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Website: www.elephantrobotics.com

Elephant Robotics 大象机器人

大象协作机械臂-M5Stack版

myCobot 320 M5

六轴协作机器人

6-Axis Collaborative Robot

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⚠ Warning

Before using myCobot 320 M5, please read all instructions and cautionary markings in this manual

1. Do not expose the product to rain or moisture to reduce fire or shock hazard.
2. Do not place the product in or near fire.
3. Do not leave the product in a car in hot or humid weather.
4. Do not disassemble, crush or pierce the product.
5. Do not expose the product to excessive shock such as dropping from a high place.
6. Do not expose the product to high temperatures above 45 °C .

⚠ Attention

Regarding the operation and secondary development of myCobot 320 M5, please read and download Gitbook before using it.

Official Website: https://www.elephantrobotics.com/en/support-320-M5-en/

Model: myCobot-320-M5

myCobot 320 M5

Highly Cost-Effective

M5Stack Basic

6-Axis Collaborative Robot

myCobot 320 M5 is a product belonging to the "myCobot 320 series". It uses a M5Stack-Basic, ESP32-Pico and M5Stack-Atom controller，it can use RoboFlow visual programming software. It is a machine "assistant" developed by Elephant Robotics for makers and researchers.

The myCobot 320 M5 has a weight of 3.3kg, a load of 1kg, and a working radius of 350mm. The volume is relatively small but powerful. It is easy to operate, can work in collaboration with people, and work safely. It has three advantages: ease of use, safety and economy, and it is a cost-effective choice.

Using up to three ESP32 main control cores, multi-core collaboration is more efficient

- 240MHz dual core. 600 DMIPS, 520KB SRAM. Wi-Fi, dual mode Bluetooth
- Supports the development of custom user interface

Easy to operate, open source and easy to use

- Drag to teach, users can quickly get started.
- Support development systems such as ROS/moveIt and RoboFlow operating software independently developed by Elephant Robotics.

High configuration, powerful performance

- The use of brushless DC servos can achieve a repeat positioning accuracy of ±0.5mm.
- The base and the end are equipped with installation interfaces, which are suitable for the development of various peripheral products and equipment.

Economical and applicable, super cost-effective

- The standard 8-hour work system can replace repetitive and standard work.
- Cost effective for reducing costs and increasing efficiency for scientific research that requires high performance and low cost.

Integrated design, safe collaborative operation

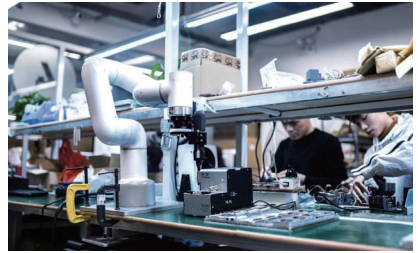
- The exquisite structural design makes it possible to make full use of the space and perfectly blend into the actual environment.
- Equipped with the anti-collision detection function based on the accurate dynamic model, so that it can work safely with people.

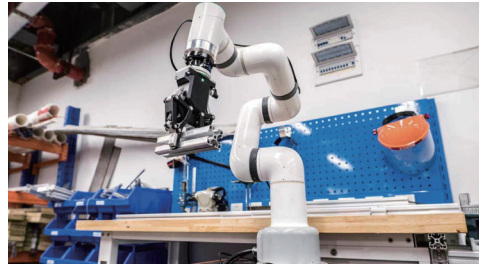
Unique industrial design

- Integrated design, the overall structure is compact, and the net weight is 3.3kg.
- Modular design, few spare parts, low maintenance cost, quick disassembly and replacement.

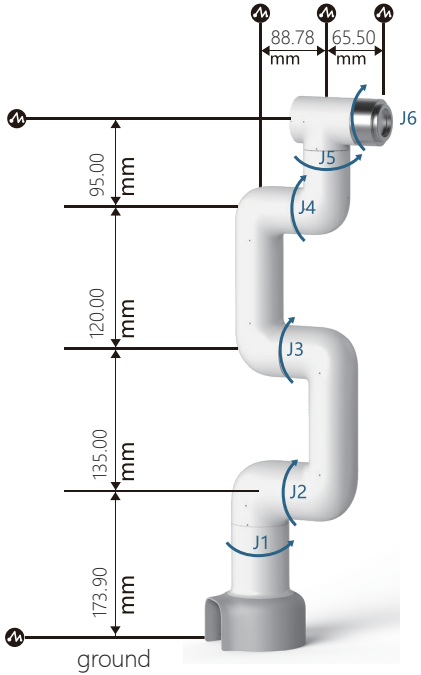
myCobot 320 - Design Prototype - Elephant Robot® C Series Robot

