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 **Elephant Robotics 大象机器人**

小象机械臂

 **myCobot**

世界最小最轻的六轴协作机器人

The World's Smallest 6-Axis Collaborative Robot

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Warning

BEFORE USING MYCOBOT 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 60 °C (140 °F).

Attention

 Regarding the operation and secondary development of myCobot, please read and download the related files before using it.

- 1、Gitbook
- 2、User Manual
- 3、Development Manual

Official Website: <https://www.elephantrobotics.com/en/myCobot-en/>



World's Smallest 6-Axis Collaborative Robot

myCobot is the world's smallest and lightest six-axis collaborative robot, jointly produced by Elephant Robotics and M5STACK. With a weight of 850g, a payload of 250g and an arm length of 350mm, myCobot is compact but powerful, can carry on the secondary development according to the demands of users to achieve personalized customization. myCobot can not only be matched with a variety of end effectors to adapt to different kinds of application scenarios but also support secondary development of multi-platform software to meet the needs of various scenarios such as scientific research and education, smart home, light industry and commercial applications.



Unique industrial design, extremely compact

myCobot is an integrated modular design and only weighs 850g which is easy to carry. Its overall body structure is compact with less spare parts and can be quickly disassembled and replaced to realize plug and play.



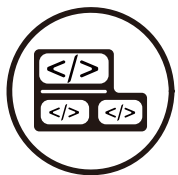
High configuration & Equipped with 2 Screens

myCobot contains 6 high-performance servo motors with fast response, small inertia and smooth rotation. The body carries two display screens supporting fastLED library to show the expanded application scene more easily and clearly.



Lego Connector & Thousands of M5 Ecological Application

The base and end of myCobot are equipped with Lego Connector, which is suitable for the development of various miniature embedded equipment. Its base is controlled by M5STACK Basic, and thousands of application cases can be used directly.



Bloky Programming & Supporting Industrial ROS

Using myBlockly visual programming software, programming myCobot is simple and easy for everyone. You can also use RoboFlow, software of industrial robots from Elephant Robotics, supporting multiple functional modules Arduino + ROS open source system.



Track Recording & Learn by hand

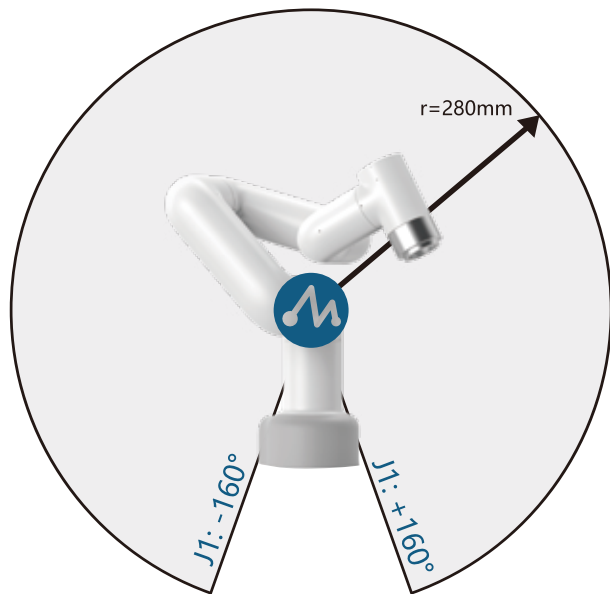
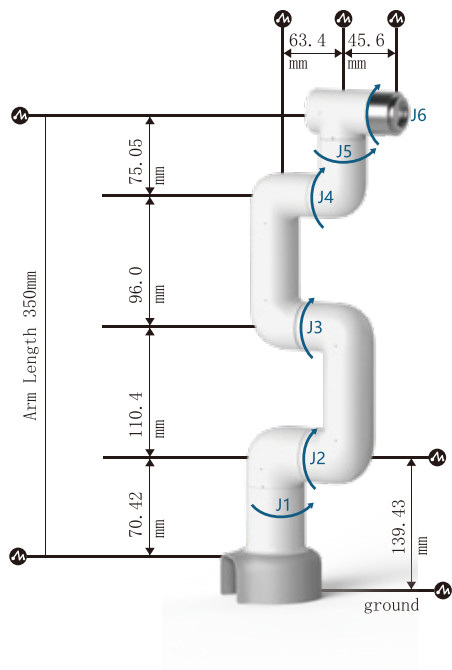
Get rid of the traditional point saving mode, myCobot supports drag trial teaching to record the saved track and can save up to 60mins different tracks, which makes it easy and fun for new players to learn.

