

MakeX 机器人挑战赛 直播公开课



主讲人

主讲人介绍： 温宇 Gary



Xschool 科创及赛事产品总监&赛事总领队

国际学校11年science 和 Makerspace教学经验

APSCO亚太航天协会国际顾问

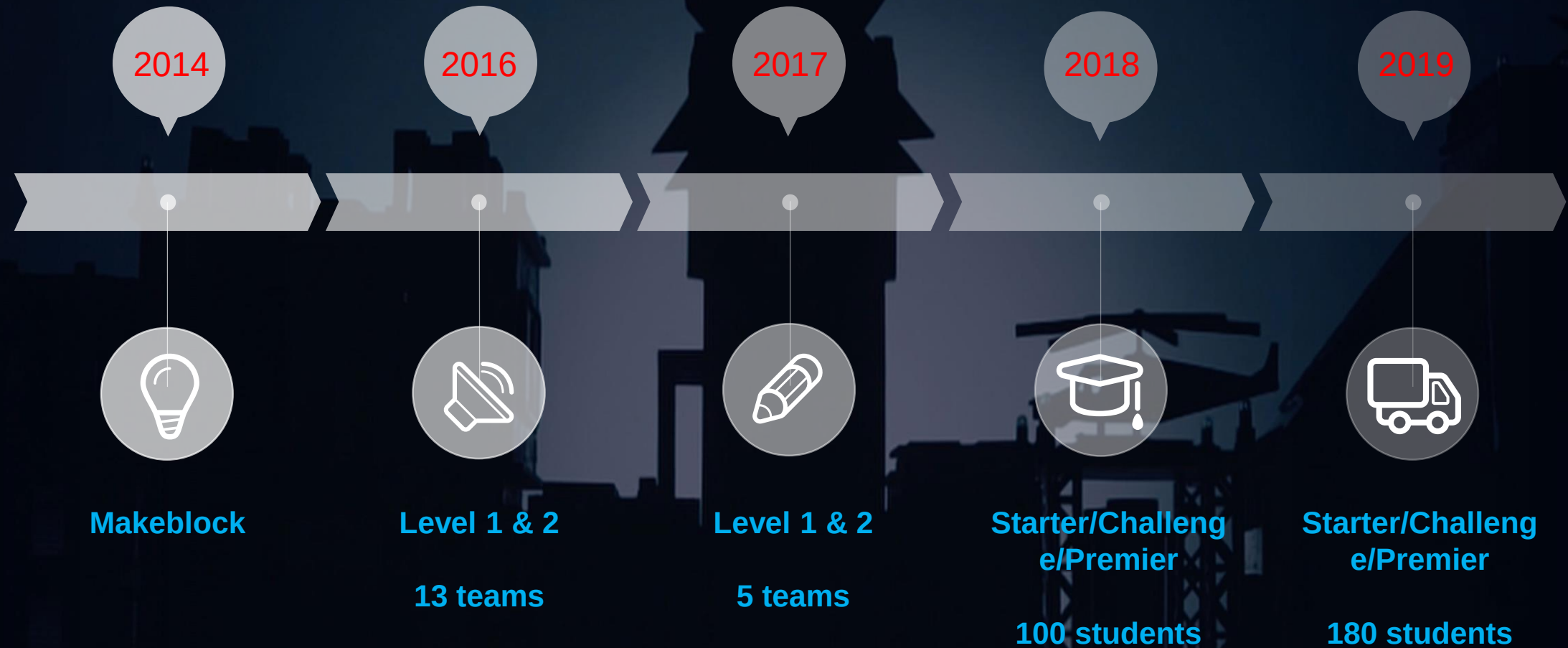
3年机器人赛事裁判经验， 5年MakeX比赛带队经验

2019年MakeX华北区冠军， WRC亚军， 全球总决赛冠军

培训过国内外超过300位创客教育及机器人赛事老师

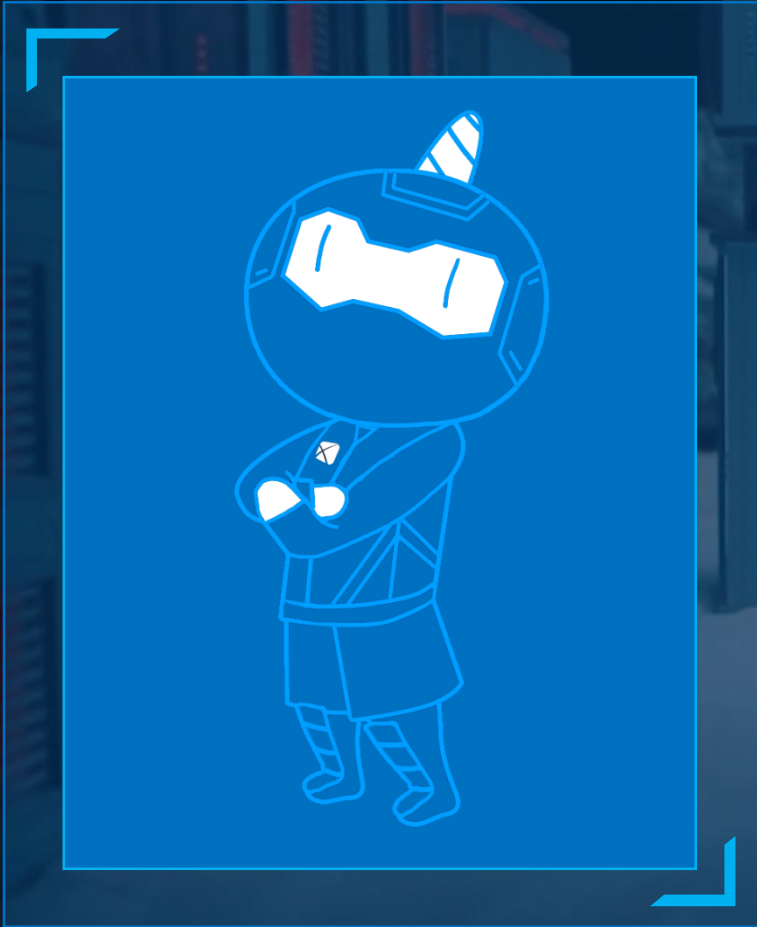
MakeX Challenge & Premier 技术分享

Gary



2018-Guangzhou-4th Place

2018MakeX广州总决赛第四名





2019



2019世界机器人大会 青少年机器人设计大赛



2019.7-Baoding-2nd place



2018.8-Beijing-Champion



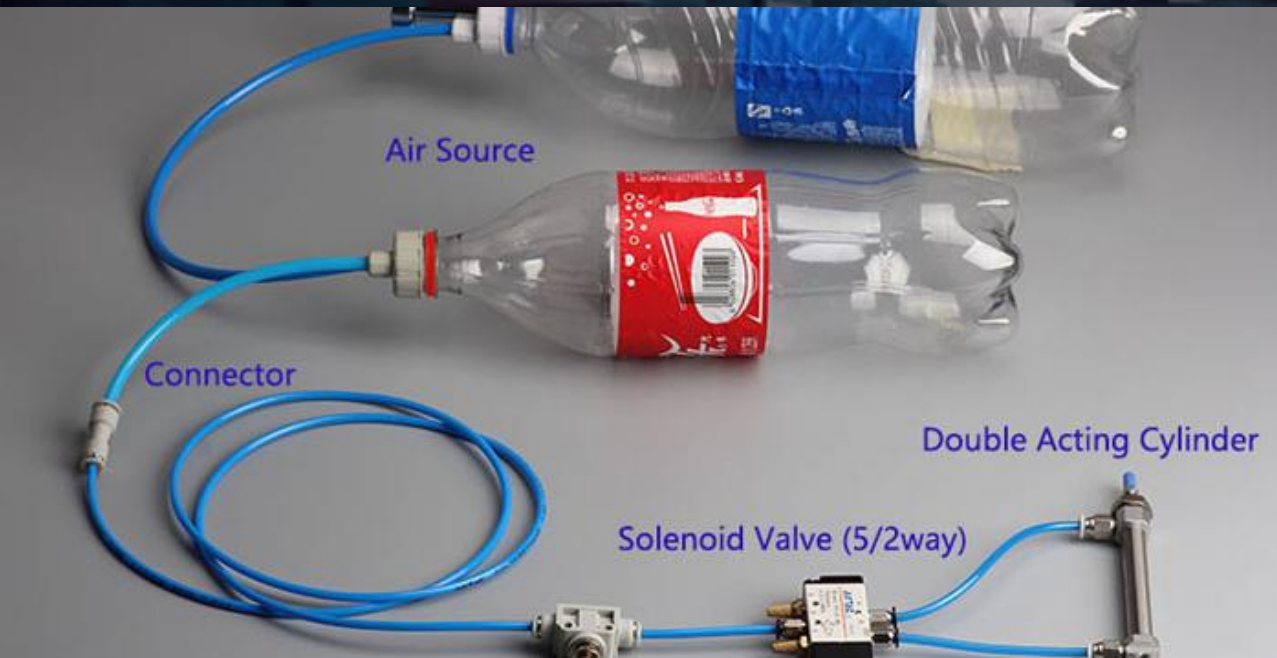
2019.11-Guangzhou-Final Champion

The background image shows two young men, likely members of the 'X Fire Team', shaking hands in a friendly gesture. They are both wearing dark t-shirts and lanyards with identification badges. The setting appears to be a robotics competition, with various banners and logos visible in the background. The text '“ONE TEAM and No Gary”' is overlaid in large, white, sans-serif font across the center of the image. The overall tone is positive and collaborative.

“ONE TEAM and No Gary”

Why the “X Fire Team can win the competition?

Gripping Structure 夹取结构



本期内容介绍

01

MakeX比赛筹备建议

02

往年MakeX机器人分析

03

MakeX比赛机器人设计
与搭建主要标准

01

Suggestions of preparation of the MakeX competition

MakeX比赛筹备建议

How can a **TEAM** win the MakeX competition?

Strategy 策略

What strategies are needed in the MakeX competition?
比赛中需要什么样的策略?

Competence 个人核心能力

What kinds of competences are needed for a good player or team?
一个好的队员或队伍需要什么样的个人核心能力?



Skills (Experience) 技术 (经验)

What skills do students need to master for the MakeX advanced competition?
在MakeX高阶比赛中学生都要掌握什么技术?

TEAM Organization 团队安排

How does a team work in the Makex Challenge and Premier competitions?
在MakeX Challenge和Premier比赛中怎么做到团队协作?



What positions do you need in
your team?

在一个战队里都需要那些岗位?

TEAM Organization-Clear roles and responsibilities

团队组织-明确角色和职责



Strategy 策略

How long does it take to
design and build a Challenge
or Premier machine?

