UNITREE

TECHNOLOGY DRIVES WORLD PROGRESS

Unitree Robotics

Web：www.unitree.com
Tel：+86 17621781139
Email：sales_global@unitree.com

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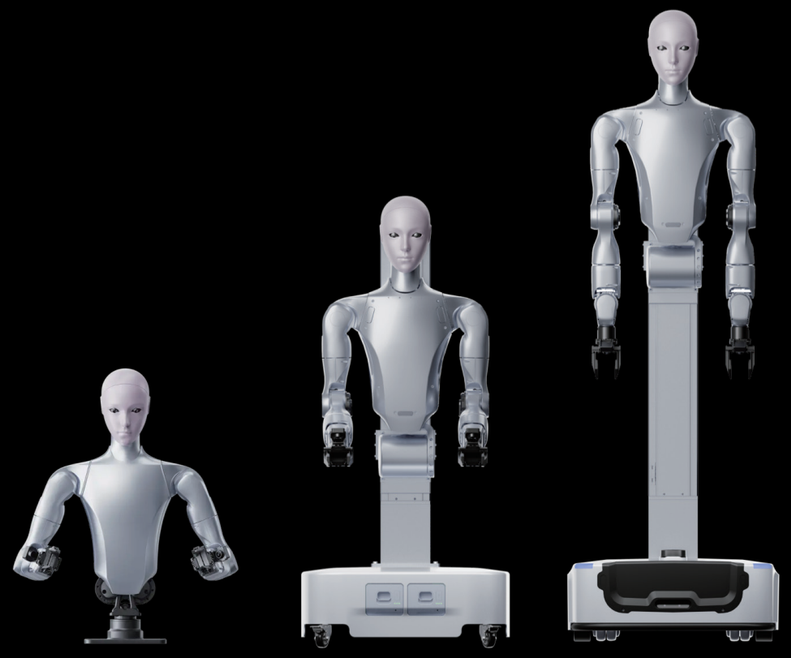
Unitree H2 Series Dual-Arm Humanoid Robot

Redefining the New Benchmark for Industrial Mobile Manipulation

Product Portfolio

The Unitree H2 Series Dual-Arm Humanoid Robot includes two product lines: H2-D and H2-A, designed to support diverse deployment configurations for industrial operations, commercial services, research and development, and embodied intelligence training.



H2-A Standard — Fixed Base

H2-D Standard — Manual-Move Chassis

H2-D Flagship — Mobile Chassis

High-Performance Embodied AI Platform

Fully In-House Technology Stack

From self-developed actuators and force-controlled joints to motion control algorithms, H2-D features an in-house technology stack with tightly integrated hardware and software. Supports secondary development and system customization.

20-DOF Agile Motion

Featuring 20 highly integrated force-controlled joints, H2-D supports omnidirectional mobility, vertical lift, and body pitch while maintaining outstanding stability and mobility in confined and complex environments.

Multimodal Perception

Integrates vision, LiDAR, ultrasonic sensing, force perception, and voice interaction to build a multimodal feedback system, enabling intelligent environment awareness and natural human-robot interaction.

Biomimetic Design & Full-Body Mobility

Total DOF (Excl. End-Effector)

H2-A Standard	H2-D Standard	H2-D Flagship
19	19	20
Dual arms 7*2 + Waist 3 + Head 2	Dual arms 7*2 + Waist 1 + Head 2 + Lift Column 2	Dual arms 7*2 + Waist 1 + Head 2 + Column 1 + Mobile Base 2
Waist DOF: Pitch, Yaw, Roll	Waist DOF: Pitch Column DOF: Vertical Lift, Yaw	Waist DOF: Pitch Column DOF: Vertical Lift

Mechanical Performance & Flexible Deployment

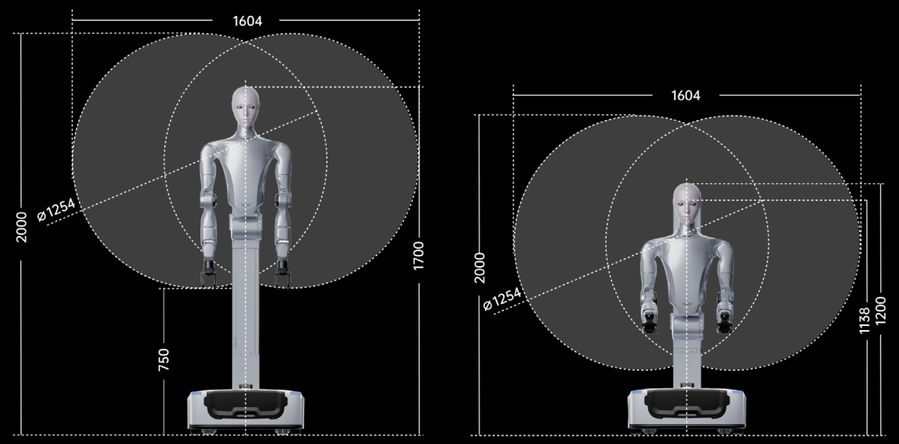
Peak Payload: ~15 kg
Rated Payload: ~7 kg

