



Linker Hand O6 Product Manual



Version revision record

Version	Change date	Change description
v1.0	2025.09.03	Linker Hand O6 First edition

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Safety Instructions

Before installing or using this product, please read this manual and related manuals carefully. Please be sure to read the relevant instructions for the safety matters described in the manuals.

1. It is necessary to ensure that this product is connected using the supporting or specified cables, and the product is properly fixed in accordance with regulations. Do not use damaged power cords, plugs, or loose sockets.
2. This product must comply with the installation requirements described in this manual. Using this product under conditions that exceed the specified installation requirements may shorten the product's service life and may cause serious safety issues.
3. If this product operates at high power for a long time, its temperature will rise. When the temperature is too high, please stop operation and let it stand for a period of time to cool down before using it again.
4. This equipment can only be used by trained personnel. Do not open the housing or disassemble the equipment without authorization. If the equipment malfunctions, do not repair it by yourself; please contact our after-sales service department.
5. The diagrams and photos in this manual are representative examples and may have slight differences in details from the purchased product. In addition, this manual may be appropriately revised due to product improvements, specification changes, or other reasons.

1 Product Introduction



Product appearance image

Linker Hand O6 is a high-precision bionic manipulator launched by Linker bot Company in response to market demands. It meets the market's urgent need for cost-effective dexterous hands. Adopting a design of 6 active joints + 5 passive joints, it features large grasping force, high-precision force control capability, small size and light weight, making it more suitable for scenarios such as logistics handling, industrial assembly and irregular-shaped object grasping.

1) Large Grasping Force

The self-developed high-torque servo motor module and worm gear transmission structure boast high driving efficiency. On the premise of ensuring high rigidity, they achieve greater grasping force.

2) High-Precision Control Capability

It adopts a high-precision servo rigid link transmission system and a self-developed high-precision joint module, and optimizes the force-position hybrid control algorithm. This enables a repeat positioning accuracy of $\pm 0.2\text{mm}$, ensuring that every movement is precise and reliable.

3) Small Size & Light Weight

New innovative materials are used to achieve an ultra-lightweight design for the

entire manipulator, with a weight of only 370g. The servo motor module adopts an integrated drive-control design, resulting in a compact overall structure of the manipulator that highly matches the size of a human hand, laying the foundation for flexible operation. It can be easily adapted to various systems such as collaborative robotic arms and service robots, significantly improving integration flexibility and movement efficiency.

1.1 Product Functions

1.1.1 Position Control

It can precisely control the spatial position of the entire manipulator hand and each finger joint, and stably execute preset trajectory movements. This ensures operational accuracy from overall movements to single-joint fine adjustments, meeting scenarios with high position accuracy requirements such as precision assembly and path-based operations.

1.1.2 Speed Control

The finger movement speed can be flexibly adjusted according to task requirements to accurately match different operation rhythms: the high-speed mode improves efficiency, while the low-speed mode ensures the safety of fine operations. This effectively balances operation efficiency and operational safety, making it suitable for diverse task scenarios.

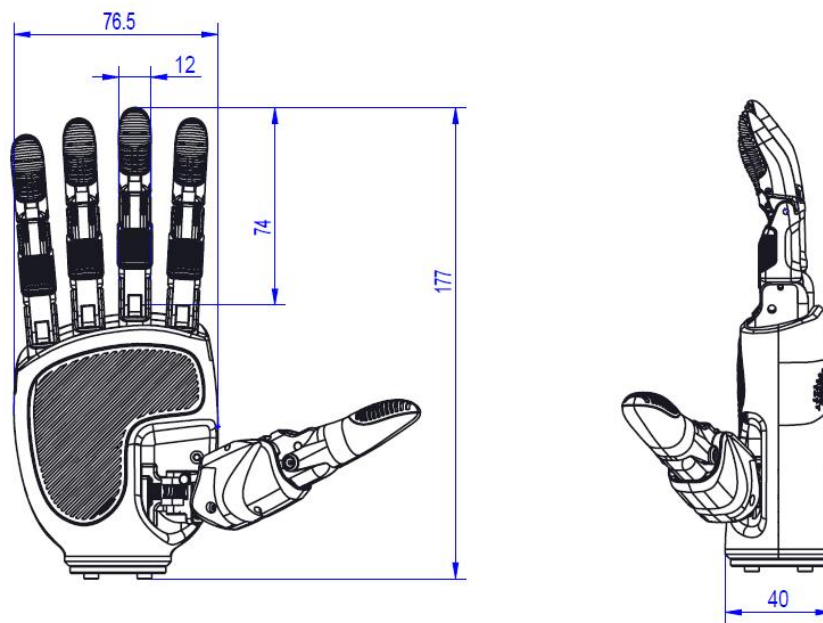
1.1.3 Optional Tactile Feedback (Force Control)

With the help of fingertip sensors, it can real-time detect and precisely control the force and torque applied by the fingers, and dynamically adjust the output force: it not only prevents damage to fragile objects due to excessive force but also avoids object slipping caused by insufficient force, providing reliable force control support for fine operations such as screw fastening and thin sheet grasping.