设计制作一台Challenge或者
Premier战车需要多久?



1-2 weeks for building,
but the entire year for
being perfect!

一到两周就可以建好，
但是需要一年的时间让
它近似完美！

What is the first thing you
must do for the MakeX
competition?

你要为了MakeX比赛要做的第
一件事情是什么？

To Read the Rule Guides ,and
brainstorming for a strategy!

阅读规则说明，脑洞比赛策略！





What is the strategy for the
competition you need to
consider?

你需要为比赛考虑那些策略？

Strategy 策略

Year Strategy 年度策略



- Periodical Goal Setting
阶段性目标制定
- SOP/deadline control
时间节点控制
- Strategy test and adjustment
策略测试与调整

Lesson Plan 教学计划



- Curriculum Framework
课程大纲制定
- Seasonally / weekly outcomes
阶段性产出
- Basic and extended learning
基础和扩展学习

Training Plan 集训方案



- Training Schedule
集训时间表
- Training Data Statistics
集训数据分析
- Practice Match Arrangement
练习赛安排

Lesson Plan 教学计划

Start
开始阶段

The 1st seasonal test
第一次季度测试



January—March 一月到三月
Basic learning 基础学习阶段

1. Programming 程序
2. Construction 结构搭建
3. 3d modeling 3D建模
4. Hardware 比赛硬件
5. Standards 标准

April—May 四月到五月
Competition Preparation 比赛准备阶段



June—August 七月到八月
Competition Season 1st to 3rd version machines
赛季的第一版到第三版机器设计制作



September-November 九月到十一月



1. Data Analysis 数据分析
2. Strategy Adjustment 策略调整
3. Extended Learning 扩展学习
4. 4th to 5th version of the machine 第四、五版战车



December 12月

Final Competition Yearly
Reflection
年度决赛反思

Finish ✓

Competence 个人核心能力



Communication 交流能力

Conveying Ideas



Self Motivated 自我激发的能力

Working independently and withstand pressure



Collaboration 合作能力

Working with others



Self Management 自我管理的能力

Working independently without supervision and willing to learn new things



Critical thinking & Problem Solving

批判性思维和解决问题能力

Finding solutions to problems



Leadership 领导能力

Motivating a team to accomplish a goal



「I have no such long time!」



TOP 3 Now rules,
high only!

TOP 1:

You won't make a
perfect one on the
first time! Focus on
one!



第一次比赛你不可能做到面面
俱到，关注一点就好！



TOP 2:

The simplest is the
best! No more than 3!