Supports a rated payload of up to 7 kg per arm, enabling efficient handling and assembly of heavy industrial components.

Fixed Base / Manual-Move Chassis / Mobile Chassis

Configurable as either a precision workstation or a mobile manipulation platform for diverse production environments.

Expanded Workspace & Flexible Reach



~0.6m
Single-Arm Reach
(Excl. End-Effector)

0.5m
Vertical Lift Travel

~0.75m
Turning Diameter

0-115°
Waist Pitch Range

Dynamic Operation with Proven Stability and Reliability

The mobile platform integrates LiDAR, depth cameras, and multiple sensors to enable autonomous navigation and intelligent obstacle avoidance.

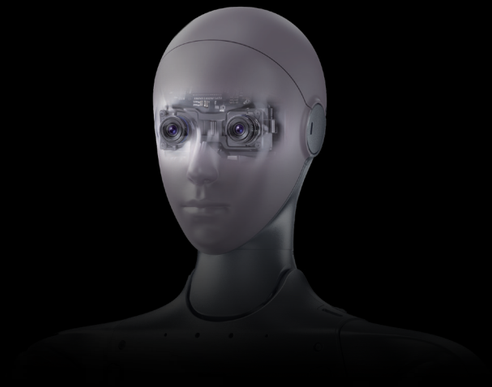
Combined with high-performance joints and whole-body dynamics algorithms, H2 coordinates mobility, manipulation, and posture control to achieve precise operations in dynamic environments.

Flexible Posture with Agile Pitch Motion

Supporting 0-115° body pitch, H2-D adapts to floor-level picking and overhead handling while providing a natural and ergonomic operating experience.

Multimodal Perception & Natural Interaction

Integrating binocular vision with natural language interaction, H2-D enables intuitive and natural human-robot collaboration.



Multi-Type End Effectors & Flexible Adaptation

Supports multiple end-effectors including: Grippers, Three-finger hands, Five-finger dexterous hands. Quick-change design enables rapid adaptation to different precision requirements and workload conditions.

Open Development & Rapid Deployment

Comprehensive SDKs and APIs, together with a mature navigation software stack, enable developers to focus on application innovation while reducing development cycles from months to weeks.

