Elephant Robotics 大象机器人

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小象协作机械臂

myCobot 320 M5

六轴协作机器人

6-Axis Collaborative Robot

myCobot 320 M5

Highly Cost-Effective

⚠ Warning

Before using myCobot 320 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)

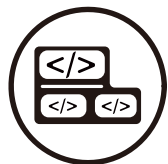**Elephant Robotics** | M5STACK

6-axis collaborative robot

myCobot 320 M5 is an advanced version of myCobot products, which is mainly suitable for makers and scientific researchers. It can carry out secondary development according to the needs of users and realize personalized customization of users. The overall sophisticated design, all-in-one design, has three advantages of ease of use, safety and economy, and is a cost-effective choice.

The myCobot 320 M5 has a body weight of 3kg, a payload of 1kg, and a working radius of 320mm. The volume is relatively small but powerful. It is easy to operate and can work in coordination with people and work safely.

Convenient operation, open source and easy to use

With the help of drag teaching and myblockly simple visual programming, users can quickly get started.
Support development systems such as ROS/moveIt and roboflow operating software which independently developed by Elephant Robotics.

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.

Powerful performance, equipped with two displays

The use of brushless DC servos can achieve a repeat positioning accuracy of ±0.5mm.
The body is equipped with two displays, supporting M5 ecological applications, effectively expanding the collaborative application space.
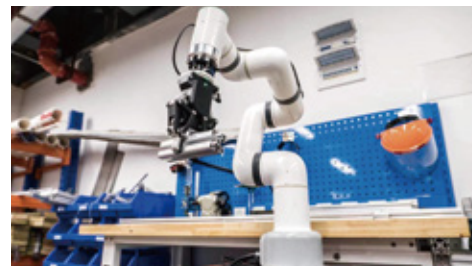
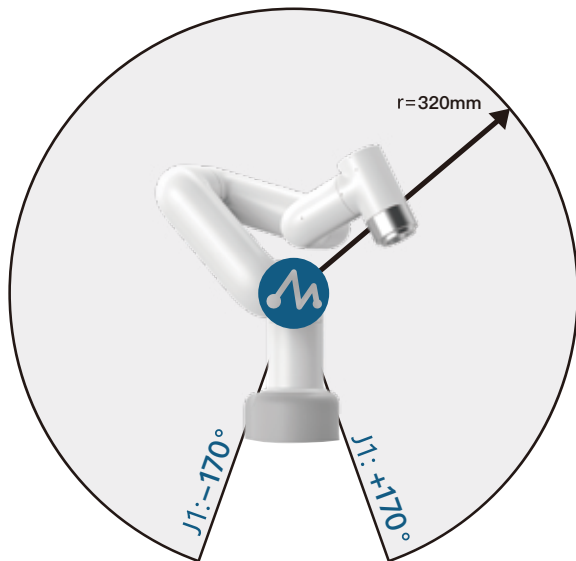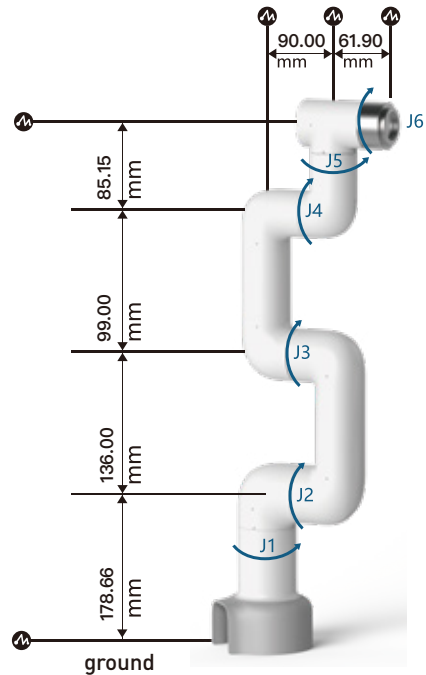### Integrated design, safe and collaborative operation

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.

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.
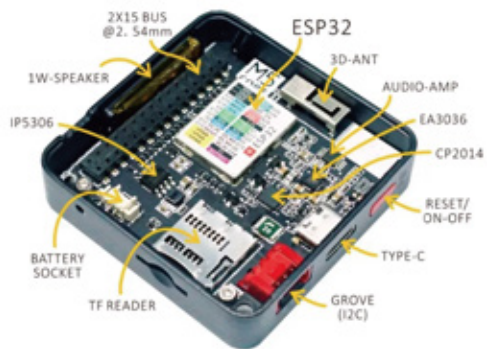
myCobot 320 - Size and Working Range Diagram