最简单的就是最好的！不要超过3
步！



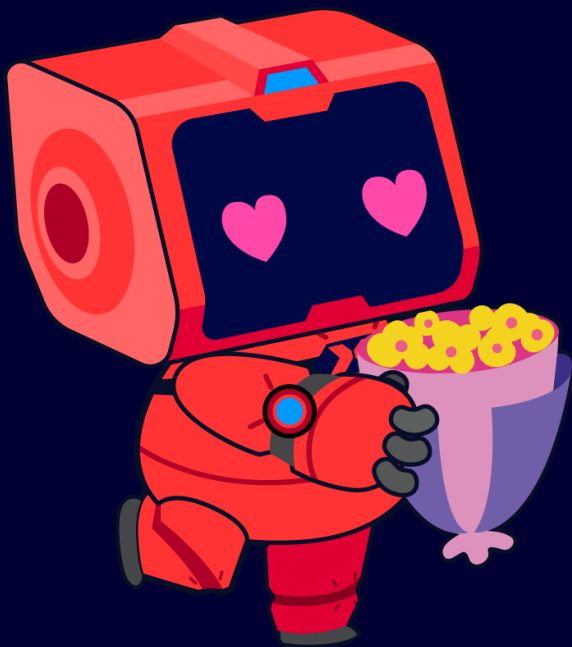
TOP 3:

Standard + A great
Team Captain= Your
coffee time

标注化管理+一个好的队长=
你可以去喝咖啡了!



问题互动环节



MakeX 交流QQ群 837509679

02

Robots analysis of MakeX competition in the past years

往年MakeX比赛机器分析

Parts of Premier Robot



Chassis Drive System 底盘行走系统



Internal Transport Structure 内部运输结构



Props Collection Structure 道具收集结构



Shooting System 发射系统



Lifting Structure 举升结构



Gripping Structure 夹取结构



Chassis Drive System 底盘行走系统



Chassis Drive System- wheels 底盘行走系统—车轮

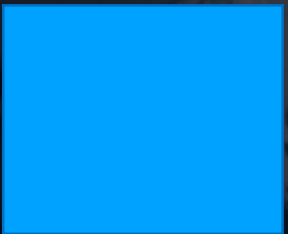
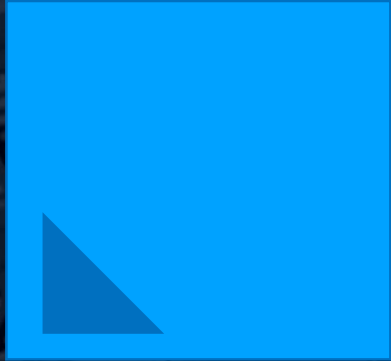
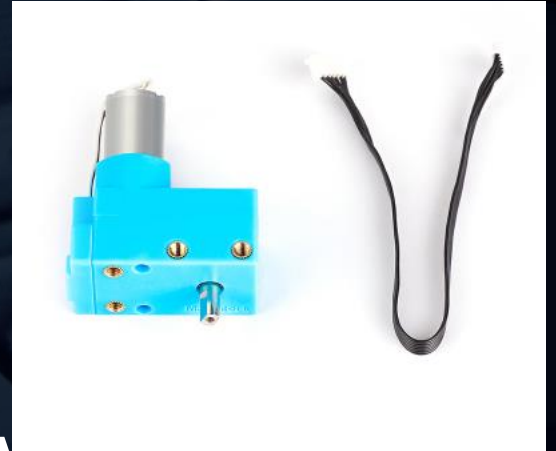
Omni wheel-100mm