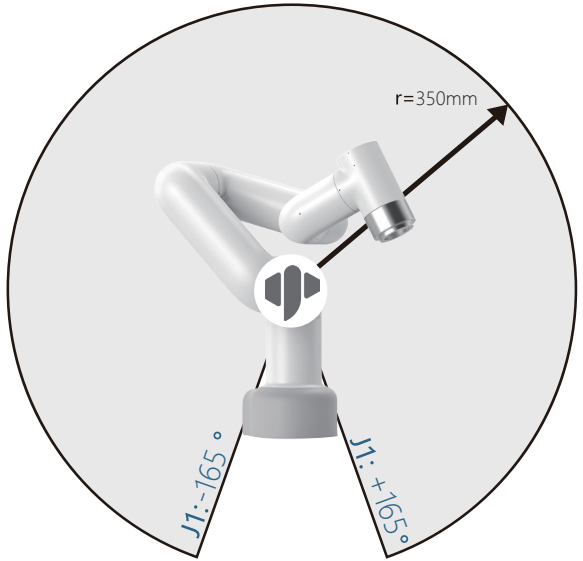
The design prototype of myCobot 320 is from All-in-one Robot launched by Elephant Robot in China in 2018. As the first integrated collaborative robot in China, it has won the 2019 CAIMRS Industrial Robot Innovation Award and 2019 High-tech Robot Annual "Innovation Technology Award", and has been also sold to more than 30 countries at home and abroad, receiving unanimous praise and recognition from the factories of the world's top 500 enterprises.





myCobot 320 M5- Size and Working Range Diagram





Parameter

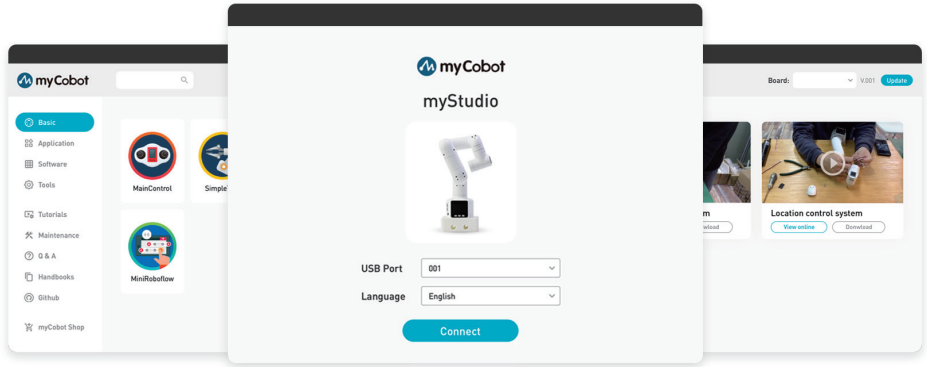
Robot arm Parameter	
Model	myCobot 320-M5 2022
Degree of Freedom	6
Payload	1kg
Working range	350mm
Repeatability	±0.5mm
Weight	3.3kg
Power Input	24V，120W
Working Temp.	0-45°
Communication	Type-C

Software Parameter	
System Version	miniRobot
ROS/Python	Requires a computer
Blockly Visual Programming	Requires a computer
Camera	Requires a computer
ModelBus RTU	Requires a computer

Electric parameter	
SOC	ESP32
CPU	240MHz dual core.
Bluetooth/wireless	Yes
USB	Type - C
IO Port	INT x6; OUT x6
Emergency Stop Button	Yes
Teach pendant/ Keyboard/Mouse	Requires a computer

Control Board Pin Map

myStudio



myStudio is a one-stop platform for robots

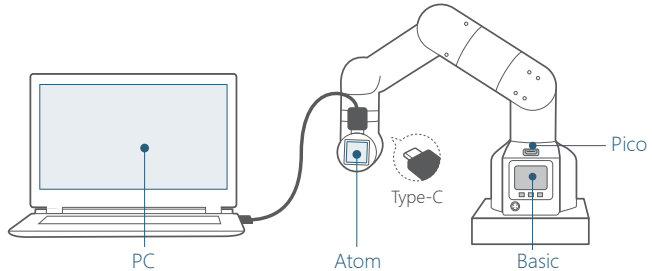
myStudio integrates myCobot's software and various materials.
The main functions of myStudio are: 1) Update the firmware; 2) Provide video tutorials on how to use the robot; 3) Provide maintenance and repair information (such as video tutorials, Q&A, etc.).

