

# DEEP Robotics Jueying X30 Global Quadruped Robot Leader User Manual



## DEEP Robotics Jueying X30 Global Quadruped Robot Leader



### Description of Symbols

Before use (installation, transportation, maintenance, inspection), please be sure to read and master this manual, and familiarize yourself with the equipment and safety matters before you start using it. The safety matters in this manual are divided into “Caution”, “Mandatory” and “Prohibition”. Even the contents of “Caution” may cause serious consequences depending on the situation, so any of these safety matters are extremely important and should be strictly observed.

•  **Caution**

- Usage tips or operational recommendations. Improper using or operating the robot may cause damage to it.



- **Mandatory**
  - Matters that must be observed.



- **Prohibition**
  - Matters prohibited. Misoperation is dangerous and may cause injury to operators or damage to the robot.

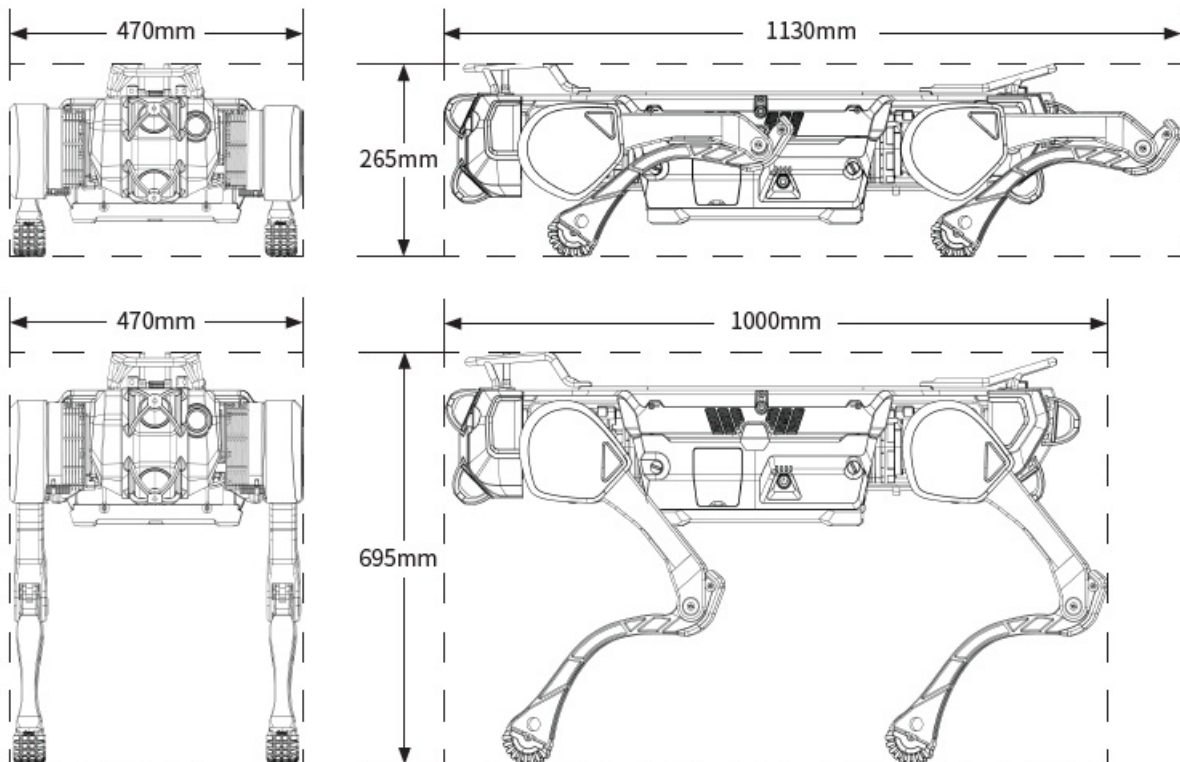
## Help Acquiring

For more resources to assist you in using Jueying X30 proficiently, you can also visit DEEP Robotics' corporate website: <http://www.deeprobotics.cn/>.