Omni wheel-58mm

Mecanum wheel-100mm

Mecanum wheel-152mm

Mecanum wheel - 76.2mm

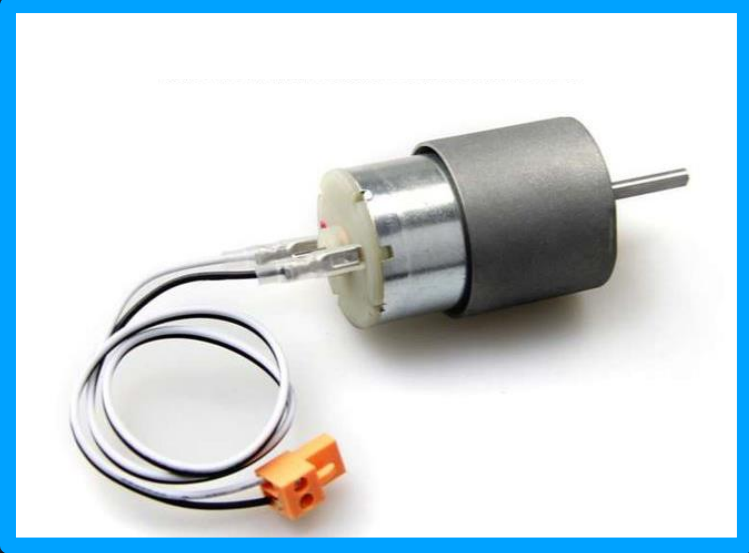


Chassis Drive System-
60-76.2mm wheels
底盘行走系统—60-72mm
轮



Drive System-10
wheels

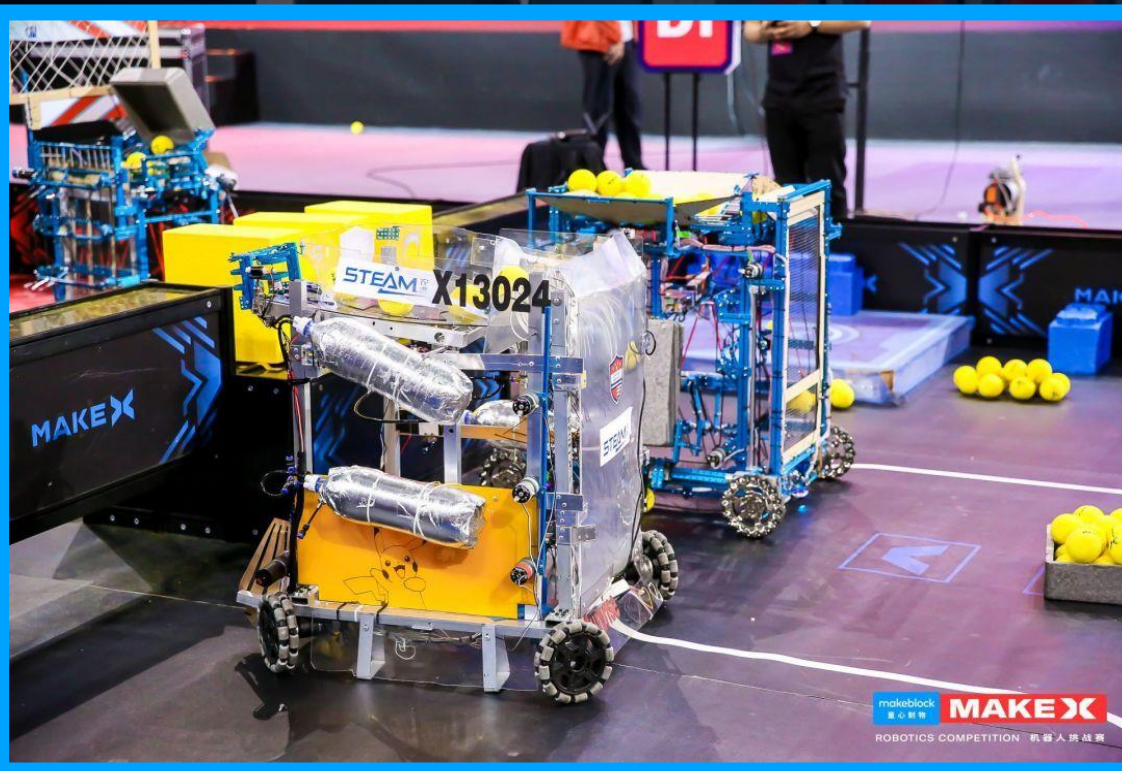
底盘行走系统 -100-152mm轮

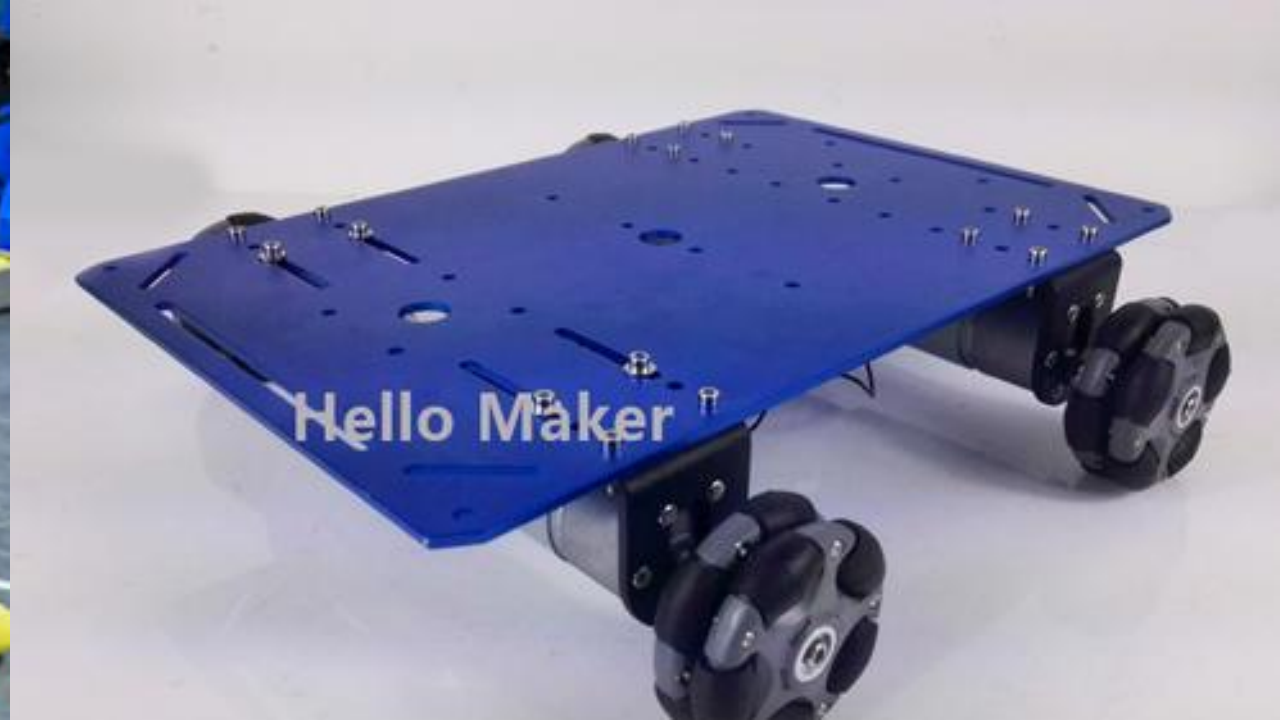


Chassis Drive System-MakeX 100mm mecanum
wheels

底盘行走系统—Makeblock 100mm麦轮

How to install the omni wheels? 如何安装全向轮?





How to install the omni
wheels?

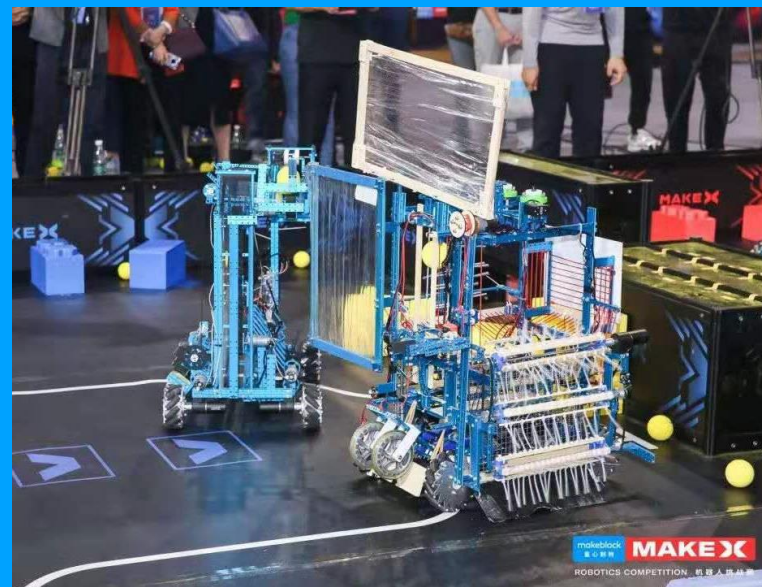
如何安装全向轮?

How to install the omni wheels?