90.00 mm 61.90 mm

85.15 mm

99.00 mm

136.00 mm

178.66 mm

ground

r=320mm

J1:-170°   J1:+170°

J1 J2 J3 J4 J5 J6

Parameter

Product	myCobot 320
model	mycobot-320-M5
payload	1kg
reach	320mm
weight	3kg
repeatability	±0.5mm
DOF	6
IP Level	IP42
Material	Industrial Nylon
Working Condition	0~50°C
Adapter power supply	110~220V AC
Joints range	J1 : +/- 170° J2 : +/- 160° J3 : +/- 160° J4 : +/- 160° J5 : +/- 170° J6 : +/- 175°
Noice	<85 dB
Power Supply	24V 5A; 120W
Max End-speed	0.7m/s

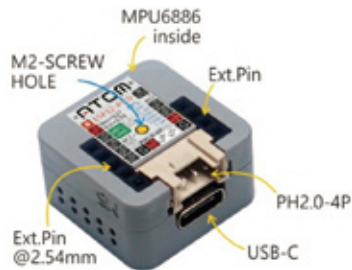|	
Tool IO	12V/ GND Digital-INPUT X2 Digital-OUTPUT X2 485Bus AB
Base IO	Digital-INPUT x3 Digital-OUTPUT x3
Communication (Base)	Ethernet Port typeC-Port
Max Rotational Speed	180°/s
Servo-Gear Set	Alloy Steel
Servo-Encoder	12 Bit
Software	RoboFlow UIFlow myStudio ROS MoveIt Python

M5STACK 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.).

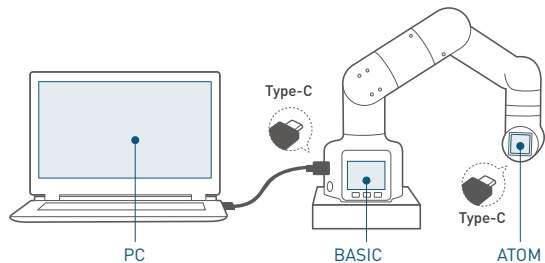**Please download the latest version of myStudio to use.**

The download link is as follows:
Officail website: https://www.elephantrobotics.com/myCobot/
Github: https://github.com/elephantrobotics/MyStudio/

Burn Table

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

PC   BASIC   ATOM

Development Environment	Library on PC	Basic Firmware	Atom Firmware
Default Program	N/a	mainControl	atomMain
Myblockly	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

myCobot 320 M5
myCobot Pro-320-M5

科研 超高性价比

经济性   紧凑性   易用性

⚠ 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。
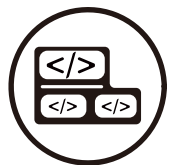
Elephant Robotics | **M5STACK**

六轴协作机器人

myCobot 320 M5是myCobot产品进阶版，主要适合创客及科研人员，能够根据用户的需求进行二次开发，实现用户个性化定制。整体精巧构思，all-in-one设计，具有易用性、安全性和经济性三大优势，是高性价比之选。

myCobot 320 M5本体重量3kg，负载1kg，工作半径320mm，体积相对小巧但功能强大，操作简单、能与人协同、安全工作。

操作便捷，开源易用

借助拖动示教以及myblockly简单的可视化编程，用户可迅速上手操作
支持ROS/movelt等开发系统及大象机器人自主研发的roboflow操作软件

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

性能强大，搭载两块显示屏

采用无刷直流舵机，可以达到±0.5mm的重复定位精度
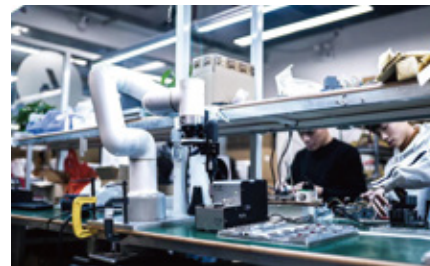机身搭载两块显示屏，支持M5生态应用，有效拓展协作应用空间
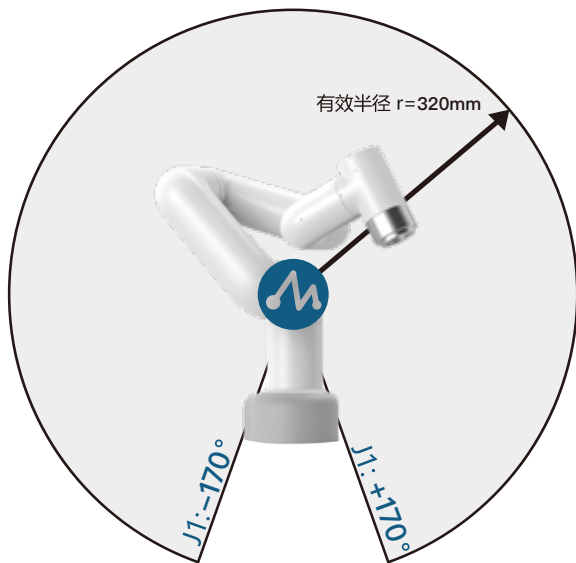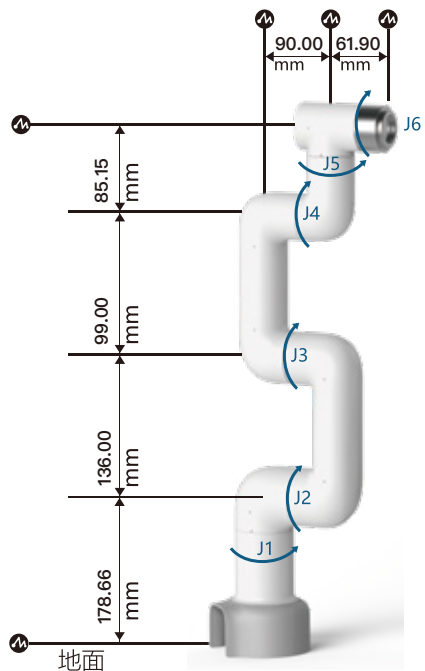
一体化设计，安全协同作业

