

PXCap III & PxDex III

1:1 Physical Isomorphism, Eliminating Mapping Loss

PXCap III Three-Finger Data Glove and PxDex III Three-Finger End-Effector are built on a 1:1 physically isomorphic architecture, enabling direct deployment from data collection to execution. The glove accurately captures human hand kinematics and tactile signals, while the end-effector fully replicates dexterous manipulation, eliminating cross-morphology accuracy loss and delivering a closed-loop solution for embodied intelligence.



PXCap III Three-Finger Data Collection Glove



Collection-Execution Isomorphism

Zero mapping loss via geometrically consistent sensor layout, kinematic linkage designs, joint DoFs and camera configuration



End Effector Defined by Glove

Direct conversion between glove trajectories and base frame, avoiding position offset and motion overrange



Cross-Host Variable Elimination

Multi-modal alignment of tactile sensing, vision and joint angles, achieving equivalent mapping and eliminating embodiment gap from morphological difference

PxDex III Three-Finger End-Effector



Strong Load-Bearing Performance

Boasting Powerful Thrust and Torque Capacity



Reliable Transmission Architecture

Achieving Long-Term Stable Operation with Minimum Maintenance



Strong Environmental Adaptability

Stable Long-Term Operation in Harsh Environments



Industrial Plug-and-Play

Preset Industrial Bus Protocols for Rapid Deployment

Common Technical Highlights



Dual 170° Ultra-Wide-Angle Palm Cameras

Compensating for first-person blind spots, recording hand-object interaction details, supporting lossless glove-actuator mapping



Full Tactile Perception

Zero Blind Zones across Fingertips, Finger Pads and Palm



Precision Pose Capture

Self-Developed Anti-Magnetic-Interference Encoder for Complex Scenarios

Whole-Glove Positioning

PXCap III is compatible with multiple glove-tracking solutions via interchangeable quick adapters and SDK provided on our official website. We recommend spatial tracking based on Meta Quest 3S, and an adapter for Meta Quest 3S Touch Controller is included as standard in the product package.

Application Scenarios



Data Collection



Teleoperation



Research & Education



Dexterous Manipulation



Industrial Applications



Scenario Optimization



PXCap III Three-Finger Data Collection Glove

Weight	650 g
DoF	4
Tactile Perception	PaXini 6D Hall Array Tactile Sensor
Minimum Detectable Force	0.1 N
Tactile Data Type	Resultant Force & Distributed Force Array
Joint Angle Sensing Capability	Self-Developed High-Precision Magnetic Encoder
Angle Encoder Precision	± 0.15°
Camera	RGB * 2
Camera FOV	D 170°
Camera Resolution	1080 p
Camera FPS	30 fps
Maximum Grasping Diameter	55 mm
Minimum Pinching Diameter	2 mm
Operating Voltage	12V DC
Whole-Glove Positioning Solution	Meta Quest 3S Headset + Controller Supports Other Positioning Solutions
Whole-Glove Positioning Accuracy	≤5mm (Meta Quest 3S Headset + Controller)
Lifespan (No-Load Grasp Cycles)	>1,000,000 cycles
Communication Protocol	USB

PxDex III Three-Finger End-Effector

Weight	836 g
DoF	4
Tactile Perception	PaXini 6D Hall Array Tactile Sensor
Minimum Detectable Force	0.1 N
Tactile Data Type	Resultant Force&Distributed Force Array
Joint Angle Sensing Capability	Self-Developed High-Precision Magnetic Encoder
Angle Encoder Precision	± 0.15°
Camera	RGB * 2
Camera FOV	D 170°
Camera Resolution	1080 p
Camera FPS	30 fps
Maximum Grasping Diameter	55 mm
Minimum Pinching Diameter	2 mm
Operating Voltage	19 ~ 48V DC
Driving Method	Coreless Motor
Rated Payload	5 kg
Lifespan (No-Load Grasp Cycles)	>1,000,000 cycles
Communication Protocols	EtherCAT / Modbus / USB

PaXini Tech

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