

# Unitree H1 STARTS A NEW INDUSTRIAL REVOLUTION

The most powerful general-purpose humanoid robot of its counterparts with similar specifications in the world.

- Self-developed high-torque joint motors
- 360° panoramic perception
- Dexterity for force-controlled movements and operations



Total Dimensions	About 47kg
Walking Speed	> 1.5m/s(potential speed>5m/s)
Battery	Battery capacity 15Ah (0.864KWh), Max. Voltage 67.2V
Control and Recognition Computing Power	2 × Intel Core i7-1265U
Sensor Configuration	3D LIDAR + Depth Camera
Key Dimensions	(1520+285) × 570 × 220mm
Thigh and Shin Length	400mm ×2
Total Arm Length	338mm ×2
DOF of Each Leg	5 (Hip×3+Knee×1+Ankle×1)
DOF of Each Arm	4 (Expandable)
Knee Torque	About 360N.m
Hip Joint Torque	About 220N.m
Ankle Torque	About 45N.m
Arm Joint Torque	About 75N.m
Flexible Fingers	Optional



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# H1

## Versions



<p><b>H1-S</b></p>	<ul style="list-style-type: none"> <li>• Key dimensions: (1560+200) mm * 570mm * 220mm; (Body height of 1.56 meters; Head height of 0.2 meters. Total height is about 1.76 meters; Body width: 0.57 meters; Body thickness: 0.22 meters)</li> <li>• Thigh length: 400mm; Calf length: 400mm</li> <li>• Arm length: 338mm; Forearm length: 338mm;</li> <li>• Single leg degrees of freedom: hip joint * 3+knee joint * 1+ankle joint * 1=5;</li> <li>• Single arm degree of freedom: 4;</li> <li>• Overall weight: approximately 47kg;</li> <li>• Joint unit ultimate torque: knee joint about 360N. m, hip joint saves 220N. m, ankle joint saves 45N. m, and arm joint about 75N. m;</li> <li>• Walking speed: greater than 1.5m/s (potential movement) ability&gt;5m/s);</li> <li>• 9) Battery: Capacity 15Ah (0.864KWh), maximum voltage 67.2V;</li> <li>• 10) Control and perception computing power: 2 * Intel Core i7-1265U;</li> <li>• 11) Perception sensor configuration: 3D LiDAR+depth camera; 12) Standard dual battery configuration</li> </ul>
<p><b>H1-M</b></p>	<ul style="list-style-type: none"> <li>• Key dimensions: (1560+200) mm * 570mm * 220mm; (Body height of 1.56 meters; Head height of 0.2 meters. Total height is about 1.76 meters; Body width: 0.57 meters; Body thickness: 0.22 meters)</li> <li>• Thigh length: 400mm; Calf length: 400mm</li> <li>• Arm length: 338mm; Forearm length: 338mm;</li> <li>• Single leg degrees of freedom: hip joint * 3+knee joint * 1+ankle joint * 2=6;</li> <li>• Single arm degree of freedom: 7;</li> <li>• Whole machine weight: 50kg+;</li> <li>• Joint unit ultimate torque: knee joint about 360N. m, hip joint saves 220N. m, ankle joint saves 45N. m, and arm joint about 75N. m;</li> <li>• Walking speed: greater than 1.5m/s (potential movement) ability&gt;5m/s);</li> <li>• 9) Battery: Capacity 15Ah (0.864KWh), maximum voltage 67.2V;</li> <li>• 10) Control and perception computing power: 2 * Intel Core i7-1265U;</li> <li>• 11) Perception sensor configuration: 3D LiDAR+depth camera; 12) Standard dual battery configuration</li> </ul>
<p><b>H1 dexterous hand (single handed)</b></p>	<ul style="list-style-type: none"> <li>• Multi joint dexterous hand</li> <li>• The degree of freedom is higher than most existing dexterous hands on the market</li> <li>• High performance motor with strong power</li> <li>• Note: Usually 1 H1 is equipped with 2 dexterous hands</li> <li>• Note: This diagram is a schematic diagram, and the appearance and parameters at the time of shipment are based on the actual product</li> <li>• The degree of freedom of dexterous hands is higher than most existing dexterous hands on the market.</li> </ul>
<p><b>Third party dexterous hand</b>  <small>*One hand  *Needs to distinguish left and right hand  *Only for H1-S</small></p>	<p><b>Smart Hand Parameters:</b></p> <ul style="list-style-type: none"> <li>• Degree of freedom: 6; Number of joints: 12; Repetitive positioning accuracy: ± 0.20mm</li> <li>• Maximum thumb grip strength: 6N; Maximum grip strength of four fingers: 4N; Grip force resolution: 0.50N</li> <li>• Thumb lateral rotation range&gt;65 °; Thumb lateral swing speed: 235°/s; Thumb bending speed: 150 °/s; Four finger bending speed: 570°/s</li> </ul> <p><b>Wrist joint motor parameters:</b></p> <ul style="list-style-type: none"> <li>• Rated torque: 3NM; Peak torque: 7NM</li> <li>• Rated speed: 120rpm; Maximum no-load speed: 200rpm</li> <li>• Reduction ratio: 10:1; Polar number: 14</li> <li>• There will be a rotational degree of freedom at the wrist, H1-S, with a single arm having 5 degrees of freedom</li> <li>• Smart hand * 1 and wrist joint motor * 1, There will be a rotational degree of freedom at the wrist, H1-S, with a single arm having 5 degrees of freedom</li> </ul>
<p><b>Third party dexterous hand</b>  <small>*One hand  *Needs to distinguish left and right hands  *Only for H1-M</small></p>	<ul style="list-style-type: none"> <li>• Degree of freedom: 6; Number of joints: 12</li> <li>• Repetitive positioning accuracy: ± 0.20mm</li> <li>• Maximum thumb grip strength: 6N; Maximum grip strength of four fingers: 4N; Grip force resolution: 0.50N</li> <li>• Thumb lateral rotation range&gt;65 °; Thumb lateral swing speed: 235 °/s; Thumb bending speed: 150 °/s; Four finger bending speed: 570 °/s</li> </ul>
<p><b>H1 foot end</b></p>	<ul style="list-style-type: none"> <li>• Material: Natural rubber+high-strength material</li> </ul>