Please download the latest version of myStudio to use.

The download link is as follows:
Officail website: https://www.elephantrobotics.com/en/support-320-M5-en/
Github: https://github.com/elephantrobotics/MyStudio/

Burn Table

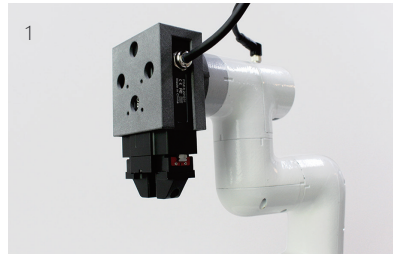
Development environments that support the secondary development of myCobot 320 are: myBlockly, ROS, python, etc.

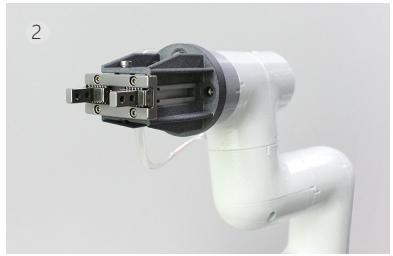


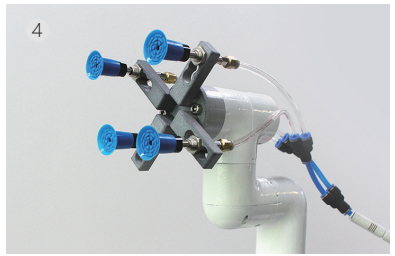
Development Environment	Basic Firmware	Pico Firmware	Atom Firmware
Default Program	miniRobot	picoMain	atomMain
Myblockly	miniRobot	picoMain	atomMain
RoboFlow Industrial Programming Software	miniRobot	picoMain	atomMain
Python	miniRobot	picoMain	atomMain
ROS Development	miniRobot	picoMain	atomMain
BlueTooth	miniRobot	picoMain	atomMain

myCobot 320 Accessory

Elephant Robotics are targeted at robotic collaboration applications, making "my-series" product line.
For new information about the accessories, Follow us on Shopify and Twitter.
Shopify: https://shop.elephantrobotics.com/
Twitter: @cobotMy
Facebook: myCobot







1. Electric parallel gripper
2. Air parallel gripper
3. Adptive gripper
4. Vacuum suction cups

⚠ 警告

在使用本产品之前，请阅读本手册中所有说明及警告提示。

- 为避免火灾或电击危险，请勿将产品暴露在雨中或潮湿的地方。
- 请勿将产品放在火中或靠近火处。
- 请勿将本产品放置或使用在炎热潮湿的地方。
- 请勿暴力拆卸本产品。
- 请勿将产品暴露在过度的冲击下，如从高处跌落。
- 不要将产品暴露在超过60℃(140℉)的高温下。

⚠ 开机必读

本册为myCobot 320 M5-树莓派版产品画册

关于本产品的操作使用及二次开发，请先在大象机器人官网阅读并下载Gitbook相关指导说明.

下载链接：https://www.elephantrobotics.com/mycobot-320-M5-cn/

Model: myCobot-320-M5

myCobot 320 M5

Highly Cost-Effective

M5Stack&ESP32

六轴协作机器人

myCobot 320 M5 是隶属"myCobot 320系列"产品，采用M5Stack-Basic, ESP32-Pico and M5Stack-Atom多核心协同控制，可搭载电脑开发myBlockly可视化编程软件、Python开发环境、ROS开发环境，是大象机器人面向创客及科研人员开发的机器"助手"。

myCobot 320 M5 本体重量3.3kg，负载1kg，工作半径350mm，体积相对小巧但功能强大， 操作简单、能与人协同、安全工作。作为大象机器人首款万元级机械臂，具有易用性、安全性和经济性三大优势，是高性价比之选。

内嵌Arduino生态，开发无限可能

- 240MHz dual core. 600 DMIPS, 520KB SRAM. Wi-Fi, dual mode Bluetooth。
- 支持3颗实体按键，2.0"@320*240 ILI9342C IPS panel, maximum brightness 853nit。