如何安装全向轮？



Props Collection Strucutre

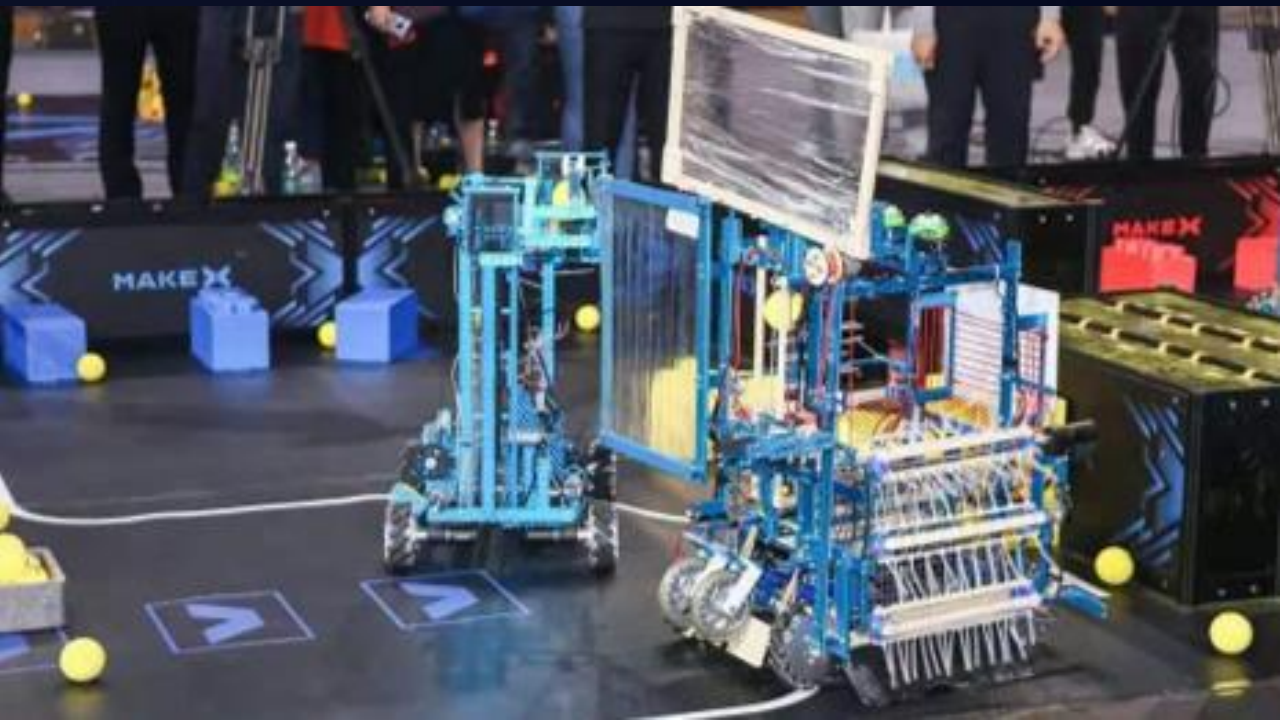
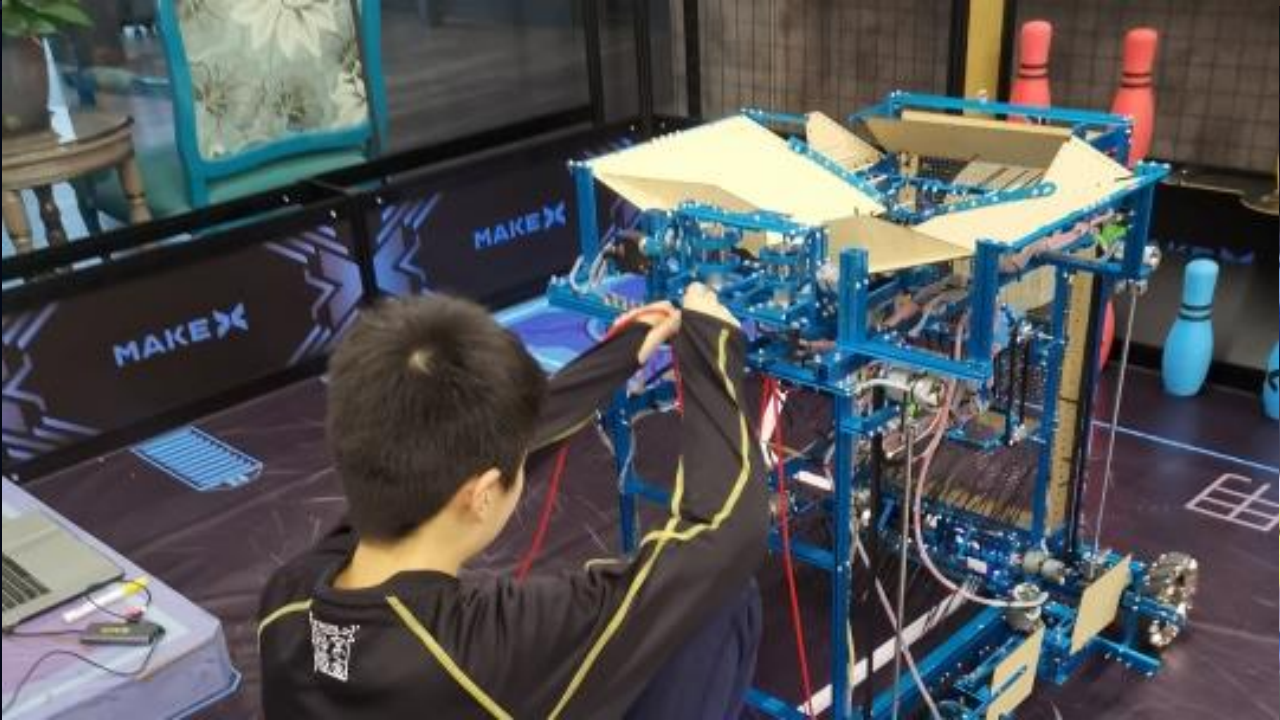