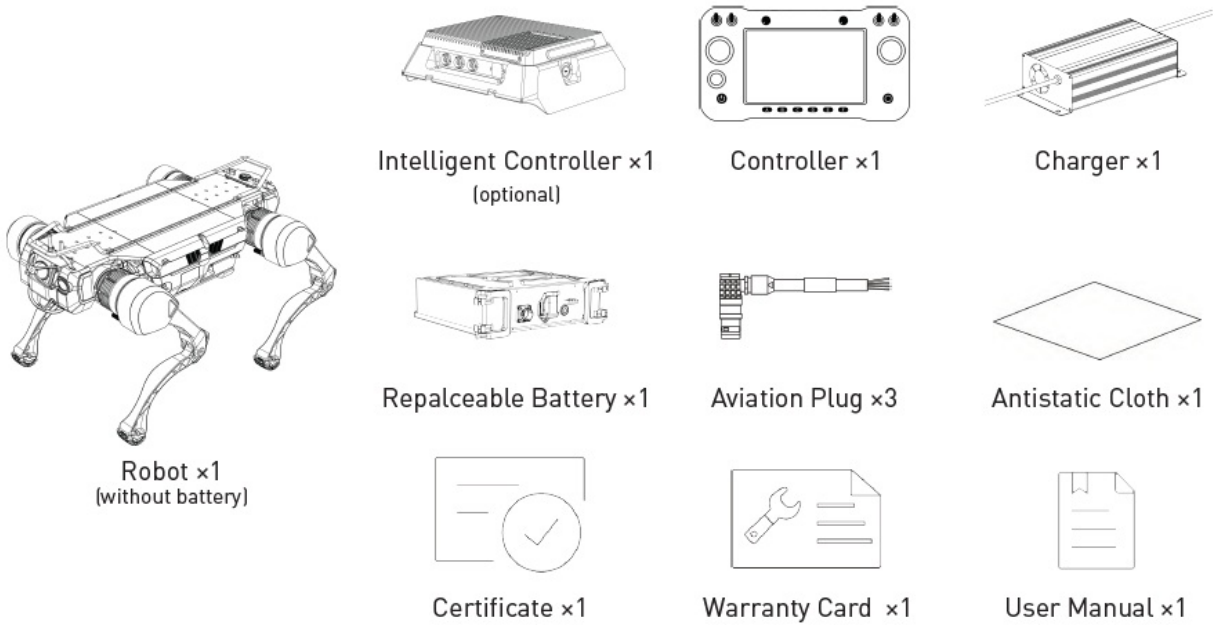
## Introduction

### Overview

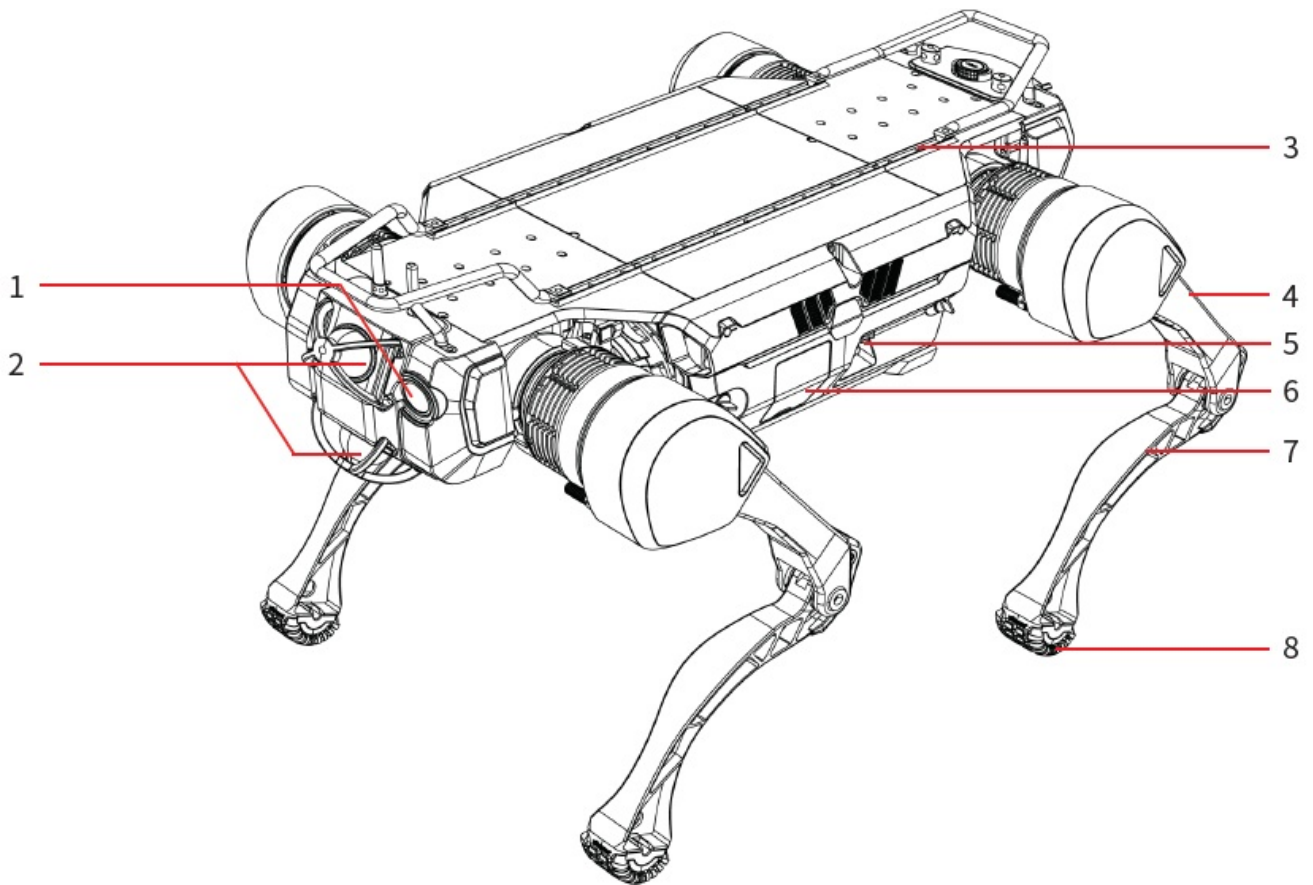
Jueying X30 is an intelligent quadruped robot designed to meet core industry needs, with a total of 12 degrees of freedom (DOF), capable of walking, going up and down the stairs. The robot is equipped with a wide-angle camera, four laser radars, and two internal hosts respectively for motion control and environmental perception calculation.



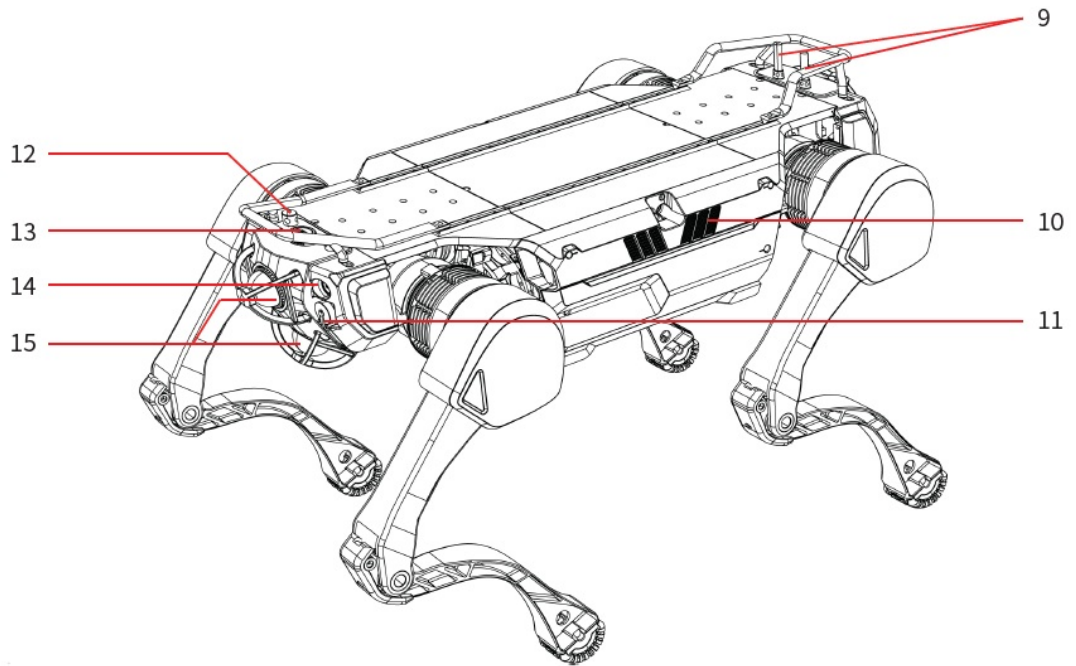
## Product List



## Main Specifications



1. Wide Angle Camera
2. Solid-State Laser Radar 3 Mounting Rails
3. Upper Leg
4. Power Button
5. Charging Port Cover
6. Lower Leg
7. Antislip Foot



- 8. Controller's Antenna
- 9. Cooling Fan
- 10. Debugging Ethernet Port
- 12 WiFi Antenna
- 11. Soft Emergency STOP
- 14 Hard Emergency STOP
- 15 Laser Radar

### Robot Dimensions

- **Sitting Size** (Length × Width × Height) 1130mm×470mm×265mm
- **Standing Size** (Length × Width × Height) 1000mm×470mm×695mm
- **Weight** 56kg

### Electric Parameters

- **Battery Capacity** 22.4Ah(Ideal data in an environment at 25°C )
- **Nominal Battery Voltage** 72V
- **Charger Input Voltage** 200V~240V
- **Charger Output** 84V/8A
- **Charging Time** 2.5h~3h
- **Power Supply** 72V(BAT)
- **Communication Interface** Ethernet; WiFi
- **Autonomous Charging** Supported

### Locomotion Parameters

- **Maximum Speed** 4.95m/s (Data from extreme test)
- **Maximum Walking Speed** 1.2m/s
- **Maximum Running Speed** 2.5m/s
- **Maximum Slope** ±30°
- **Maximum Step Height** 20cm
- **Maximum Slope of Staircase** ±45°
- **No-load Runtime** 4h
- **Payload Runtime** 2.5h
- **Payload** 20kg
- **Maximum Load** 85kg (Data from extreme test)