操作方便，开源易用

- 拖动示教，用户可迅速上手操作。
- 支持ROS/moveIt等开发系统及大象机器人自主研发的roboflow操作系统。

高配置，性能强大

- 采用无刷直流舵机，可以达到±0.5mm的重复定位精度。
- 底座及末端带有安装接口，适用于各种周边产品设备开发。

经济适用，超高性价比

- 标准8小时工作制，能够替代重复性、标准性的工作。
- 万元级机械臂，有效为需要高性能＆低成本的科研降本增效。

一体化设计，安全协同作业

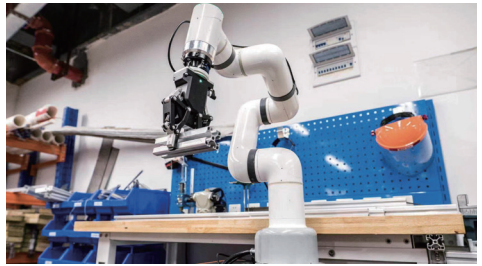
- 精巧结构设计使其能够充分利用生产空间，完美融入生产环境。
- 兼备基于精确动力学模型的防碰撞检测功能使其能与人安全协同作业。

独特工业设计

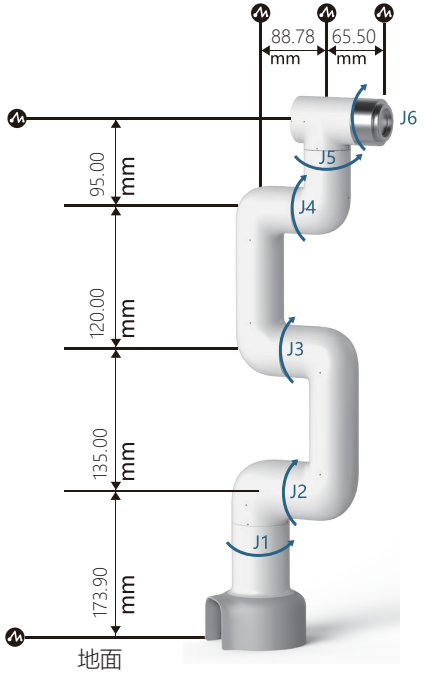
- 一体化设计，整体机身结构紧凑，净重3kg。
- 模块化设计，备件少、维护成本低，可快速拆卸更换。

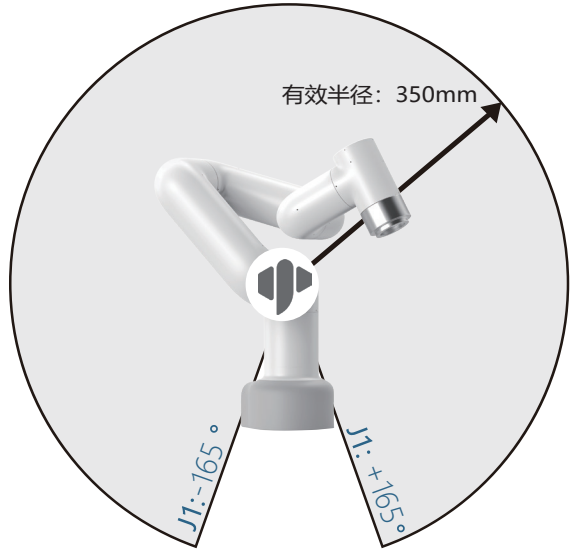
myCobot 320设计原型-大象机器人C系列all-in-one机器人

myCobot 320系列的设计原型为大象机器人2018年推出的国内首款 all-in-one 一体式协作机器人。作为国内首款一体式协作机器人，它曾获得2019CAIMRS工业机器人创新奖，2019高工机器人年度"创新技术奖"，远销海内外30多个国家并备受数家来自世界500强名企的一致认可与好评。



