



Precision in Every Motion Excellence in Every Touch





Dexterous ROH and OYMotion

Model:ROH-A001



The extensive application of dexterous hands in industrial manufacturing has significantly enhanced production efficiency and quality, bringing numerous notable benefits.



Dexterous hands possess a high degree of precision and repeatability, capable of performing complex and accurate tasks while avoiding human error and improving the consistency and stability of production. This helps reduce the scrap rate and enhance product quality, thereby saving costs for businesses.



Dexterous hands can quickly adapt to different working scenarios and production demands, demonstrating strong flexibility. With their adaptable and programmable control systems, they can efficiently handle changes in the production line and flexibly switch tasks at various production stages, increasing the flexibility and responsiveness of the production line.



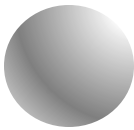
Dexterous hands can continuously work efficiently without interruption, increasing the operational efficiency and capacity of the production line. They can persistently perform various tasks without rest or fatigue, ensuring the continuity and stability of production.



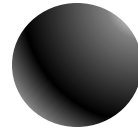
The application of dexterous hands in industrial manufacturing has improved production efficiency, reduced costs, and brought higher competitiveness and business opportunities for enterprises. As technology continues to advance and dexterous hands become more intelligent, they will continue to play a significant role in the industrial sector, promoting innovation and upgrading of production methods.

Color optional :

Model:ROH-A001



Meteorite silver



Obsidian black



OYMotion 's ROHand (dexterous hand) is a highly sensitive end-effector that simulates human hand movements, composed of a palm, wrist, five fingers, motors, transmission components, and more. Each of the five fingers can move independently and perform different actions under external commands.

Model	ROH-A001L (Left) ROH-A001R (Right)	Performance Standards	Parameters
Material	Zinc alloy, aluminum alloy	Maximum Closing Time	≤1.0 seconds
Degrees of Freedom (DOF)	11 total DOF, including 6 active DOF	Maximum Closing Time	≤1.0 seconds
Number of Joints	11 joints	Maximum Single Fingertip Force	≥4.41N
Repeatability	±1mm	Maximum Thumb Tip Force	≥9.8N
Gripping Method	Five-finger control	Maximum Tri-pod Tip Force	≥9.8N
Service life after charge	5,000 finger openings and closures	Maximum Static Load (Grip)	294N (30KG)
Finger Lifespan	100,000 times for finger openings and closures (Upgraded version: 300,000 times)	Maximum Individual Finger Load (Hook)	98N (10KG)
Weight	540g±5g	Maximum Fingertip Extension Load	78.4N (8KG)
Pressure Sensors	3D force + proximity sensors*		
Communication Compatibility	Standard	Size	Parameters
Communication Interface	UART/RS485/CAN	Middle Fingertip to Base of Hand	184mm
Communication Protocol	ModBus-RTU serial control protocol/CAN*	Thumb Tip to Base of Hand	93mm
Electrical Current Sensing and Limiting	Available	Thumb Length	111mm
Additional Support	SDK/ROS/ROS2/URDF	Width of Palm	83mm
Electrical Interface	LEMO type socket, cable direction can be freely adjusted	Wrist Diameter	49mm
Mounting Interface	Compliant with ISO 9409-1:2004	Thumb Swing Range (Lateral)	0~31 °
Setup Tools	Available	Thumb Swing Range (Reverse)	0~50 °
Static Current	0.12A @24V	Touchscreen Fingertips	Compliant
Average Current During Idle Motion	0.25A @24V		
Maximum Current for Maximum Grip	1.9A @24V		
Motor	Self-developed miniature precision		
Perception Capability	Force sensing (upgraded version), position sensing, posture sensing		
Motion Intelligence	Intelligent control of dexterous hand movements, fine operation control; anti-jamming control; anti-fall, anti-vibration protection.		
Control Intelligence	Button switching, app switching/Artificial intelligence algorithms based on deep learning		

Side grip (Fist)

It is used to grasp long strip items such as toothbrushes, knives, forks and handles.



Point

It is used to click keyboard, remote control button, doorbell and other light items.

Trigger (Buckle)

It is used to grasp and control items such as hair dryers and spray bottles with handles and switch buttons.



Mouse

Used for single-click or long-press mouse control.

Lift things

Apply to items with handles such as suitcases.



Palm

Used to support dishes, bowls, tennis balls and other items.

Side pinch (Key)

Used to grab keys, spoons, plates, cards, newspapers, zippers, shoe laces and other thin items.



Salute

Application of salute, dressing, pocket.

Make a fist (Power)

It is used to carry handbag items such as briefcases, schoolbags and shopping bags.



Tripod-TO

It is used to pick up books, napkins and other thin strip objects placed on the plane.

Empty grip (Grasp)

It is used to grasp cylindrical and spherical objects such as drinks, cups, apples, tennis balls and ping-pong balls.



Tripod-ITC

It is used to pick up mahjong and other thick objects placed on the plane.

Index finger push (Column)

It is used to push doors, Windows and other heavy objects, and can also be used to click keyboards, buttons and so on.