Lifting Structure

举升结构



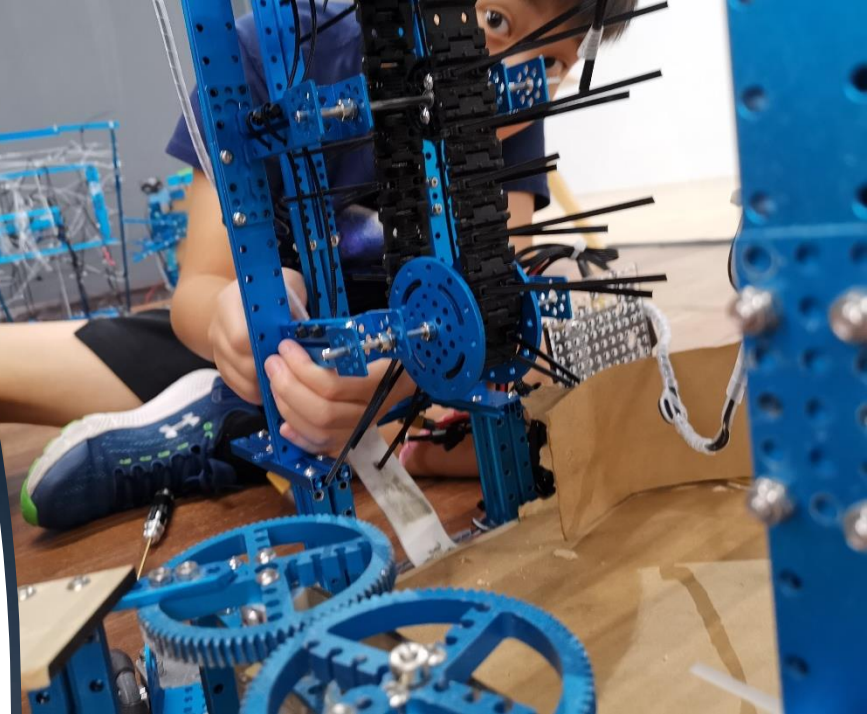
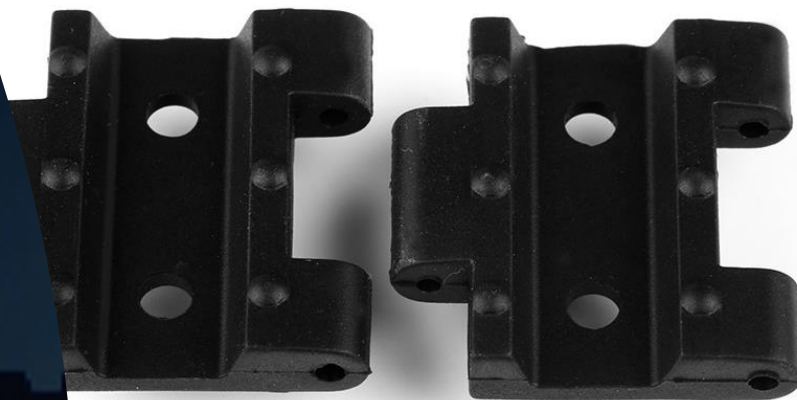


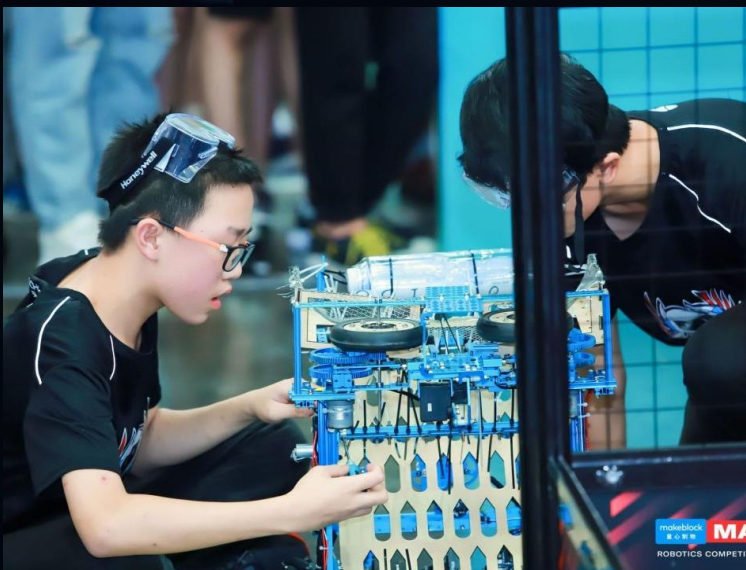
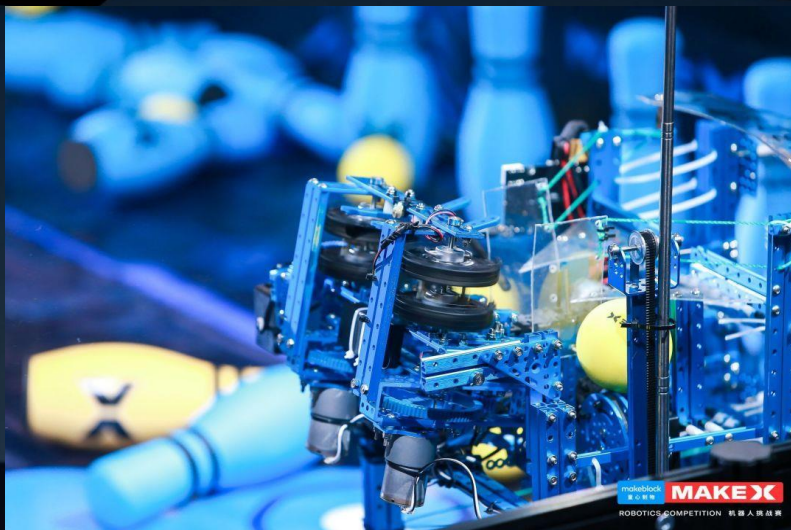
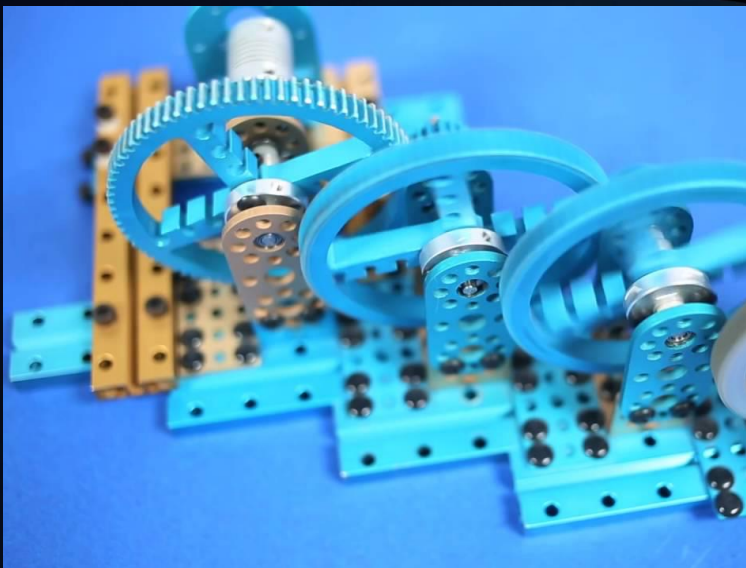
└Lifting Structure