### Sensor Parameters

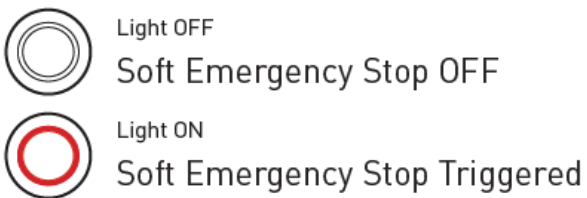
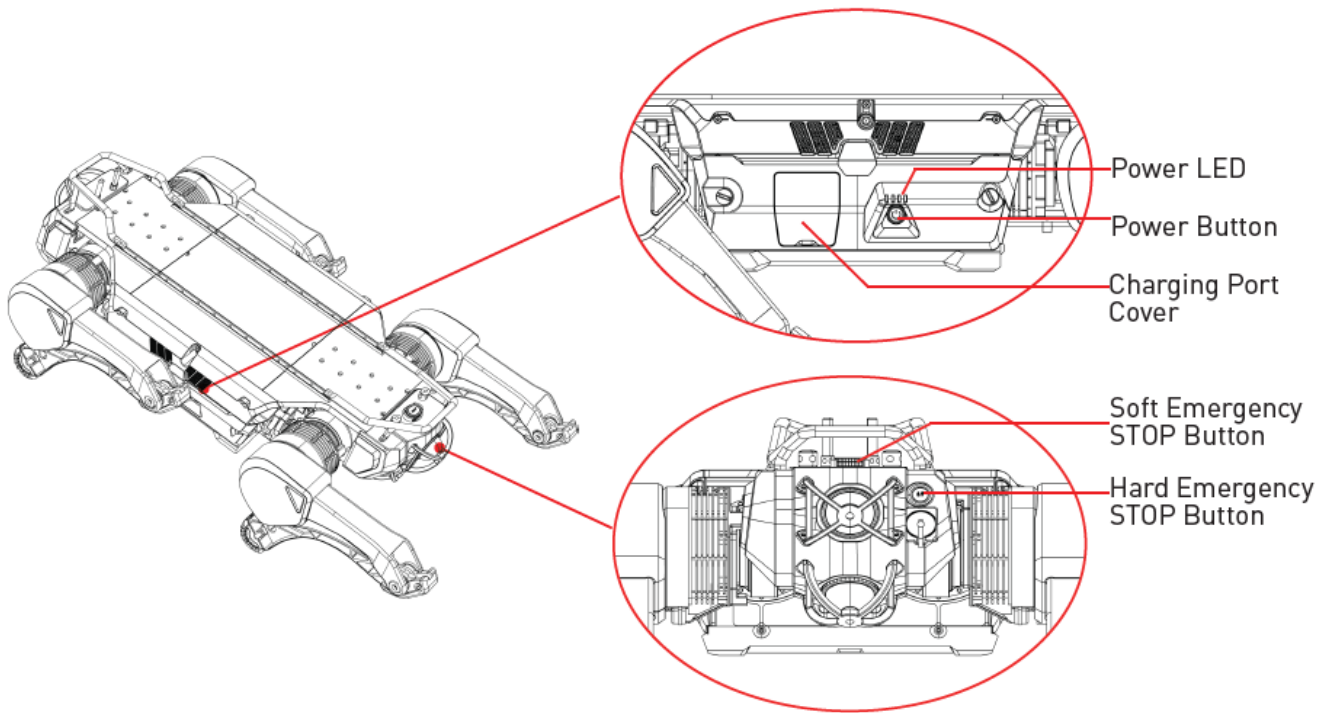
- **Laser Radar** ×4
- **Wide-angle Camera** ×1
- **Other Optional Modules:** Bi-spectrum PTZ Camera; RTK

**Environment Parameters**

- **Ingress Protection** IP67
- **Operating Temperature** -20°C~55°C

Data above is measured under ideal conditions, and the actual results may be biased.

**Power and STOP**



## Power LED

4 lights are always on	$75\% < \text{Current Battery Level} \leq 100\%$
1 light is off, 3 lights are always on	$50\% < \text{Current Battery Level} \leq 75\%$
2 light are off, 2 lights are always on	$25\% < \text{Current Battery Level} \leq 50\%$
3 lights are off, 1 light is flashing	$5\% < \text{Current Battery Level} \leq 25\%$
4 lights are off	$\text{Current Battery Level} \leq 5\%$
4 lights cycle on	Charging: $\text{Current Battery Level} \leq 25\%$
1 light is always on, 3 lights cycle on	Charging: $25\% < \text{Current Battery Level} \leq 50\%$
2 lights are always on, 2 lights cycle on	Charging: $50\% < \text{Current Battery Level} \leq 75\%$
3 lights are always on, 1 light flashes	Charging: $75\% < \text{Current Battery Level} \leq 100\%$

## Mode and Gait

### Control Mode

Manual	Robot is completely controlled by the user through the controller
Assist	The perception host will monitor the surrounding environment and assist the user in controlling the robot

### Body Height

Normal	Robot stands normally
Crawling	Suitable for passing through the terrain with smaller longitudinal height

### Gait

Walking	Suitable for flat surfaces such as concrete (limited max speed: 1.2m/s)
Running	Suitable for flat surfaces such as concrete (limited max speed: 2.5m/s)
Slope	Suitable for slopes less than $30^\circ$ or other gentle irregular terrain
Off-Road	Suitable for complex terrain through irregular obstacles such as stone piles and ruins

## Gait

Stair	It can perceive the shape of the staircase and calculate the foothold on its own, which is suitable for stairs with a slope under 45°
45° Stairs	It can perceive the shape of the staircase and calculate the foothold on its own, which is suitable for stairs with a slope of 45°, and is only supported in multi-frame mode
L-Walk	Utilizes AI algorithms, suitable for surfaces with slight undulations under normal conditions
Mountain	Utilizes AI algorithms, suitable for complex terrain with height differences, slopes and stairs
Silent	Utilizes AI algorithms, suitable for scenarios requiring reduced robotic motion noise.

- L-Walk is suitable for surfaces with little undulations, including but not limited to flat surfaces, muddy surfaces, flooded surfaces, undulating surfaces with small differences in height, stairs with a single step of 15cm, slopes of 18°, etc.
- Mountain is suitable for surfaces with large undulations under normal conditions, including but not limited to rubble surfaces, bumpy surfaces with large differences in elevation, stairs with a single step of 25cm, and slopes of 30°.
- Silent is suitable for noise cancellation demand scenarios, the gait noise when standing still  $\leq 50\text{dB}$ , walking noise  $\leq 60\text{dB}$ , does not support walking up and down stairs, walking on slopes.



- When the robot passes through stairs or slopes, do not stand on the stairways, platforms or slopes below the robot, to avoid possible personal injury if the robot falls.
- The robot can only climb stairs when its front faces the upward direction of the staircase.



Using mountain gait generates a lot of heat, and the continuous use of this gait to cross obstacles within a short period of time will easily cause the robot to overheat, so it is recommended not to use this gait to climb stairs for more than 8 minutes continuously.

## Elevation Map Mode

Solid ground mode	Suitable for scenarios where the robot's landing plane is solid, such as a normal solid concrete flat floor or concrete stairs.
Grid ground mode	Suitable for scenarios where the robot's landing plane is a grid-like pattern with gaps in between, such as an industrial platform or staircase made of steel grating panels.
Stair without risers mode	A special condition of solid ground, which refers to a staircase where the robot places its feet on a solid surface without risers.
Multi-frame mode	Suitable for scenarios including multiple types of ground surfaces or 45° stairs. For example, if the robot moves from solid ground to grid ground.

