

PUDU DH11

11-DOF 5-fingered Dexterous Hand



Pudu Robotics Unveils the PUDU DH11: An 11-DOF 5-fingered Dexterous Hand to Empower Robotic Performance

2024.10.31 [PUDU DH11: the latest achievement from the Pudu X-Lab](#)

October 31, 2024 – [Pudu Robotics](#), a global leader in service robotics sector, announced the launch of the **PUDU DH11**, an **11-degree-of-freedom dexterous hand** to elevate the object manipulation capabilities of specialized, semi-humanoid, and humanoid robots. This release, following the semi-humanoid robot **PUDU D7**, represents another crowning achievement from the **Pudu X-Lab** and signifies a monumental breakthrough in precision robotic operations.

Degrees of Freedom	11	Weight	500 g
Tactile Sensing Areas	12	Tactile Sensor Pixels	1,018
Maximum Palm Finger Grip	30 N	Maximum Lifting Load	40 Kg
Palm Finger Bend Speed	150°/s	Thumb Bend Speed	191°/s

Core Specifications of PUDU DH11

The PUDU DH11 is designed with a human-like five-finger configuration, featuring 11 degrees of freedom and 12 tactile sensing areas, enabling it to perform a variety of tasks similar to those of human hands. Lightweight and agile, the hand also boasts durable and extensive touch coverage surfaces on the palm, four fingers, and thumb. These capabilities lay the foundation for Pudu Robotics' products equipped with the PUDU DH11 to use different tools in various environments, complete complex tasks, and provide richer and warmer emotional connections in human-robot interactions.

Key Features of the PUDU DH11:

- **Lightweight and Flexible:** Utilizing a biomimetic hand structure with a cable-driven system and underactuated mechanisms, the PUDU DH11 achieves significant reductions in weight and spatial footprint. This design imparts superior flexibility and compliance compared to traditional designs, allowing the hand to smoothly execute actions such as gripping, pinching, twisting, pulling, pushing, pressing, grabbing, and lifting.
- **Extensive Touch Coverage:** The PUDU DH11 integrates 12 tactile sensing areas with 1,018 tactile sensor pixels. These sensor pixels provide comprehensive perceive subtle force feedback from environmental objects during task execution, resulting in precise positioning and safe interaction with the environment.
- **Robust and Durable:** Constructed with multi-strand integrated steel cables, the PUDU DH11 exhibits excellent wear resistance and tensile strength, with a maximum single-hand lifting capacity of up to 40kg. It also showcases remarkable dynamic performance and finger execution speeds comparable to human hands. The simplified cable structure not only ensures water and dust protection but also reduces maintenance costs, making it ideal for harsh working conditions.

Following the release of its first semi-humanoid robot, PUDU D7, in September, the introduction of the PUDU DH11 underscores Pudu Robotics' commitment to pioneering advancements in robotics technology. This evolution in masterful object manipulation will allow robots of various designs and purpose to execute more intricate and delicate tasks.

Adhering to a customer-centric philosophy, Pudu Robotics continuously strives to explore diverse robotic forms driven by deep insights into customer needs. The company is actively enhancing its robots' capabilities in mobility, operation, and artificial intelligence. By leveraging its practical and reliable product innovations and its dedicated team of experts, Pudu aims to accelerate the deployment of general-purpose embodied service robots across various sectors, including F&B, retail, hospitality, industrial, healthcare, education, elderly care, and public services, empowering clients to achieve more efficient and intelligent service solutions.

About Pudu Robotics

Pudu Robotics, a global leader in the service robotics sector, is dedicated to enhancing human productivity and living standards through innovative robot technology. With a focus on R&D, manufacturing, and sales of service robots, Pudu Robotics holds over a thousand authorized patents worldwide, encompassing a wide range of core technologies. The company's robots have been widely adopted in various industries, including dining, retail, hospitality, healthcare, entertainment, education and manufacturing. To date, Pudu Robotics has successfully shipped over 80,000 units to a variety of markets, with a presence in more than 60 countries and regions worldwide. For more information on business developments and updates, follow PUDU on [LinkedIn](#), [Facebook](#), [YouTube](#), [Twitter](#) and [Instagram](#).