1.1.4 Online Upgrade

It supports online updates of the dexterous hand system firmware via a host computer, enabling continuous iteration of functional modules and optimization of core performance parameters. It is suitable for industrial scenarios and scientific research needs that require long-term upgrades and iterations, ensuring the equipment maintains a high-efficiency operation state for a long time.

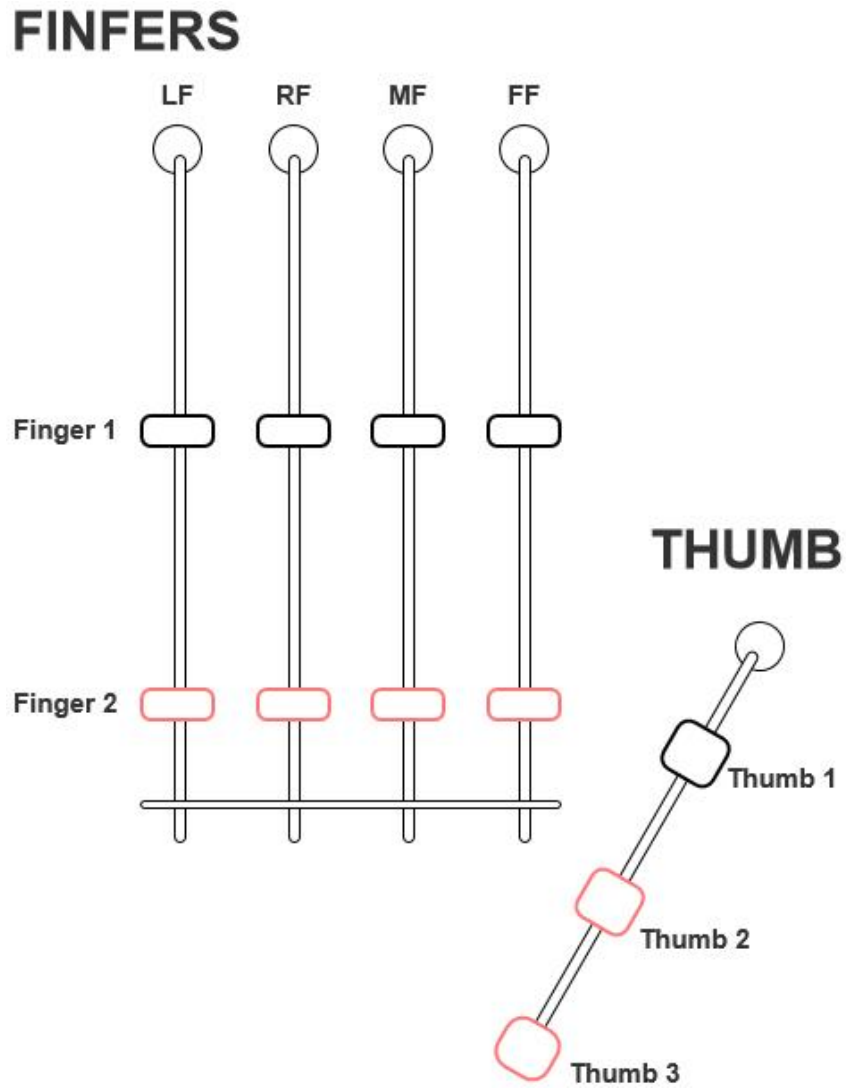
1.2 Appearance dimensions



Appearance dimensions (unit: mm)

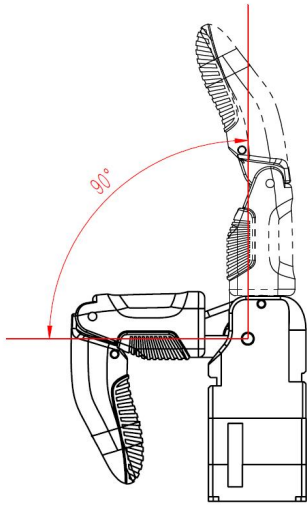
1.3 Degrees of freedom (DoF)

This product has a total of 6 degrees of freedom (DoF) and 11 joints, including 6 active joints and 5 passive joints. Details are shown in the figure below.

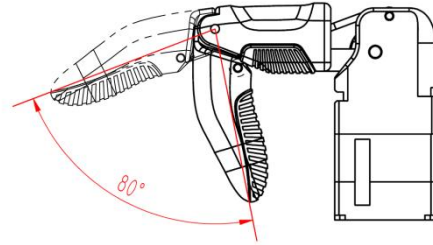


Joint degree of freedom diagram

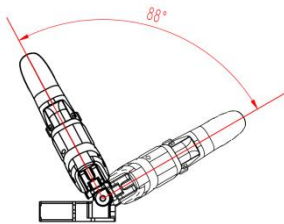
1.4 Range of motion



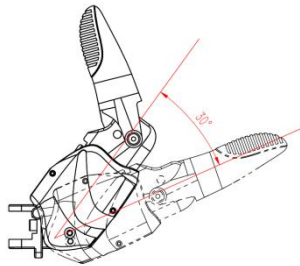
Bending Angle Diagram of Four-Finger First Joint