## Operation

### Preparation Environment



- Please ensure that operators and non-operators present have read the manual carefully and understand the basic operating instructions and safety precautions.
- Before start Jueying X30, ensure that all people or objects present are more than 2 meters away from the robot to avoid collisions.
- Please use Jueying X30 in an environment of -20°C~55°C.



- Check the battery indicator. It is suggested to use the robot when the battery is at least 75%.
- Make sure that the emergency stop buttons stay off.
- Make sure there is no visible damage to the exterior of the robot.
- Make sure the joystick used for remote control is fully charged.



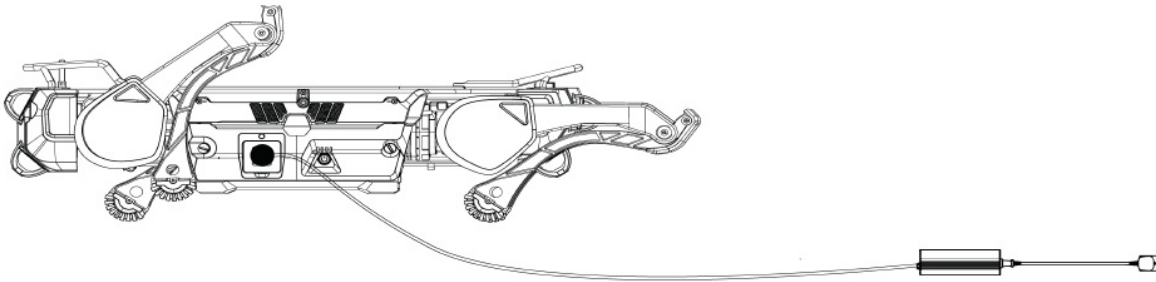
- If the robot parts are aging or damaged, please do not start the robot and contact the after-sales staff in time.

### Charging the Robot

Jueying X30 is powered by a ternary lithium battery.

You can connect the robot with 220V AC power supply through the charger, and the charging port is located on the left side.

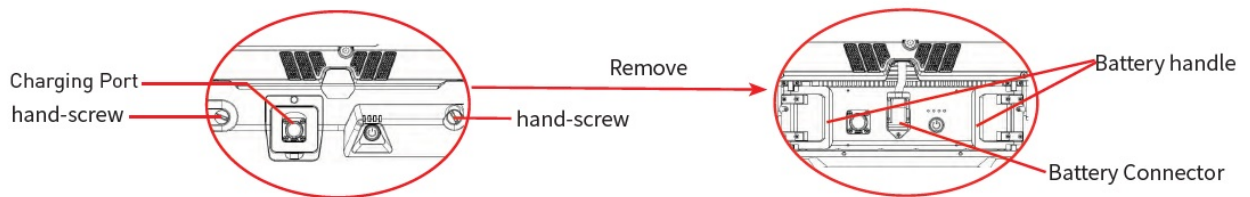
1. First make sure the robot is turned off. Open the charging port cover and connect the charger to the charging port and tighten it (charger has an anti-reverse plug-in port), then connect it to 220V AC power.
2. During charging, the charging indicator on the charger is red.
3. When charging is complete, the charging indicator on the charger turns green.



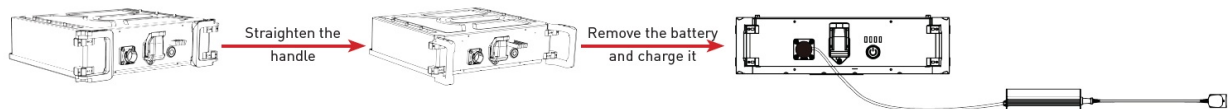
## Changing Battery

The battery of Jueying X30 Pro is replaceable, so users can take out the battery and replace it with other batteries, and charge the removed battery separately.

1. Unscrew the two hand-screws, remove the cover plate, and unplug the connector:



2. Straighten the battery handle outward and take out the battery, then connect the charger for charging:



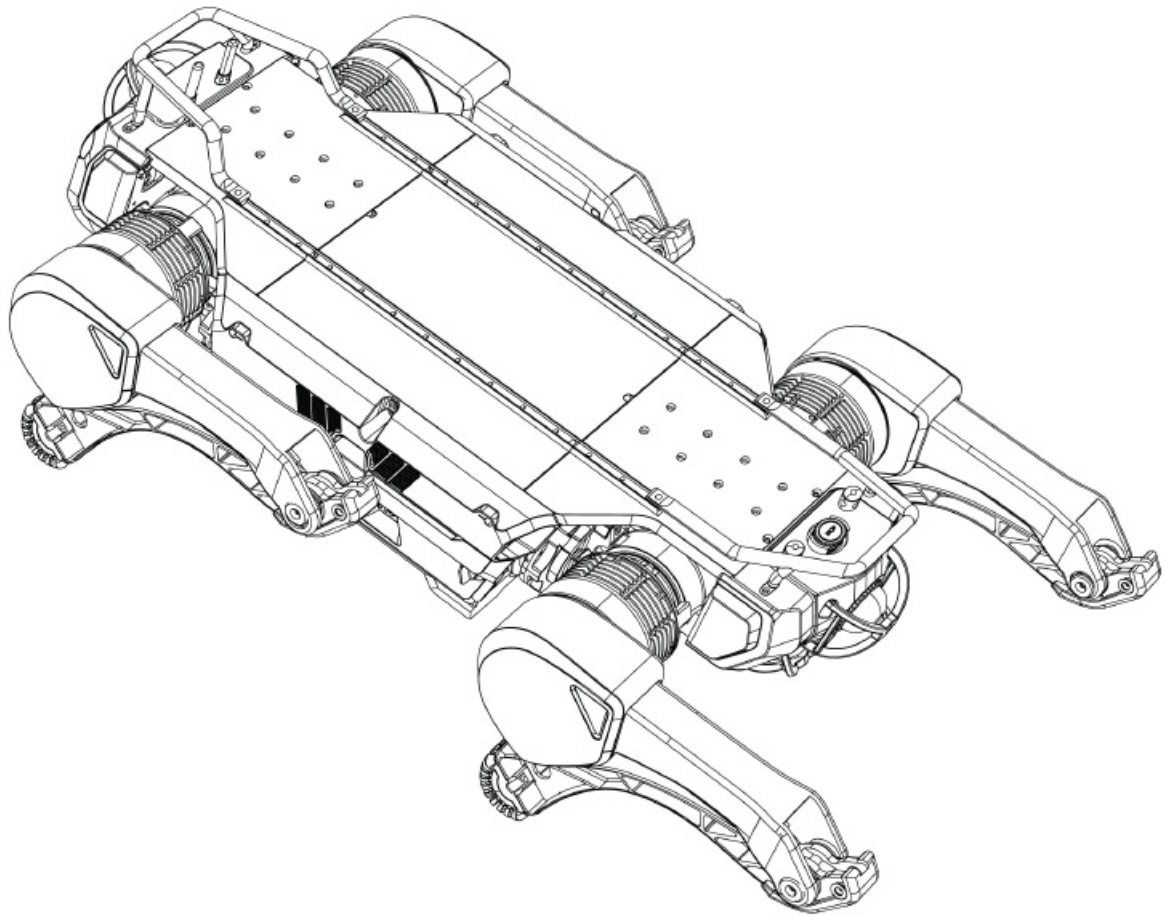
3. When charging normally, the charging indicator light on the charger is red; when charging is complete, the charging light on the charger turns green.