└
举升结构

Internal
Transport
Structure

内部运输结构

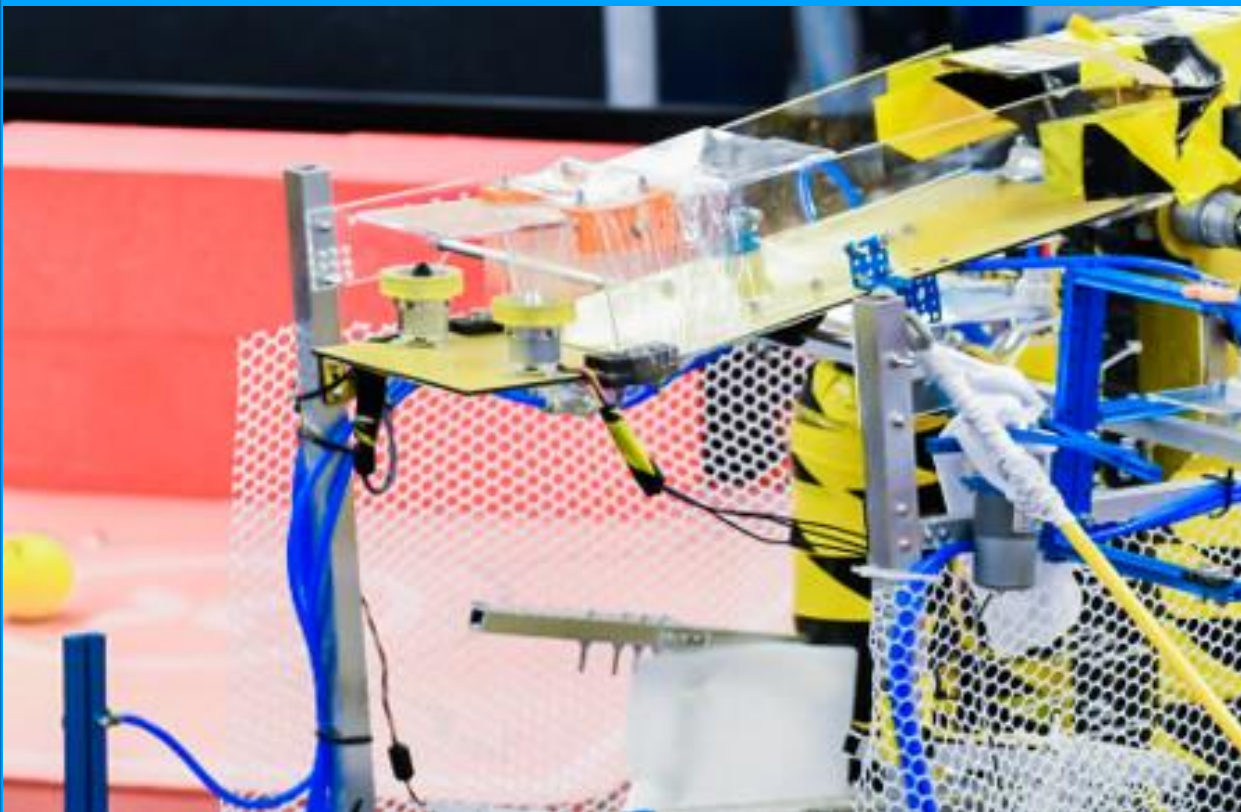




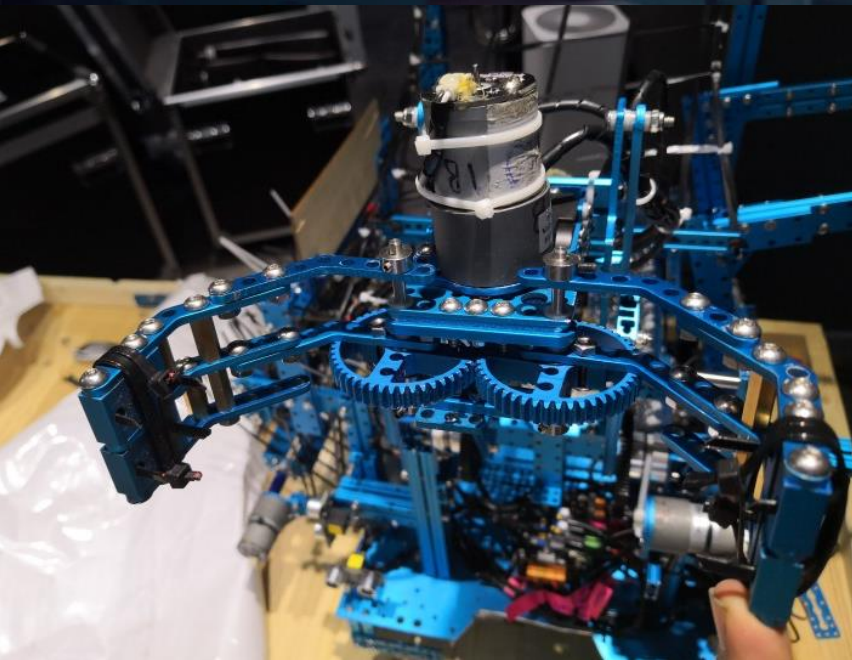
Shooting
System

发射系统