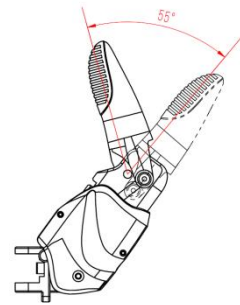
Bending Angle Diagram of Fourth Finger Second Joint



Thumb Side - sway



Thumb First Joint



Thumb Second Joint

Joints	Motion Angle(°)
LF2、RF2、MF2、FF2 (Bending)	90
LF1、RF1、MF1、FF1 (Bending)	80
THUMB1 (Bending)	55
THUMB2 (Bending)	30
THUMB3 (Side - sway)	88

Explanation: The above angles are the maximum angles designed for the structure. There will be a certain margin in actual control. Specifically, it shall be subject to the angles achieved in actual control!

1.5 Product Parameters

1.5.1 Basic Parameters

Model	Linker hand O6
Degrees of Freedom (DoF)	6
Number of Joints	11 (6 Active + 5 Passive)
Transmission Mode	Worm Gear Transmission
Control Interface	CAN/RS485
Weight	370g
Maximum Load	30kg
Operating Voltage	DC24V±10%
Repeat Positioning Accuracy	±0.2mm
Tactile Sensor	Optional

1.5.2 Force Performance Parameters

Performance Index	Specific Parameters
Maximum Thumb Tip Force	28N
Maximum Force of Four Fingers' Tips	33N
Maximum Grip Force of Five Fingers	130N

2 Installation and Commissioning

2.1 Accessory List

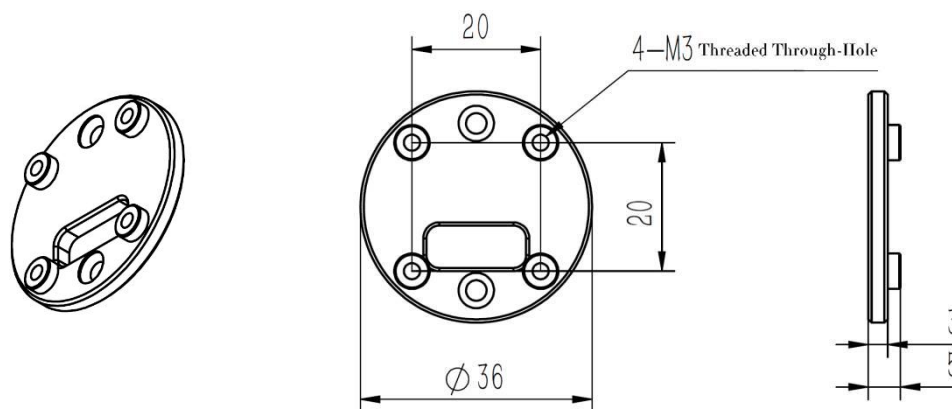
Before installing the dexterous hand, check whether all accessories are complete.

Serial No.	Name	Quantity	Picture
1	USB-to-CAN Debugging Cable	1	
2	Connector Cable XT30 (2+2)	1	
3	Power Adapter	1	
4	Power Cable	1	

2.2 Installation Instructions

2.2.1 Structural Installation Instructions

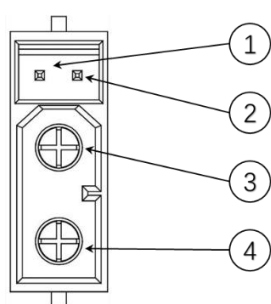
M3 screws are required for installation, and the specific length shall be adjusted according to the thickness of the fixing part. The structural diagram of the installation flange is shown below.



Flange Structural Diagram

2.2.2 Electrical Installation Instructions

The dexterous hand uses a connector of model XT30 (2+2), and its wire sequence is shown in the table below.



Wiring Order	Description
1	CAN L
2	CAN H
3	GND
4	24V

2.3 Software Debugging Introduction

2.3.1 Debugging Preparation

- 1) Connect the dexterous hand to the debugging PC using a USB-to-CAN debugging cable. After plugging the power cord into the power adapter,

insert the other end of the power cord into the power port of the USB-to-CAN debugging cable, and plug the power adapter into an AC220V power strip;

- 2) Open the file named "PEAK-System_Driver-Setup" and install the driver file step by step (drivers need to be installed for Windows systems, while no installation is required for Linux systems);

2.3.2 Host Computer Software Description

See the Host Computer Software Operation Manual for details.

3 After-Sales and Service Terms

- 1) The product is covered by a 12-month limited warranty from the date of purchase.
- 2) During the warranty period, we will provide free repair or component replacement for faults caused by manufacturing or material defects.
- 3) Exclusion Clauses: The following situations are not covered by the warranty:
 - Cosmetic wear and tear caused by normal use.
 - Damage caused by improper operation, accidents, unauthorized disassembly, or failure to follow the guidelines.
- 4) No return or exchange will be accepted for non-quality issues.
- 5) If the product malfunctions in any way, please contact the official after-sales service immediately and do not disassemble it by yourself.
- 6) Corresponding fees will be charged for repairs outside the warranty period.