尺寸与工作范围图





产品参数

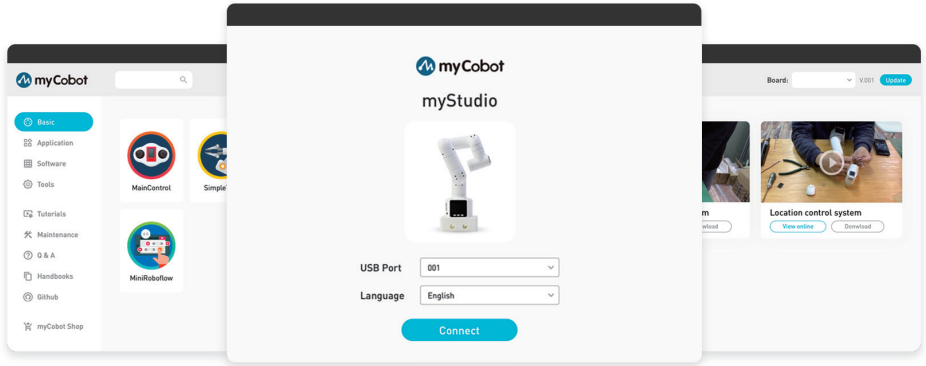
机械臂参数	
型号	myCobot 320-M5 2022
自由度	6
有效负载	1kg
工作半径	350mm
重复定位精度	±0.5mm
重量	3.3kg
电源输入	24V，120W
工作温度	0-50°
通信	Type-C

电子参数	
CPU	ESP32
蓝牙/无线	有
显示屏幕	2寸
IO 接口	输入 x6；输出x6
急停开关	有
实体按键	x3
示教器或键盘鼠标	可选

软件平台	
系统版本	miniRobot
ROS/Python	需要搭配PC
Blockly 图形化编程	需要搭配PC
搭载摄像头	需要搭配PC
ModelBus RTU	需要搭配PC

引脚图

myStudio



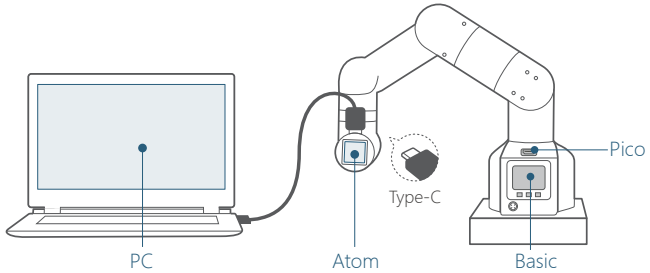
myStudio是一个一站式的机器人的使用平台。
myStudio整合了myCobot & myCobot 320的软件资源及各类资料，主要功能为：
1）下载更新固件；2）查看机器人使用视频教程；3）维护和维修方面的信息（如视频教程、Q&A等）

请下载最新版的myStudio进行使用

软件下载链接如下：
1、官网：https://www.elephantrobotics.com/support/
2、Github：https://github.com/elephantrobotics/MyStudio/

固件烧录

可支持myCobot 320 M5进行二次开发的开发环境有：myBlockly 、Robo-Flow、ROS、python等



Development Environment	Basic Firmware	Pico Firmware	Atom Firmware
Default Program	miniRobot	picoMain	atomMain
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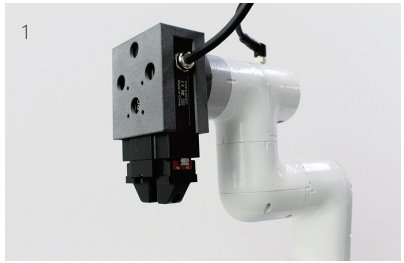
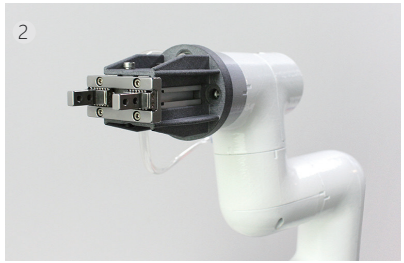
RoboFlow Industrial Programming Software	miniRobot	picoMain	atomMain
Python	miniRobot	picoMain	atomMain
ROS Development	miniRobot	picoMain	atomMain
BlueTooth	miniRobot	picoMain	atomMain