- It is recommended to charge in an environment of 0 °C to 45°C .
- During charging, please do not power on the robot and always pay attention to the state of the charger during charging to avoid accidents. Disconnect the charging power supply in time after charging.
- When the robot is not charging, the charging port cover must be closed to prevent water.

## Start Preparation

1. Take the robot from the transport case and place it on a flat surface, as described in the section "Transport and Storage".



2. Adjust the robot pose as required (as shown in the picture above): knee joints retracted, hip front swing joints swung back, side swing joints vertical, and the bottom of the body touching the ground.

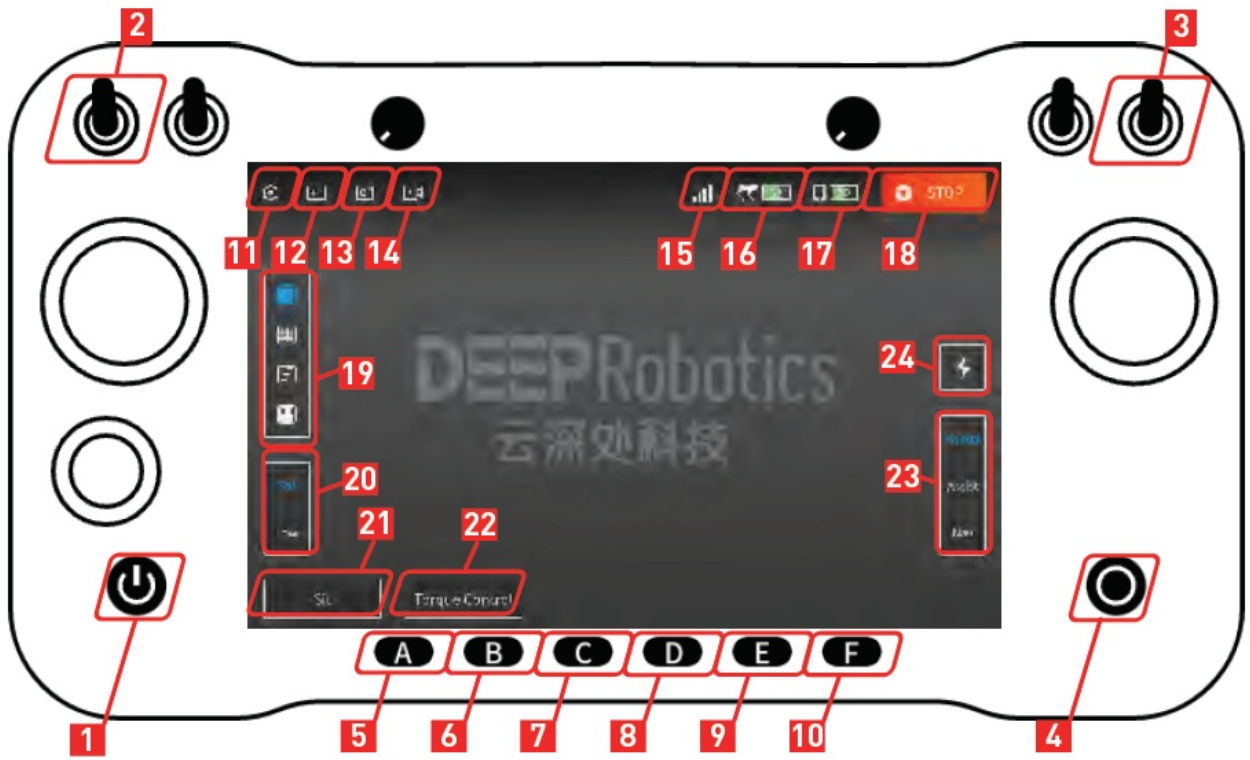
### **Power on**

Press the power button to turn on the robot. At this time, the power button is always on. At the same time, it is necessary to ensure that the light of soft emergency stop is off and the light of hard emergency stop is on. If not, press the hard emergency stop button or rotate the soft emergency stop button in the direction indicated by the arrow to turn it off. If the hard emergency stop is triggered, it is necessary to restart the robot after turning off the hard emergency stop.

### **Connection**

Long press the power button to turn on the controller (please ensure that the controller is fully charged). The robot and controller have been paired and bound. After opening the app, the controller will automatically connect to the robot it is bound to.

### **Motion Control Controller Operation**



## Button

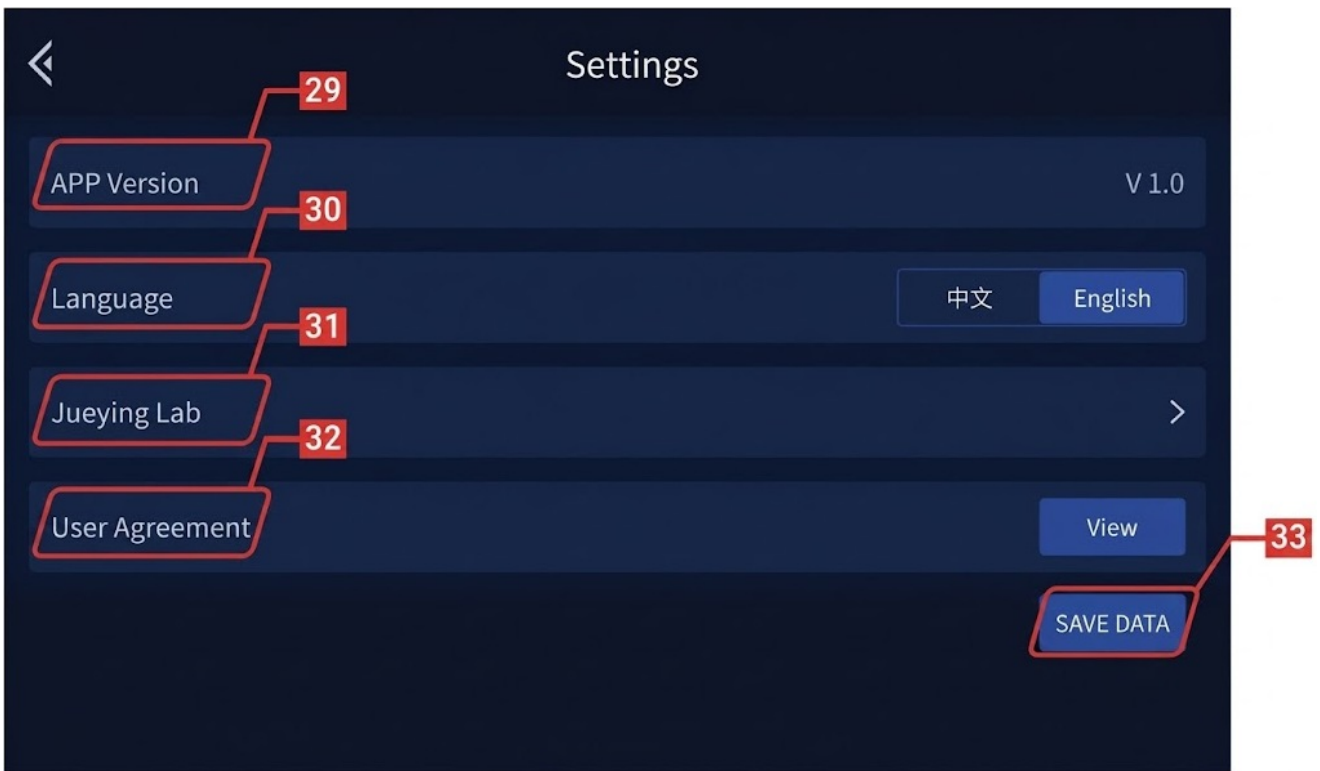
① Controller Power	Press and hold to power on/off, and press once to wake
② SW1	Flip up simultaneously                      Trigger Soft Emergency Stop
③ SW4	Flip to the center simultaneously              Cancel Soft Emergency Stop
④ Start/Stop Moving	Start or stop moving, that is, to start or stop stepping
⑤ A	Stand up or sit down
⑥ B	Switch to Torque Control Mode to unlock each joint
⑦ C	Switch to Walk gait
⑧ D	Switch to Run gait
⑨ E	Switch to Slope gait
⑩ F	Switch to Off-Road gait
Settings	View APP version/Set language/Jueying Lab/User Protocol/Save data
Buttons Introduction	Show the introduction to physical buttons
Screenshot	Save images for the video streaming
Record	Record a video of the video streaming
Robot Signal	Displays the connection status connected/connecting/disconnected
Robot Battery	Real-time display of robot signal strength
Controller Battery	Real-time display of the controller's remaining battery
STOP	Soft emergency stop: Forcing the robot to lie down, which is generally used when the robot dog is out of control or in an emergency
Elevation Map Mode	Select the elevation map mode, from top to bottom: Solid Ground/Grid Ground/Stair without Risers/Multi-Frame
Body height	Select body height: Normal/Crawling, and the button displays the current status
Stand/Sit	Stand up or sit down and the button displays the current status
Torque Control	Switch to Torque Control Mode to unlock each joint
Control Mode	Select the control mode: Manual Mode/Asist Mode/Nav Mode(Nav Mode only supported by Jueying X30 Pro)

