

ALL-TERRAIN MOBILITY ROBOT X12

Ease Your Way to Anywhere



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ALL-TERRAIN ADAPTATION

Wheeled quadruped robotic chassis + Dual-track climbing system adapts flexibly to various complex terrains. 14 sets of powered-systems provide exceptional stability and obstacle-crossing capabilities, making it effortless to navigate stairs, steep slopes, and rugged surfaces as if it traversing flat ground, and the maximum speed can reach 6~12 km/h.



Various steps



Steep slope



Rugged terrain



DUAL-MODE SYSTEM

■ Caterpillar Mode

Featuring dual-caterpillar power system with independently controlled dual-motor drives, it delivers robust power to effortlessly tackle extreme terrains such as wide ditches.



Caterpillar Mode



■ Climbing&Obstacle-surmounting Mode

Combing caterpillar and wheeled quadruped mechanisms, this mode can address mobility challenges on stairs, steps, steep slopes and so on.



Climbing Mode



■ Wheeled Quadruped Mode

Equipped with independent power systems for each wheel and quadruped joint, along with a four-wheel independent suspension system, this mode delivers exceptional cross-country performance and comfort. It adapts perfectly to diverse terrains including indoor/outdoor flat surfaces, rugged paths, grassy areas, and gravel roads.



Quadra Wheels Chassis Mode



■ Zero-speed Vector Control

Relying on the independent Jinwu and Fuguang technology platforms, it can achieve full-stack FOC vector control of the motor and precise zero-speed operation, ensuring smooth operation, stable and safe climbing over obstacles, no vibrations during operating and avoid rushing forward or sliding on ramp.



Zero Speed Control



AI CONTROL

Detect obstacles through LIDAR, gyroscopes, etc., to construct the spatial morphology and determine the spatial position. Making use of the unique models and algorithms to control the deformation and movement of the robot, achieving fully automated control during the process of going up and down stairs, crossing slopes, traversing road shoulders and so on, truly realizing intelligence, comfort, and safety.



■ Intelligent Mode Switching

Automatically switches modes according to the shapes of obstacle and intention of the users to adapt to various terrains, maximizing passability.

■ Intelligent Matching of Power Output

Automatically make decisions to match the best power output as needed, including four-wheel power, track power, quadruped joint power, etc.

■ Intelligent Safety Guarantee

Automatically identify and actively adjust dangerous or incorrect postures and operations during driving to ensure comfort and safety.



OMNIBEARING BALANCE SYSTEM

■ Automatic Posture Stabilization System

It can intelligently detect different terrains and obstacles (such as potholed roads), and control the four wheels to automatically compensate for the depth, achieving automatic stabilization of the robot posture.



■ All-terrain 360° Self-balancing Dynamic Seat

Featuring the industry-first Prow Stabilization System, this seat integrates gyroscopic sensors with a proprietary spatial safety algorithm to achieve automatic balance on all complex terrains. And the machine can implement 360° omnidirectional steering on slopes, steps, and rugged paths while maintaining stable.



Jolts will occur while driving at high speed

AI+ALL-ROUND PARTNER

■ Intelligent Interaction Scenarios

It has rich postures similar to those of a real person, and can accurately respond to and execute commands such as raising legs to greet, dancing, swaying, etc., helping users deal with more complex interaction situations and making them more confident in socializing.



AI Intelligent Interaction



swing mode



■ Intelligent Assistive Driving and Safety Reminder

In line with automotive-grade security standards, the lidar can accurately detect the environment, then actively reminds users when they are in a dangerous area and issues a voice warning for potential risks of falling or tipping over.



Assisted Driving

■ Reverse Collision Detection and Warning



DYNAMIC SEAT SYSTEM

■ Seat Height and Angle Adjustment

Customized comfortable sitting posture meets the needs of socializing, working, and daily life.