myCobot - Design Prototype - Elephant Robot®C Series Robot

The design prototype of myCobot 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 - Size and Working Range Diagram



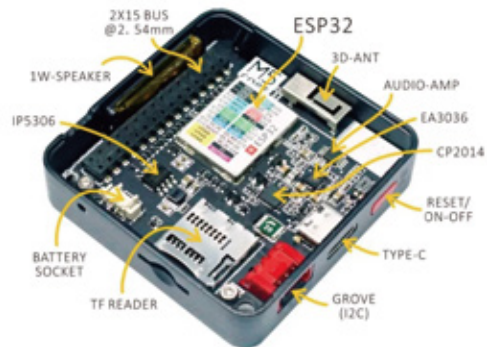
Parameter

Degree of Freedom	6
Payload	250g
Arm span	350mm
Working radius	280mm
Repeatability	$\pm 0.5\text{mm}$
Weight	850g
Power input	DC 8.4-1.4V 40W
Working temp.	$-5 \sim 45^\circ$
Communication	USB/Type-C

Sub-Control board parameters	
Model	M5STACK Atom
Micro-processor	ESP32, 240MHz Dual-core 520KB SRAM
Flash	4MB
Installation	Behind Joint 6
LED Display	WS2812C 2020 X25
Software	Not open source, Firmware Burn

Main control board parameters	
Model	M5STACK Basic
Micro-processor	ESP32, 240MHz dual core, 520KB SRAM
Flash	16MB
wireless	2.4g 3D antenna Bluetooth
Installation	Center of Base
Display	320x240 Full-color TFT LCD Brightness:853nit
Speaker	1W-0928
IO Interface	PIN (G1, G2, G3, G16, G17, G18, G19, G21, G22, G23, G25, G26, G35, G36)
Software	Built-in track recording Built-in correction procedures Arduino myBlockly RoboFlow

M5STACKt Control Board Pin Map



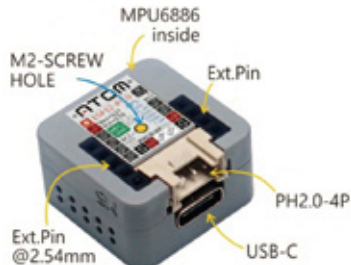
M5 Basic side pin diagram1



M5 Basic side pin diagram1



Atom diagram



Atom pin diagram

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.

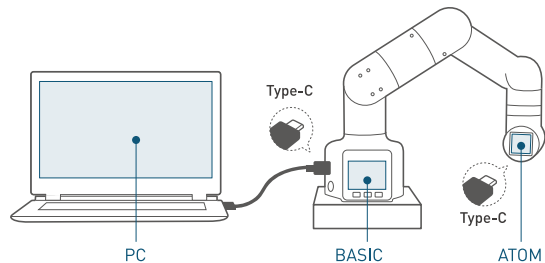
The download link is as follows:

Official website: <https://www.elephantrobotics.com/myCobot/>

Github: <https://github.com/elephantrobotics/MyStudio/>

Burn Table

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



Development Environment	Library on PC	Basic Firmware	Atom Firmware
Default Program	N/a	mainControl	atomMain
Visual Programming	myBlockly	myBlockly	atomMain
RoboFlow Industrial Programming Software	RoboFlow	Transponder	atomMain
Arduino Maker!	Arduino IDE + M5Stack Lib + MycobotBasic Lib	All Exapmles	atomMain
API on Desktop	Python/ C+	Transponder	atomMain
ROS Development	ROS	Transponder	atomMain
USB/TxRx0(G1/G3)	Read Protocol	Transponder	atomMain
BlueTooth	Read Protocol	BT_Transponder	atomMain
phoneApp	Mobile phone Android/iPhone	BT_Transponder	atomMain

⚠ 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°C(140°F)的高温下。

⚠ 开机必读

本册为myCobot小象机械臂产品画册

- ⚠ 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相关指导说明：
1. Gitbook; 2. 用户手册; 3. 开发引导手册

下载链接：<https://www.elephantrobotics.com/myCobot/>



世界最小最轻的六轴协作机器人

myCobot小象机械臂由大象机器人和M5STACK联合出品，是世界最小最轻的六轴协作机器人，可根据用户的需求进行二次开发，实现用户个性化定制，是生产力工具也是想象力边界的拓展工具。

myCobot小象机械臂自重850g，有效载荷250g，臂长350有效280mm；体积小但功能强大，既可搭配多种末端执行器适配多种应用场景，也可支持多平台软件的二次开发，满足科研教育、智能家居、轻工业及商业应用等各种场景需求。