## Button

Auto Charging	To enable the robot dog to perform autonomous charging, please refer to the autonomous charging manual for specific use	
SW2	Flip to the center	Show the real-time video from the robot
	Flip up or down	Close the real-time video from the robot
Gait	Select gait, which can be switched only in the stepping status	
Start/Stop Moving	Start or stop moving, that is, to start or stop stepping Open the Jueying Lab to show a top-down 2D obstacle point	
2D obstacle point		
clouds	cloud	

- After connecting the robot, will display as connected, at which point you can start controlling the robot.
- After standing up, each joint of the robot is in a protective locking state, and in this state, it can switch between lying down and standing by ⑤ or , or switch to force control mode by ⑥ or , and the locking state of each joint can be lifted, so that it can move in steps.
- To make the robot walk, first make the robot stand up, then press ⑥ or to switch to torque control mode, and then press ④ or to make the robot start moving, and the robot will start stepping. At this time, the left joystick can control the robot to move forward, backward, left and right, the robot will adjust the movement speed according to the amplitude of the joystick, and after releasing the joystick, the robot will slow down to zero and step in place; The right joystick controls the robot to turn left and right. Press ④ or again to end walking, and if the robot is walking forward, it will take a certain amount of time to slow down and stop.
- Soft emergency stop on Controller: Triggered by flip ② and ③ up simultaneously or clicking .
- Through , the stair gait can be assisted to carry out foothold planning in manual mode, and the correct elevation map mode needs to be selected according to the type of staircase ground when used; In the assist mode, it can assist the user to avoid obstacles, and it is necessary to select the correct elevation map mode according to the ground in the actual environment to make the obstacle avoidance function work normally.
- Multi-frame mode can only be enabled when the robot is standing still.

## Settings



## Button

APP Version	View the current APP version
Language	Select language: /English
Jueying Lab	Click to enter the “Jueying Lab”
User Agreement	Click “View” to view the user agreement
SAVE DATA	Save the data of robot operation

When the robot is abnormal, you can use the SAVE DATA to record the abnormal data for troubleshooting. Please ensure that the robot dog is in the state of getting down or emergency stop before using it.

## Jueying Lab



## Button

Navigation Recorder

Only the Jueying X30 Pro supports this feature

Mobile Terminal

Click “Connect” to establish an SSH connection with the robot dog host, and enter the command line through the remote terminal to perform some functions

Collision Avoidance Strategy in Assist Mode

Toggle the elevation map obstacle avoidance mode: Decelerate/Detour, which is in the Decelerate mode by default

Auto Charge

Turn on or off the autonomous charging function in the control interface, which is on by default

2D Obstacle Point Cloud

Turns the 2D obstacle point cloud display on or off in the control page, which is off by default



- When operating the robot, please keep at least 2 meters away from the robot to ensure safety!
- Dragging, riding and other dangerous interactions with the robot are strictly prohibited during operation!
- Never put your hands, feet or other objects within the range of the robot’s joints or under the robot.



- If you encounter problems with Navigation Mode, please switch to Manual Mode in time or press the soft emergency stop button.
- If you want to control the robot to twist, please turn on the enable\_twsit switch in the configuration file. Read Application Manual for details.

## Emergency Operation Soft Emergency Stop

If the robot's legs swing or shake violently and other abnormal phenomena occur during use, please start the soft emergency stop function on the Controller (flip ② and ③ up at the same time or click the button ) or push the soft emergency stop button at the tail of the robot to make the robot lie down and enter the self-locking protection state. If the soft emergency stop is triggered by ② and ③ , please flip them back to release the soft emergency stop. If the rear soft emergency stop button is pressed, you need to rotate the button in the direction of the arrow on the button to release it. After releasing the soft emergency stop, please release the force in time (press ⑤ or ) to release the self-locking protection. After troubleshooting, press the stand button again to operate the robot normally.

## Hard Emergency Stop

Hard emergency stop, that is, hardware emergency shutdown, press the hard emergency stop button at the tail of the robot, and the indicator light is off to indicate that the hard emergency stop has been triggered, which can ensure that the robot joints are locked in the boot state and avoid the robot from getting out of control. At this time, press the hard emergency stop button again, and the indicator light will be on to indicate that the hard emergency stop has been lifted, and the robot needs to be restarted to restore the normal use state after the hard emergency stop is lifted.



Once the hard emergency stop is triggered, it will cause the robot to lose all kinetic energy and thus fall to the ground. There is a risk of damaging the ground or the robot, so it is strictly forbidden to press the hard stop emergency button during normal movement!

## Overtemperature

The system comes with temperature sensing. Once the robot runs for a long time causing the motor or drive to overheat, it will automatically start the overtemperature protection and the robot will automatically stop moving and get down in place.

## Falling Down

If the robot falls down suddenly, the joints will be automatically locked. Please try to click [Stand] button in the app after making sure there is no obstacle around. If the robot still can't get up, press the emergency stop button at the rear of robot, then click [Save Data] at the Settings page of the APP and power off the robot.

## Low Battery

When the robot's battery is below 10%, it will enter a low battery warning state, and it should be charged immediately. When the battery level drops below 3%, the robot will trigger a low battery protection mode, where it will automatically lie down and will no longer respond to commands from the remote controller.