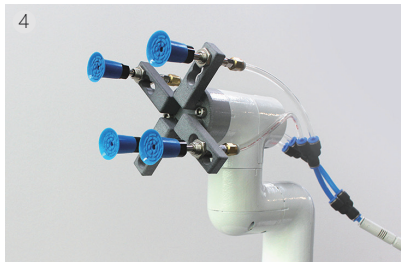
myCobot 320产品配件

大象机器人面向机械臂扩展应用，打造"my-系列"产品线。
相关配件的上新，请关注官方淘宝店铺。店铺名称：大象机器人

1. 电动夹爪
2. 气动夹爪
3. 自适应夹爪
4. 模块化吸泵







产品保修卡

用户信息 (必填)：

购买人 _____ 订单号 _____ 联系电话 _____

地址 _____ 物流签收日期 _____

产品问题描述 (必填)：_____

如需退换货，请事先联系客服确认退回相关信息。待客服确认后，填写此卡并将这一页随同产品一起寄回。
注：我司在法律允许范围内保留对本产品保修卡解释和修改的权利。

- 产品自签收起7日内未拆封可无理由退换，因产品退换所产生的费用及其他风险需由客户承担。
- 用户如需产品保修服务需提供相应的购买单据及产品保修卡作为保修凭证。
- 凡属于正常使用下由于产品本身质量问题引起的硬件故障，保修期内大象机器人给予免费维修。
- 保修起始日期为产品购买日或物流签收日。
- 维修更换的配件归大象机器人所有，必要时会收取适当的成本费用。

以下为详细的配件保修服务说明(如需以下产品售后服务，请事先联系客服沟通并确认相关信息)

舵机	
保修期限	保修服务
≤1个月	我司免费提供一个新舵机并承担寄送运费(仅一次)
1-3个月	我司免费提供一个新舵机，由客户自行承担运费(仅一次)
≥3个月	客户需自己重新购买

电子件	
保修期限	保修服务
≤3个月	由用户拆卸后寄回，我司免费更换并承担往返运费(仅一次)
3-6个月	由用户拆卸后寄回并承担往返运费，我司免费更换(仅一次)
≥6个月	客户需自己重新购买

结构件，含外壳部分	
保修期限	保修服务
≤1年	我司免费提供新的零件，由客户自行承担运费(仅一次)
≥1年	客户需自己重新购买

特别说明: 在交付产品的保修期内，本公司仅对正常使用机器人时发生的故障进行免费修理。
但在以下情况下， 将对客户收取修理费用(即使在保修期内):

(1) 因不同于手册内容的错误使用以及使用不当而导致的损坏或故障
(2) 客户未经授权进行拆卸导致的故障
(3) 属于外壳等部件自然的消耗，磨损及老化
(4) 因调整不当或未经授权进行修理而导致的损坏
(5) 因地震、洪水等自然灾害导致的损坏
因此，请严格遵照本手册及相关手册的指示对机器人进行操作。

WARRANTY CARD

Customer Information (Required):

Purchaser _____ Order No. _____ Phone _____

Address _____ Logistics Receipt Date _____

Product problem description(Required):

_____

If you need to apply for warranty service, please contact our customer service to confirm the detailed information. After confirmation, please fill in the card and send it back together with the product and the attached invoice. Note: Our company reserves the right to explain and modify the warranty card of this product within the scope of the law.

- Return service is limited to goods not opened within 7 days after the receipt date of logistics of the products. The freight or other risks incurred in return shall be borne by the customer.
- Customers should provide the purchasing invoice and warranty card as the warranty certification when a warranty is being asked.
- Elephant Robotics will be responsible for the hardware faults of products caused by the normal using during the warranty period.
- The warranty period starts from the date of purchase or the receipt date of the logistics.
- The faulty parts from the products will be owned by Elephant Robotics, and the appropriate cost will be charged if necessary.

If you need to apply for warranty service, please contact our customer service first to confirm the detailed information.

Sever motor	
Warranty Period	Warranty Services
≤1 months	Elephant Robotics offers a free new servo motor and bear the freigh.
1-3 months	Elephant Robotics offers a free new servo motor, customs shall bear the freight.
≥3 months	Customers need to buy it themselves.
Electrical Parts	
≤3 months	Customers need to send it back after disassembly, Elephant Robotics shall send a new one for free and bear the freight out and home.
3-6 months	Customers need to send it back after disassembly and bear the freight out and home, Elephant Robotics shall send a new one for free.
≥6 months	Customers need to buy it themselves.
Structure Parts, including Shell Parts	
≤1 year	Elephant Robotics offers free new components once, customs shall bear the freight.
≥1 year	Customers need to buy it themselves.

During the warranty period of the delivered product, the company only repairs the malfunctions that occur during normal use of the robot for free. However, in the following cases, the customer will be charged for repairs (even during the warranty period):

- Damage or malfunction caused by incorrect use and improper use different from the contents of the manual.
- Failure caused by unauthorized disassembly by the customer.
- Damage caused by improper adjustment or unauthorized repairs.
- Damage caused by natural disasters such as earthquakes and floods.

Therefore, please strictly follow the instructions in this manual and related manual to operate the robot.