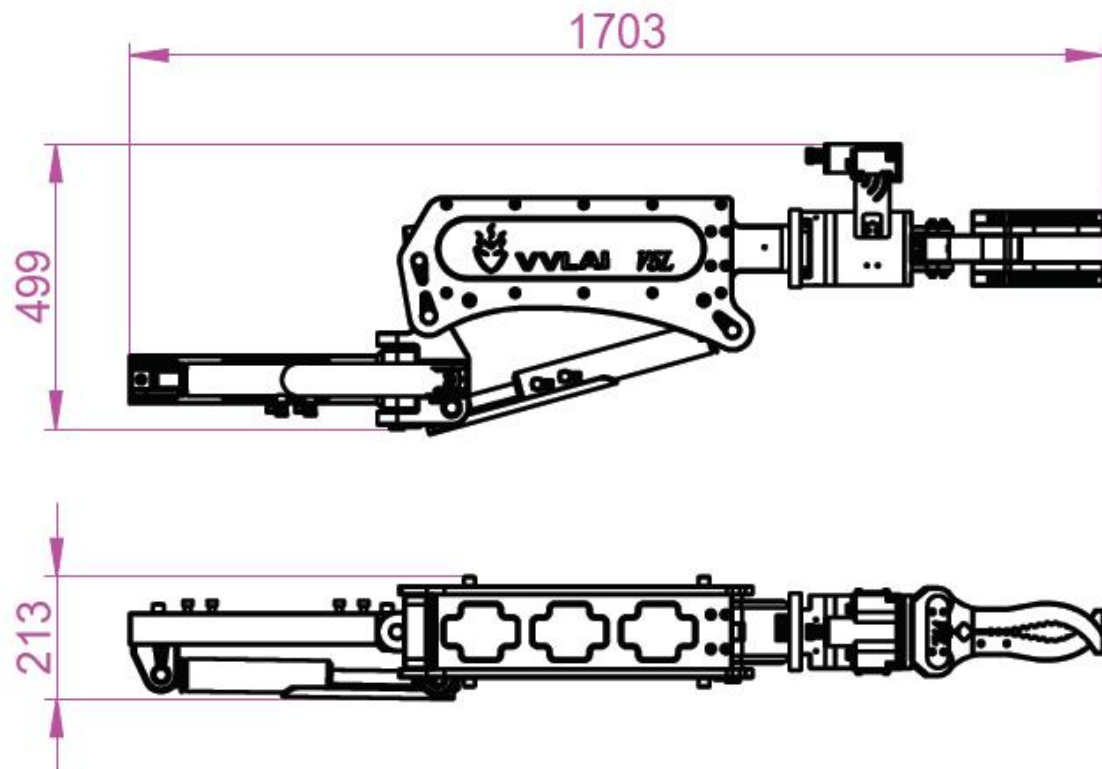


Fig.5: Dimensions (Unit: mm)