## Other Circumstances

- If the joints are not locked or are still swinging after the robot falls down suddenly, wait 30 seconds after the robot joints have completely stopped moving before pressing the hard emergency stop button at the rear of the body.
- In case of a fire, do not use water to extinguish it. Please use foam fire extinguisher, dry powder fire extinguisher or carbon dioxide fire extinguisher nearby.
- If the soft emergency stop button fails or smoke from or water in robot or other unexpected situations, please immediately power off the robot and wait until it's safe to identify the problem. Then please contact DEEP Robotics, and we will help to troubleshoot the problem and repair or change your robot. Pay attention to safety in use!
- If the robot falls, do not drag, push or flip it before triggering the hard emergency stop.

## Power Off



Make sure that the robot is sitting before the following operations.

Press the power button to power off the robot.



After powering off, please cover the robot with the antistatic cloth to avoid dust contamination of laser radar and other devices.

### **Payload and Development**

Users can attach payloads to the back of the robot or develop new functions based on software interfaces. To learn more about payload development, usage of software interfaces and packages, refer to Application Manual and API Documentation.



- After attaching payloads to the back of the robot, please modify the parameters of payload. To learn more about how to modify the parameters, refer to the chapter “2.2 Parameters Configuration” in Application Manual, or contact after-sales staff.
- The maximum power supplied by the robot to the payload is 600W.
- Please cover the aviation plug with its cover.

### **Precautions**

#### **Work Environment**



- Please do not operate the robot in environments with strong WiFi signal interference. Be sure to turn off part or all other WiFi signal sources, and then use the joystick to operate the robot.
- Do not operate the robot in such bad weather as fog, snowing, lightning, sandstorms, windstorms, tornadoes, etc.
- Keep the robot in sight and always keep it at least 2 meters away from people, water, open flames, etc.
- When using the robot on smooth surfaces such as glass and tiles, avoid violent movements and apply Stair or Slope gait to prevent the robot from slipping and falling down.
- Do not operate the robot on the edge of a high place to prevent it from falling and causing damage.
- Please consult the after-sales staff first before operating the robot in environments with strong electromagnetic interference.

#### **Other Precautions**



- When carrying the robot, pay attention to the anti-pinch label on the robot and do not put your hands into the position where the anti-pinch label is attached!
- Do not lift the robot while it is moving to avoid unintended movements that could cause damage to robot or injury to people!



- Please do not download other unrelated APPs in the controller.
- Pay attention to the sealing label on the robot. It is strictly forbidden to disassemble the robot personally. Once disassembled, the warranty will be invalid!

## Transport and Storage

### Transportation

The transport case is 1.09m×0.55m×0.57m.



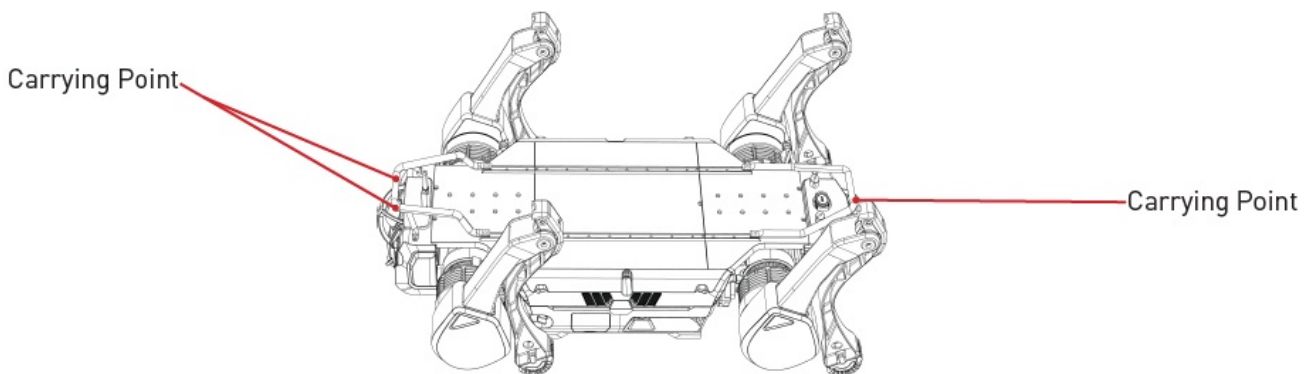
- Before the transport case is being transported on the truck, make sure to step on the two diagonal brake wheels on the transport box.
- During shipping the robot with transport case, make sure the front of the transport case is facing up.

### Storage

- Jueying X30 shall be stored in a clean and dry place at -20°C ~55°C .
- Robot must be powered off.
- Do not pour water or other liquids on the robot.
- Do not place other objects within the joint rotation range.
- Cover the robot completely with a clean antistatic cloth after use.
- It is recommended to store Jueying X30 in the specifically designed transport case to protect it from shock and vibration.
- Jueying X30 must be placed in the transport case with its back facing up.
- If the robot is not used for a long time, charge it every three months to keep the battery active.

### Carrying

Jueying X30 weights approximately 56 kg and it is recommended that two people carry it: one person lifts the carrying point on the front side of the robot, while the other lifts the carrying point on the back side of the robot.



- Power off Jueying X30 and carry it gently.
- Do not hold joints to prevent pinching or even scratching when carrying.
- The metal components of the robot's legs that have just finished running are hot, so please wait until it cools down to a suitable temperature before carrying.

## Service and Warranty

### After-Sales Service

- After the delivery of the equipment, DEEP Robotics will send the specialized staff to check the equipment and install the system as agreed.
- Provide free user training to guide users to operate the equipment, and arrange technical support staff to provide timely after-sales service to ensure the smooth operation of the system.

### Warranty Policy

The warranty period for the major components of Jueying X30 is as below.

Component	Warranty Period
Joint Module, Upper Legs, Lower Legs	6 months
Battery, Laser Radar, Wide-angle Cameras, Hosts	12 months

**Tip:** Shell, foot, other wear components, transport case and other accessories are not covered by warranty. If necessary, please consult the after-sales staff.

The warranty period starts from the acceptance date. Products or components that are in the warranty period and covered by warranty acquire free warranty service. If the product you purchased is beyond the warranty period, you can also be helped by us through purchasing the separate service.

### Warranty Coverage

Depending on the specific situations, we will repair or replace components for the product you purchased. However, the following situations will not be covered by the free warranty, but you can still choose the paid warranty service. Please consult the after-sales staff for details:

- Damage caused by man-made non-product quality problems.
- Unauthorized modification, disassembly, shell opening, etc.
- Out of warranty.
- Damage caused by improper installation, use and operation (such as dropping, crushing, immersion, violent use, etc.) as required by the manual.
- Damage caused by secondary development.
- Damage caused by use in excess of the safe weight capacity.
- Damage caused by self-repair or replacement of parts without official instructions.
- Damage caused by installing third-party products by yourself.
- Damage caused by the use of a non-original battery pack for power supply.
- Failure or damage due to force majeure factors such as typhoon, earthquake, fire, lightning strike, or abnormal voltage.
- Damage caused by operating the robot dog in an environment with severe signal interference.
- Damage caused by improper handling of the robot on slippery surfaces such as glass and ice.
- Fallen damage caused by the use of a robot near a high edge.
- Fallen damage other than operate the robot on flat terrain.
- Damage caused by operation in environments such as sharp terrain and large undulations.
- Damage caused by forced operation of parts in the event of aging or damage.
- Damage caused by not keeping a safe distance when used in complex environments.
- There are obvious traces of dust, grit, water, and metal powder intrusion inside the robot.
- Damage caused by improper handling operations.
- Damage caused by violent or non-violent means applied to the robot when it exceeds its anti-interference limit.
- Due to operation errors, there are obvious marks of collision and scratches on the surface of the robot.