独特工业设计，极致小巧

一体化设计，整体机身结构紧凑，净重仅850g，十分便于携带
模块化设计，备件少、维护成本低，可快速拆卸更换，实现即插即用



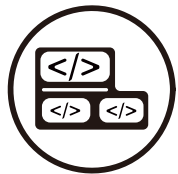
高配置，搭载两块显示屏

内含6个高性能伺服电机，响应快，惯量小，转动平滑
机身携带两块显示屏，支持fastLED库，便于拓展应用交互输出



乐高接头，M5STACK数千应用生态

底座以M5STACK Basic作为主控，数千应用案例可直接使用
机器人底座与末端带有乐高科技件接口，适用于各项微型嵌入式设备开发



图形化编程，支持工业机器人软件

采用myBlockly可视化编程软件，掌上自如编程，操作简单易上手
兼容大象工业机械臂操作软件RoboFlow，支持Arduino + ROS开源系统

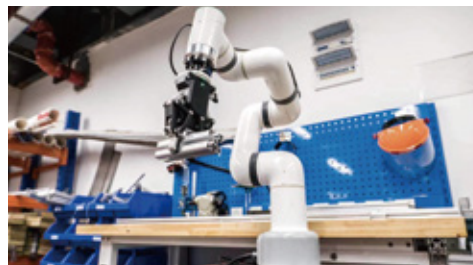
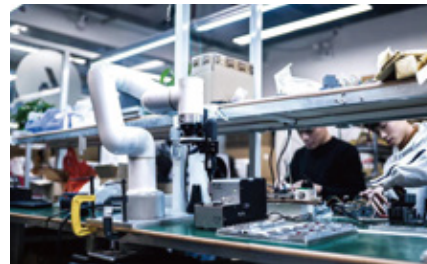


轨迹录入，点位保存

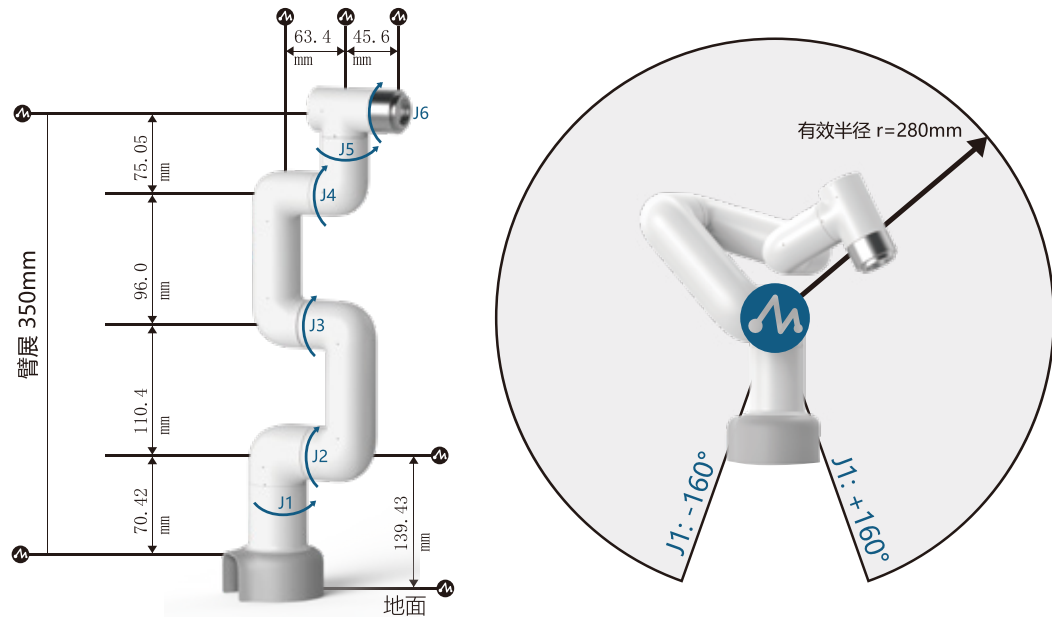
myCobot支持拖动试教，记录已经存入的轨迹
摆脱传统的路径点保存模式，可最多保存60mins不同的轨迹

myCobot小象机械臂设计原型-大象机器人C系列all-in-one机器人

myCobot小象机械臂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。



myCobot小象机械 尺寸与工作范围图



产品参数

自由度	6
有效负载	250g
臂展	350mm
工作半径	280mm
重复定位精度	±0.5mm
重量	850g
电源输入	DC 8.4-1.4V 40W
工作温度	-5 ~ 45°
通信	USB/Type-C