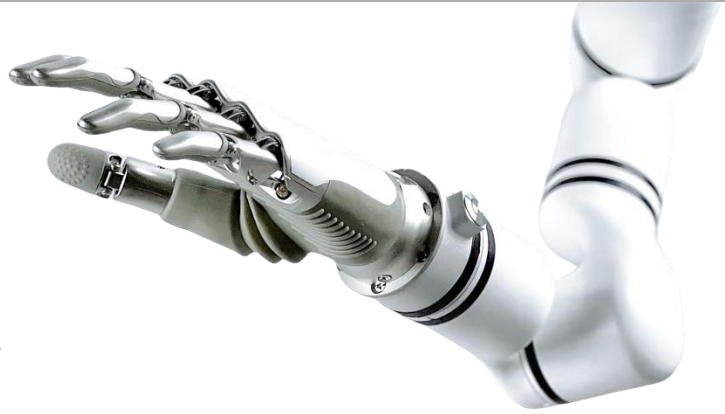


Chopstick

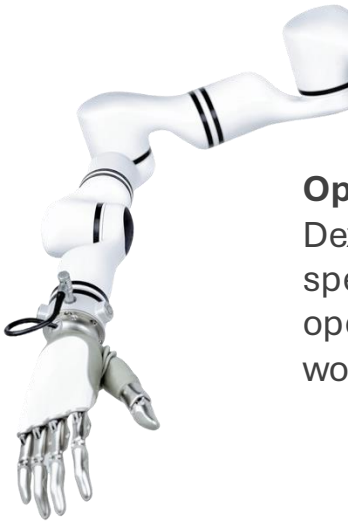
This action can be used with custom-made chopsticks to pick up food.

ROHand

**More precise operation
methods with more gestures.**



Applications 1 : Dexterous hand is used with robotic arm



Operation work:

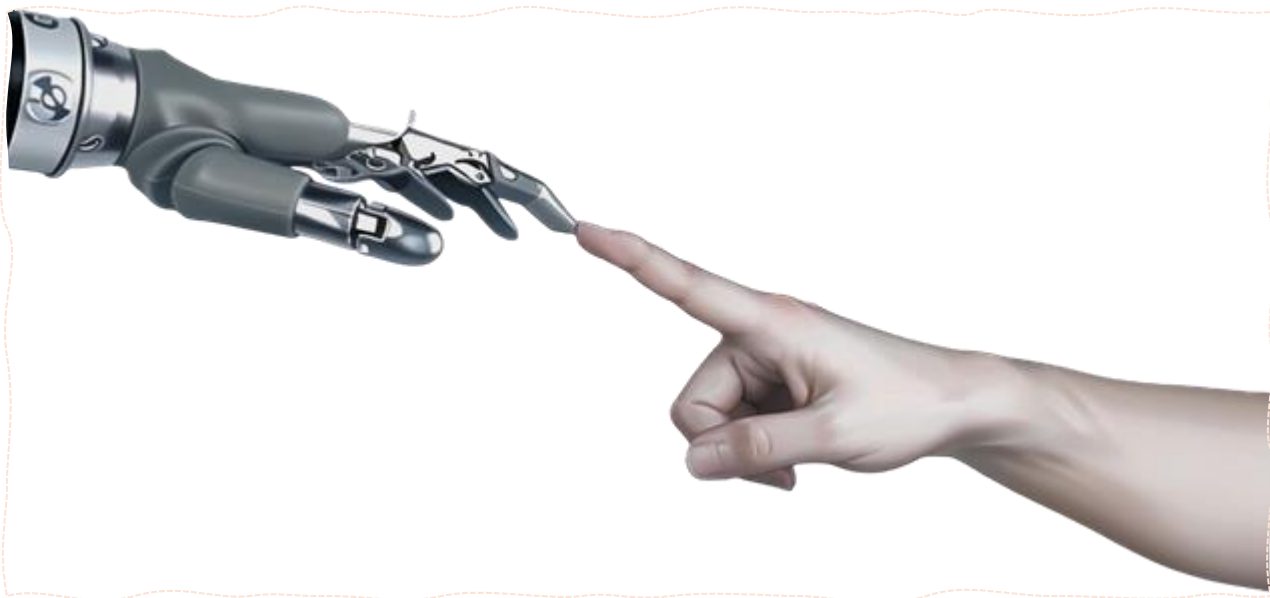
Dexterous hands are required to complete specific actions of industrial assembly line operations, such as "grasp", "grip", "sorting" work.

Applications 2 : Dexterous hands are used with robots



Operation work:

The dexterous hand is required to cooperate with the robot to stand up and complete some manual actions such as "handling", "lifting", "pushing" in the automated unmanned workshop.



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- Shanghai OY Information Technology Co., Ltd. has been focusing on the research and development of non-invasive brain-computer interfaces, neural signal AI decoding, and robotic core components since its establishment in 2015. The company's main products include robotic bionic dexterous hands, integrated joint motors, intelligent electroencephalographs, and wearable exoskeletons, serving fields such as educational research, clinical medicine, and humanoid robotics.
- OYMotion's ROHand Robotic Dexterous Hand is a highly sensitive end-effector that simulates human hand movements, achieving various grasping operations, and is widely used in humanoid robots, inspection robots, intelligent prosthetic limbs, and educational research equipment. The company has a global user base in the field of intelligent prosthetic limbs and over 10 years of prosthetic design experience.
- OYMotion collaborates with top domestic universities, applying the latest scientific research achievements to industries such as rehabilitation medicine, humanoid robots, and industrial robots, ensuring technological leadership. The company's products involve more than 200 supply chain enterprises and sales terminals, demonstrating the ability to drive industrial chain development through technological innovation and brand leadership. The company holds more than 60 patents, including more than 10 invention patents.



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