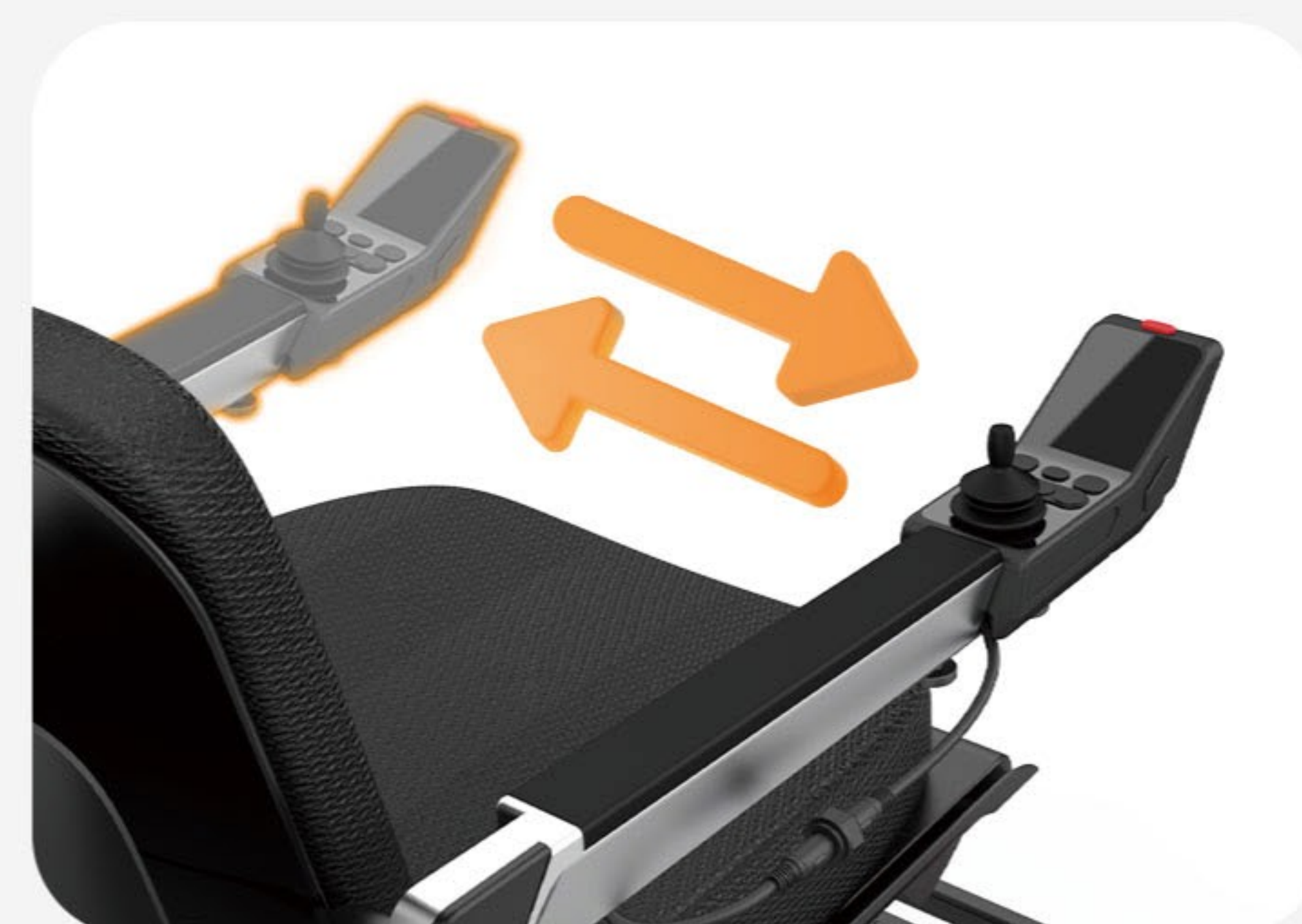


■ Complete Machine Posture Adjustment

The seat board, backrest, armrests, handles, footrest, legrest, etc. can all be adjusted in width, height, depth, angle and it can also be folded, which meet diverse needs of users and facilitate transportation and storage.



■ Multi-dimensional Intelligent Control Modes



PRODUCT PARAMETERS

(Dimensional units: mm)



Weight	About 100kg	Maximum Driving Speed	6~12km/h
Maximum Load	136kg	Range	35km
Balance Type	360° Full-time Automatic Balancing (Inclination Range: Forward & Bcakward 15°, Left & Right 8°,Other Directions 8~15°)	Chassis Type	Wheeled Quadruped Caterpillar Chassis
Upstairs Speed	25 Steps/min	Downstairs Speed	30 Steps/min
Chassis Powertrain Quantity	10	Pitch Range	Tilt Forward: 8° Reclining: 43°
Total Powertrain Quantity	14~16	Battery Capacity	24V 44.8Ah
Sensor Type	LiDAR and Gyroscope	Front Wheel	10 Inch Mecanum Wheel
Assisted Safe Driving Warn	Standard Configuration	Assisted Safe Driving Warn	10 Inch Standard Configuration
Reverse-Parking Radar	Standard Configuration	Waterproof Rating	IPX5
Seat Width	440~560mm	Seat Depth	370~500mm
Backrest Width	400/450/500mm	Armrest Height	175-250mm
Backrest Height	460~600mm	Backrest Tilt Angle	90°~135°
Adapted Stair Dimension	Height<220mm, Inclination<40°	Sensor Type	LiDAR and Gyroscope
Stairs/Landing Dimensions and Angle Specifications	Maximun Stairs Width: 800mm L - shaped Stair Corner: 1060x1060mm U - shaped Stair Corner : 1060(Depth) *2000(Width)mm Helical Angle<25°	Operation Mode	1. Remote Control 2. Joystick 3. APP 4. Automatic Follow 5. Wireless Key
Entertainment Feature	Gentle Sway Mode / AI-powered Mode	Locking/Unlocking Method	APP or Wireless Key
Lifting Range	Maximum:750mm Minimum:189mm	Obstacle Height	Backward: 220mm Forward:150mm
Minimum Turning Radius	Wheeled Quadruped Mode: 821mm Caterpillar Mode: 590mm	Uphill Angle	Backward: 40° Forward: 15° (Wheeled Quadruped Mode)
Ditch Span Width	Caterpillar Climbing Mode:≤350mm Wheeled Quadruped Mode:≤180mm	Movement Mode	1. Caterpillar Climbing 2. Climbing&Obstacle -surmounting Mode 3. Wheeled Quadruped Mode

*The above mentioned product functions and parameters are subject to the final delivery.