### Repair Instructions

- Before acquiring after-sales service, please make sure to back up all data and delete important data to prevent data loss or leakage. DEEP Robotics is not responsible for any data loss or leakage in the product.

- When you acquire after-sales service from DEEP Robotics, you authorize DEEP Robotics to make any modification, delete data or restore factory settings for the purpose of after-sales service.
- Before sending it for repair, please contact the after-sales staff and DEEP Robotics will try to diagnose and solve your problem remotely.
- If the above methods cannot solve your problem, you can send the robot for repair after verifying with the after-sales staff. You need to pay for the postage when you send the product to DEEP Robotics. After DEEP Robotics receives the problematic product in need of repair, the product will be tested to determine the problem and responsibility.
- If the problem is caused by defects in quality of the product itself, DEEP Robotics will be responsible for the testing fee, material fee, labor fee and your postage.
- If the product does not meet the conditions of free repair after testing, you can choose to pay for repair, and the testing fee, material fee, labor fee as well as the postage for sending back shall be paid by you. You can also choose not to repair and to send product back to you, and the postage and insurance fee shall be paid by you.
- Considering environmental protection and safety, please do not send seriously damaged batteries. If you have sent, DEEP Robotics will scrap such batteries and will not return them back to you.
- If you provide an incorrect delivery address which results in non-delivery or rejection by the recipient, the adverse consequences and losses shall be borne by you.
- To ensure your rights and interests, when you sign for the after-sales product sent by DEEP Robotics, please check carefully whether the product is intact. If there is any abnormality, please immediately take video or photos on the spot and contact DEEP Robotics to get the solutions. If there are unresolved after-sales problems, please also contact DEEP Robotics immediately, otherwise it is deemed as the end of this after-sales service without dispute.
  - DEEP Robotics reserves the right of final explanation of the after-sales terms.
  - Please contact us if you have any questions before acquiring after-sales service.
  - The after-sales terms are only applicable in Chinese mainland, and the after-sales policies of other countries or regions shall be subject to local laws.

## **Disposal**

- The disposal of waste robots and components shall be carried out in accordance with the corresponding national laws and regulations on the recycling of wasted electric appliance and electronic products.
- Especially the use or disposal of lithium batteries contained in robots shall be subject to national laws and regulations regarding the disposal of batteries.

## **FCC**

### **FCC Statement**

Please take attention that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules.

### **Operation is subject to the following two conditions:**

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

**For Quadruped Robot:** This robot complies with FCC radiation exposure limits set forth for an uncontrolled environment. This robot should be installed and operated with minimum distance 20cm between the radiator of the robot & your body.

### **EU Conformity Statement**

- Hereby, [Hangzhou Yunshenchu Technology Co., Ltd.] declares that the radio equipment is in

compliance with Directive 2014/53/EU.

- **EU Declaration of Conformity:** <https://deep-website.oss-cn-hangzhou.aliyuncs.com/app/EU%20declaration-X30-20251227.pdf>.

## RF Exposure Information

- This Quadruped Robot has been tested and meets applicable limits for Radio Frequency (RF) exposure.
- This Quadruped Robot must be installed and operated in accordance with the provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

## Power:

- 2.4GHz:2412MHz to 2472MHz:16.93dBm
- 5.8GHz:5745MHz to 5825MHz:13.31dBm

RF	TYPE	Operation Frequency
2.4G SRD	Receiver	2411-2466MHz
5.8G SRD	Receiver	5750-5820MHz

## Statement

- This manual is the information asset owned by Hangzhou Yunshenchu Technology Co., Ltd. (hereafter referred to as “DEEP Robotics”) and any reprinting of part or all of this manual is strictly prohibited without the permission of DEEP Robotics.
- This manual explains the basic components, transport and storage, specific operations, exception handling, and technical specifications of the quadruped robot “Jueying X30”. Be sure to read and fully understand this manual before operating the robot.
- Basic information on safe use is described in detail in the “Reading Tips”, so be sure to read this part thoroughly to ensure proper use.
- The diagrams and photographs in this manual are representative examples and may differ in detail from the product purchased.
- This manual may be modified as appropriate for product improvements, specification changes, etc.
- The contents of this manual do not rule out the possibility of error or omission. If this manual is damaged or lost or if you have questions about the contents of this manual, please contact us promptly.
- Failure caused by unauthorized disassembly or modification of the product by the customer is not covered by our warranty. See “Service and Warranty” for details.

## CONTACT INFORMATION

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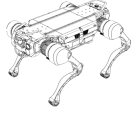


## FAQs

- **How long does it take to charge the Jueying X30?**
  - The charging time is approximately 2.5 to 3 hours.
- **What is the Ingress Protection (IP) rating of the Jueying X30?**
  - The Jueying X30 has an IP67 rating.
- **Where can I find more resources for the Jueying X30?**
  - You can visit DEEP Robotics' corporate website: <http://www.deeprobotics.cn/>.
- **What should I do if the robot overheats?**
  - If the robot detects an overtemperature condition, it may automatically reduce activity or shut down. Allow the robot to cool down before resuming operation.
- **What is the minimum safe distance from the robot during operation?**
  - The robot should be installed and operated with a minimum distance of 20cm between the radiator of the robot and your body, as per FCC guidelines.
- **Is it normal for a robot to stop moving on its own?**
  - The motor or driver may be overtemperature protected. Please wait 10 minutes and try again. If you still can't control the robot to move, please check if the battery is fully charged, if the hard emergency stop button is turned off (the button lights green).
- **What if there is no response to the commands from APP after connecting?**
  - First, confirm if the hard emergency stop is off (the button lights green). If the APP is still unable to control the robot, please restart the robot.
- **Can the robot continue to be used when its body or legs are askew after standing up?**
  - At this time, do not continue to click [Torque Control]. Please immediately trigger soft emergency stop to make the robot lie down. Then shut down and restart to try to control the robot to stand up again. If still abnormal, please contact the after-sales staff.
- **What terrain can the robot adapt to?**
  - The robot can be applied to gently uneven ground such as flat land and grass, and can also climb complex terrain such as stairs and slopes, but please avoid operating and using the robot in extreme terrain (such as too smooth surfaces such as ice, sharp or undulating terrain, near high edges, etc.).
- **What should I do if the robot suddenly falls, stumbles, or has an abnormal gait without being disturbed by external forces?**
  - Please press the soft emergency stop in time, and click [Save Data] at the Settings page of the APP to save the abnormal motion data, and then restart the robot. If it does not return to normal after restarting, please contact after-sales service for help.
- **What if encountering a problem that cannot be solved even after consulting this manual?**
  - Click [Save Data] at the Settings page of the APP and contact the after-sales staff in time.

## Documents / Resources

DESP Robotics



Jueying X30  
User Manual V2.0.5-1(2025.12.27)

## Jueying X30 Global Quadruped Robot Leader

User Manual · 2BFQD-JUEYINGX30, 2BFQDJUEYINGX30, Jueying X30 Global Quadruped Robot Leader, Jueying X30, Global Quadruped Robot Leader, Quadruped Robot Leader, Robot Leader, Leader

Published: April 24, 2026

### Related Topics

[Leader](#)