Industrial Automation

Industrial automation
high-speed sorting
autonomous warehousing

Commercial Services

Reception guided tours
retail operations

Research & Education

Embodied AI research and validation
robotics education and demonstration

Embodied AI Training Platform

Large-scale real-world data collection
model fine-tuning
sim-to-real transfer

	Model	H2-A Standard	H2-D Standard	H2-D Flagship
Mechanical Dimensions	Overall Dimensions	780*444*200mm	Min. Column Height 1200*576*620mm Max. Column Height 1700*576*620mm	Min. Column Height 1200*576*620mm Max. Column Height 1700*576*620mm
	Total Weight (with Battery)	34.4kg	135Kg	135Kg
	Total DOF (Excl. End-Effector)	19	19	20
	Arm DOF (Excl. End-Effector)	7	7	7
	Waist DOF	3	1	1
	Head DOF	2	2	2
	Column DOF	/	2	1
	Base DOF	/	/	2
	Joint Output Bearing	Industrial-Grade Cross-Roller Bearing (High Precision, High Load-Carrying Capacity)	Industrial-Grade Cross-Roller Bearing (High Precision, High Load-Carrying Capacity)	Industrial-Grade Cross-Roller Bearing (High Precision, High Load-Carrying Capacity)
	Joint Motor	Low inertia high-speed internal rotor PMSM (permanent magnet synchronous motor, better response speed and heat dissipation)	Low inertia high-speed internal rotor PMSM (permanent magnet synchronous motor, better response speed and heat dissipation)	Low inertia high-speed internal rotor PMSM (permanent magnet synchronous motor, better response speed and heat dissipation)
	Maximum Arm Joint Torque	120N.M	120N.M	120N.M
	Maximum Arm Payload [1]	Peak: ~15 kg; Rated: ~7 kg	Peak: ~15 kg; Rated: ~7 kg	Peak: ~15 kg; Rated: ~7 kg
	End-Effector Options [2]	Optional 2-Finger Gripper / 3-Finger Dexterous Hand / 5-Finger Dexterous Hand	Optional 2-Finger Gripper / 3-Finger Dexterous Hand / 5-Finger Dexterous Hand	Optional 2-Finger Gripper / 3-Finger Dexterous Hand / 5-Finger Dexterous Hand
	Waist Joint Range of Motion	Yaw: ±155° Pitch: +25°/-30° Roll: ±30°	Pitch 0°-115°	Pitch 0°-115°
	Lift Speed	/	Up to 200 mm/s	Up to 200 mm/s
	Lift Travel	/	0.5m	0.5m
	Single-Arm Reach (Excl. End-Effector)	~ 0.6m	~ 0.6m	~ 0.6m
	Overall Material Composition	Aerospace Aluminum, Titanium Alloy, High-Strength Engineering Plastics	Aerospace Aluminum, Titanium Alloy, High-Strength Engineering Plastics	Aerospace Aluminum, Titanium Alloy, High-Strength Engineering Plastics
Base Parameters	Maximum Mobility Speed	/	/	Up to 1.5m/s
	Drive System	/	/	Servo motors, dual-wheel differential drive, supports 360° in-place rotation
	Turning Diameter	/	Supports ±90° in-place Z-axis rotation	Turning diameter: ~0.75 m
	Chassis Sensors	/	/	Chassis LiDAR *1 Chassis Depth Camera *1 Physical Collision Sensor *2 Ultrasonic Sensor *2
Electrical Characteristics	Cooling System	Air Cooling	Air Cooling	Air Cooling
	Base Computing	PC1: Intel Core i5 (Platform Capabilities) PC2: Intel Core i7 (Custom Development)	PC1: Intel Core i5 (Platform Capabilities) PC2: Intel Core i7 (Custom Development)	PC1: Intel Core i5 (Platform Capabilities) PC2: Intel Core i7 (Custom Development)
	Perception Sensors	Humanoid Binocular Camera with Wide Field of View *1 Wrist HD Camera *2	Humanoid Binocular Camera with Wide Field of View *1 Wrist HD Camera *2	Humanoid Binocular Camera with Wide Field of View *1 Wrist HD Camera *2
	Voice Interaction	Microphone Array & High-Power Speaker for Natural Voice Interaction	Microphone Array & High-Power Speaker for Natural Voice Interaction	Microphone Array & High-Power Speaker for Natural Voice Interaction
	WiFi 6 & Bluetooth 5.2	Yes	Yes	Yes
Accessories	High-Performance Computing Module	Multiple brands and models available such as Thor, etc.	Multiple brands and models available such as Thor, etc.	Multiple brands and models available such as Thor, etc.
	Battery	Quick-Release Battery: 75.6V/15Ah (972 Wh)	Quick-Release Base Battery: 48V/18Ah (864Wh)	Quick-Release Base Battery: 48V/30Ah (1.44 kWh)
	Handheld Controller	Yes	Yes	Yes
Other	Battery Life	Battery Power Supply: About 8h (Depending on operating conditions) Direct Power Supply: 7*24H	Direct Power Supply: 7*24H	Battery Power Supply: About 5h (Replaceable Battery / Auto Charging)
	Intelligent OTA Updates	Yes	Yes	Yes
	Secondary Development [3]	Yes	Yes	Yes
	Warranty	12 Months	12 Months	12 Months

[1]The maximum load of the arm varies greatly under different arm extension postures.
[2]For end-effector selection, please contact our sales team.
[3]For more information, please read the secondary development manual.
[4]The above parameters may vary in different scenarios and configurations, please subject to actual situation.
[5]The humanoid robot features a complex structure and extremely powerful power. Users must maintain a sufficient safety distance between humans and the robot. Use with extreme caution
[6]The product appearance is subject to change. Please refer to the final product.
[7]Some features are under development and will be released gradually.
[8]This product is a civilian robot. We kindly request that all users refrain from making any dangerous modifications or using the robot in a hazardous manner.
[9]Please visit Unitree Robotics Website for more related terms and policies, and comply with local laws and regulations.