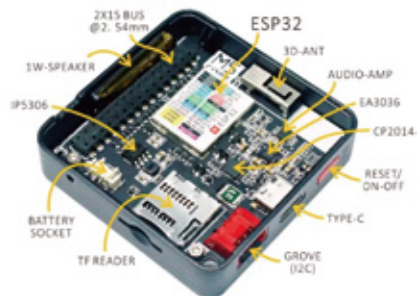
副控板参数

型号	M5STACK Atom
芯片	ESP32, 240MHz Dual-core 520KB SRAM
Flash	4MB
安装位置	第六关节后方
LED显示	WS2812C 2020 X25
软件	非开源, 可烧录固件

主控板参数

型号	M5STACK Basic
芯片	ESP32, 240MHz 双核, 520KB SRAM
Flash	16MB
无线	支持2.4g 3D 天线和蓝牙
安装位置	底座中心
屏幕	320x240 全彩 TFT LCD 亮度:853nit
扬声器	1W-0928
IO口	PIN (G1, G2, G3, G16, G17, G18, G19, G21, G22, G23, G25, G26, G35, G36)
软件	自带轨迹录入程序 自带矫正程序 Arduino myBlockly RoboFlow

引脚图



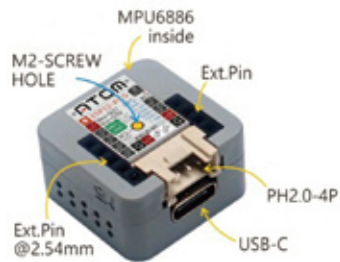
Basic 侧面引脚图1



Basic 侧面引脚图2



Atom 介绍图



Atom 功能引脚图

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）

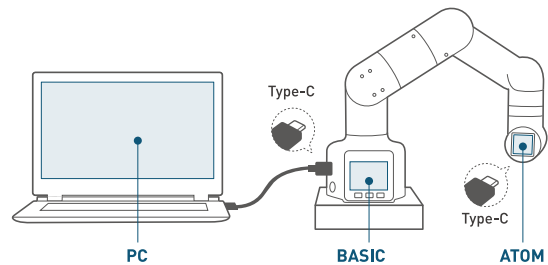
请下载最新版的myStudio进行使用

软件下载链接如下：

- 1、官网：<https://www.elephantrobotics.com/myCobot/>
- 2、Github：<https://github.com/elephantrobotics/MyStudio/>

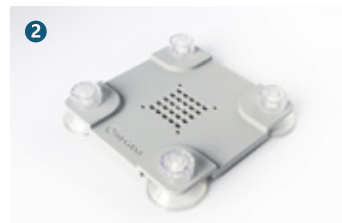
固件烧录

可支持myCobot小象机械臂进行二次开发的开发环境有：myBlockly、RoboFlow、Arduino、ROS、python等



开发使用环境	PC所需Library	Basic所需固件	Atom所需固件
默认程序 Default Program	N/a	mainControl	atomMain
myBlockly 可视化编程 Visual Programming	myBlockly	myBlockly烧录器 由M5提供	atomMain
RoboFlow 工业级可视化编程软件 Industrial Programming Software	RoboFlow库	Transponder文件	atomMain
Arduino 创客! Maker!	Arduino IDE + M5Stack Lib 库 + MycobotBasic Lib 库	各类程序自定义 All Exapmles	atomMain
API 开发软件接口 on Desktop	Python/ C+	Transponder文件	atomMain
ROS Development ROS 开发	ROS库	Transponder文件	atomMain
通信协议 – USB/TxRx0(G1/G3)	通信协议阅读 Read Protocol	Transponder文件	atomMain

myCobot产品配件

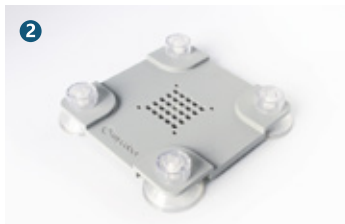


- 1 自适应夹爪
- 2 平面底座
- 3 摄像头法兰
- 4 吸泵
- 5 G型底座
- 6 笔夹

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



myCobot Accessory



- 1 Adaptive Gripper 2 Flap Base 3 Camera Flange 4 Suction Pump 5 G Base
6 Pen Gripper

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

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 (M5 硬件)

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.

servo motor

Warranty Period Warranty Services

≤1 months	Elephant Robotics offers a free new servo motor and bear the freight.
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 (M5 Hardware)

≤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.