3.2 Manipulator Workspace

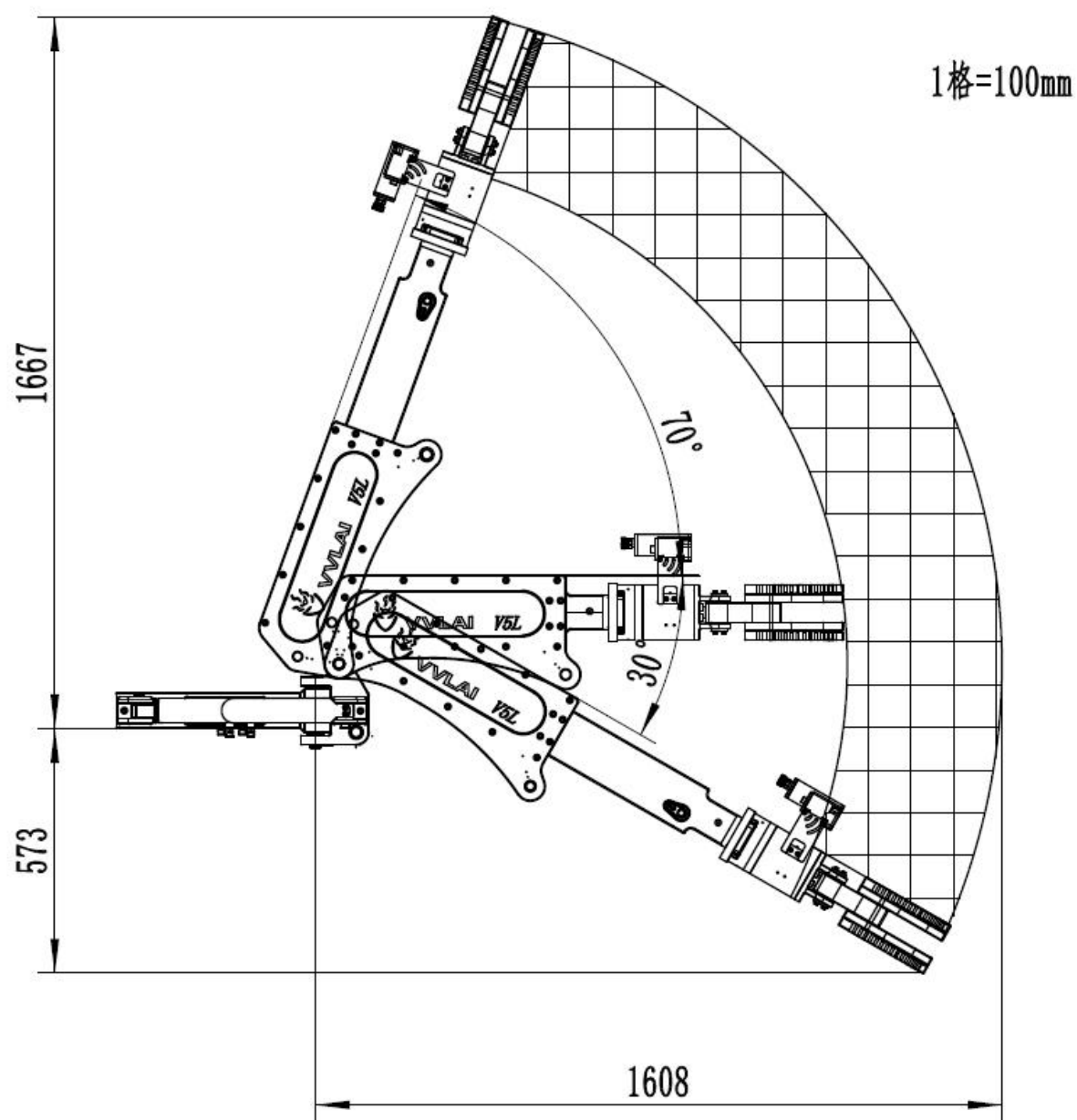
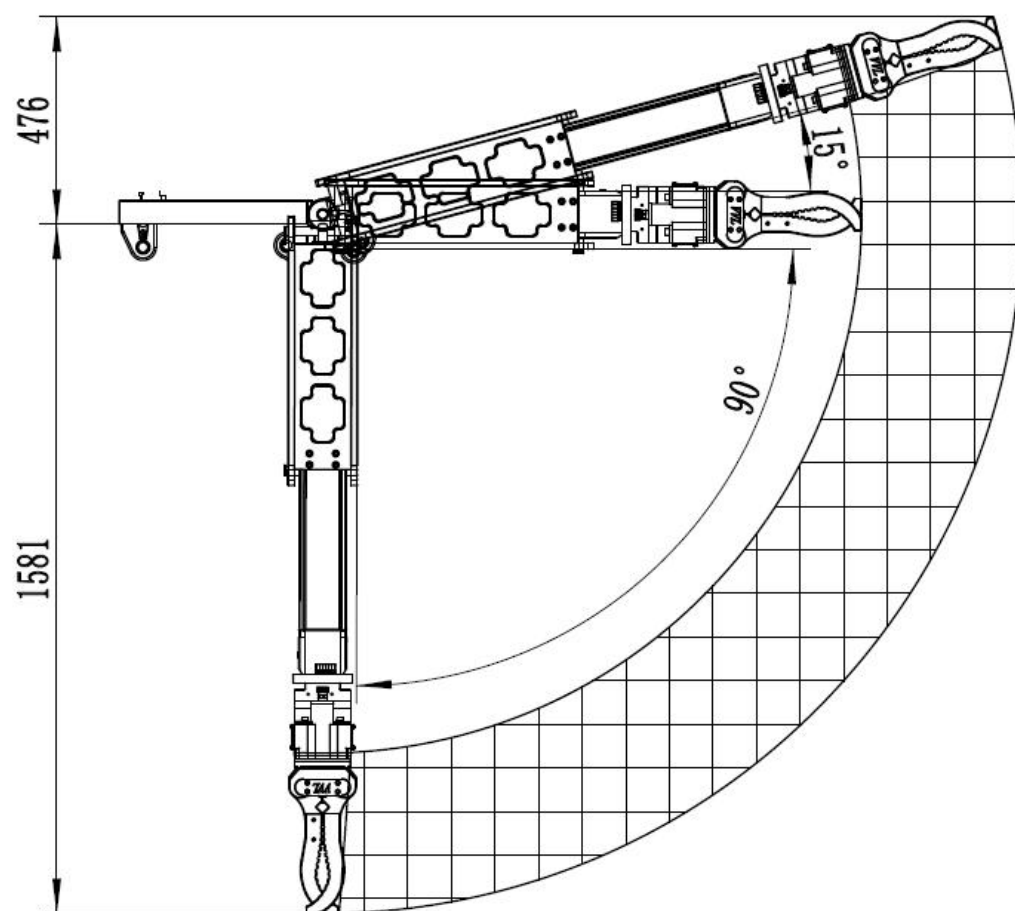


Fig. 6: Side View (Unit: mm)



1格=100mm

Fig. 7: Top View (Unit: mm)



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