精巧结构设计使其能够充分利用空间，完美融入实际环境
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

myCobot 320原型–大象机器人C系列all–in–one机器人

myCobot 320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
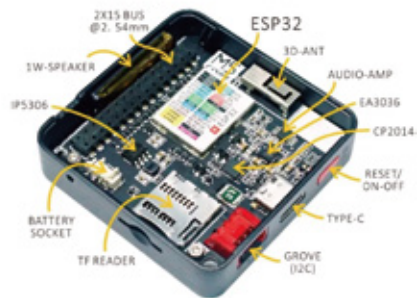术奖"，远销海内外30多个国家并备受数家来自世界500强名企的一致认可与好评。

myCobot 320 尺寸与工作范围图

90.00 mm 61.90 mm

85.15 mm
99.00 mm
136.00 mm
178.66 mm

J6
J5
J4
J3
J2
J1

地面

有效半径 r=320mm

J1:-170°   J1:+170°

产品参数

产品名称	myCobot 320
产品型号	mycobot–320–M5
有效负载	1kg
有效臂展	320mm
自重	3kg
重复定位精度	±0.5mm
自由度	6
IP等级	IP42
材料	高性能尼龙
工作温度	0~50°C
适配器供电	110~220V AC
关节范围	J1：+/– 170° J2：+/– 160° J3：+/– 160° J4：+/– 160° J5：+/– 170° J6：+/– 175°
噪音	<85 dB
供电与能耗	24V 5A; 120W
最大末端速度	0.7m/s

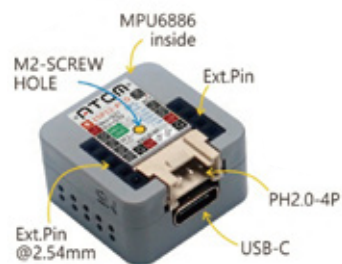|	
工具端 IO端口	12V/ GND 数字D–INPUT X2 数字D–OUTPUT X2 485总线AB
底座IO	数字D–INPUT x3 数字D–OUTPUT x3
通信方式（底座）	网口母口 typeC–母口
伺服电机–电机	无刷直流电机, 最大转速3000转
伺服电机–齿轮组	合金钢
伺服电机–编码器	12位
伺服电机–最大速度	180°/s
软件	RoboFlow UIFlow myStudio ROS MoveIt Python

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 & 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）

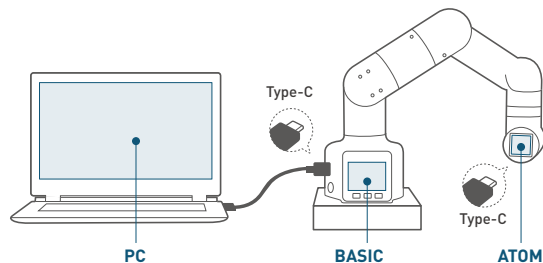**请下载最新版的myStudio进行使用**

软件下载链接如下：

1、**官网：** https://www.elephantrobotics.com/myCobot/

2、**Github：** https://github.com/elephantrobotics/MyStudio/

固件烧录

可支持myCobot 320进行二次开发的
开发环境有：Myblockly、RoboFlow、
Arduino、ROS、python等

Type-C

PC　　　BASIC　　　ATOM

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	Myblockly	Myblockly	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

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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期。

● 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**
≤ 6个月	我司免费提供新的舵机，并承担运费（仅一次）
＞6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
≤ 6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）
>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

延保政策

舵机，电子件，结构件每延迟保质期6个月，需支付6000人民币，延保上限30个月。

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**
≤6 months	Elephant Robotics offers a free new servo motor and bear the freight.
>6 months	Customers need to buy it themselves.

Electrical Parts (M5 Hardware)	
≤6 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.
>6 months	Customer need to buy it themselves.

Structure Parts, including Shell Parts	
≤1 year	Elephant Robotics offers free new components once.
≥1 year	Customers need to buy it themselves.

Extended policy:

As for servo motor, electrical parts and structure parts, you need to pay $1000 for 6-months delay after-sales service. And the maximum period of the extension will be 30 months.

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.