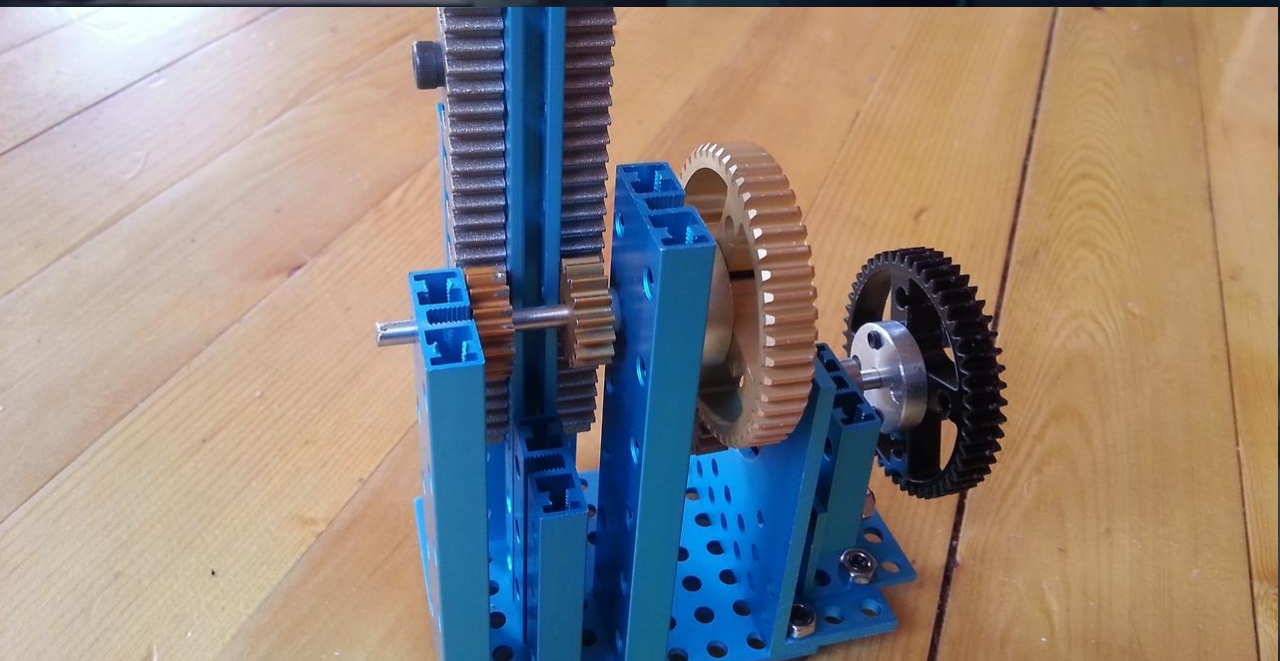
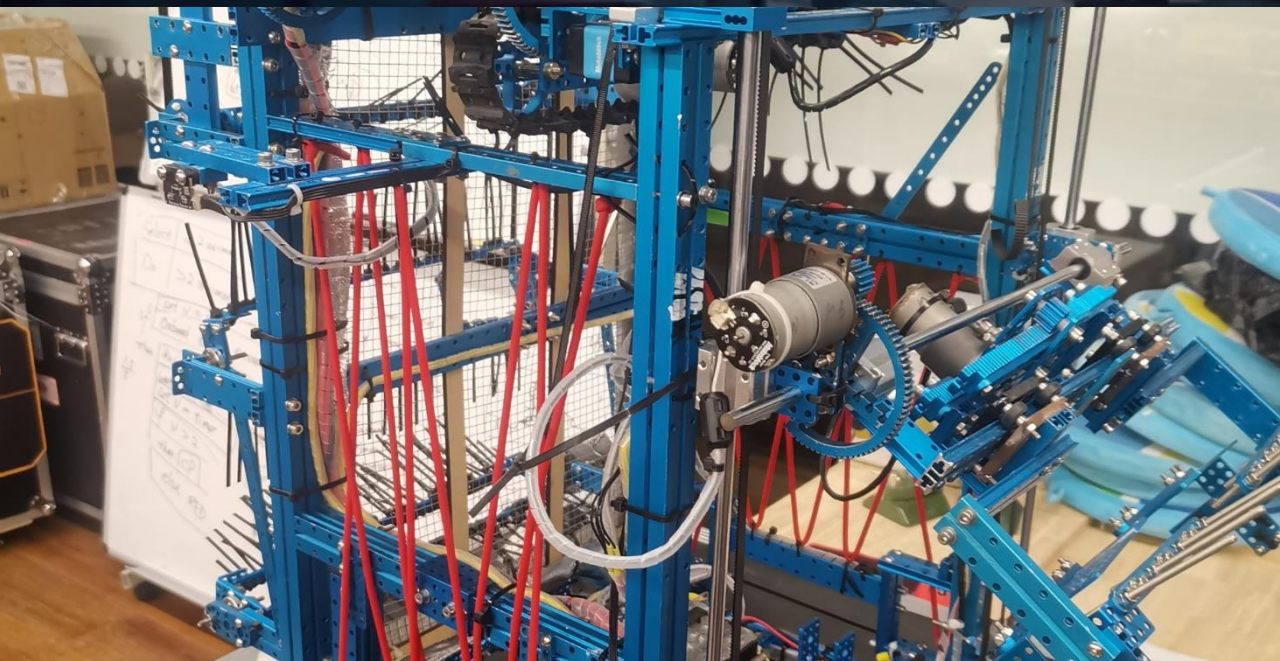
Shooting System 发射系统



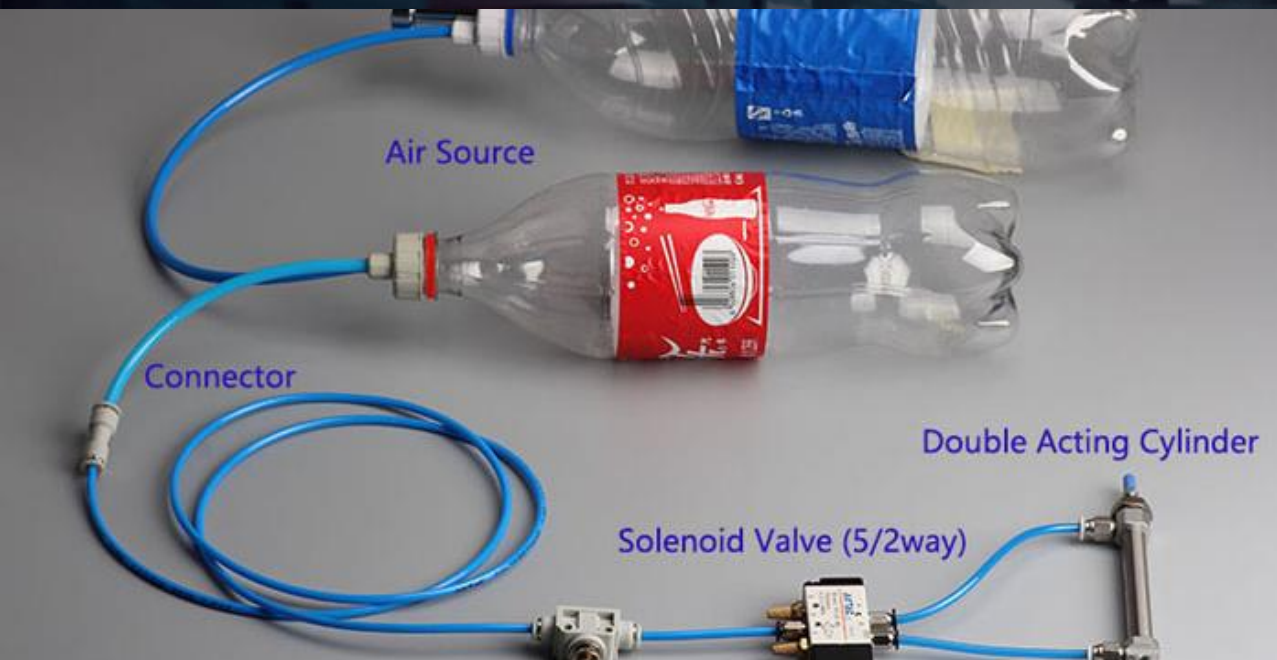
Gripping Structure 夹取结构



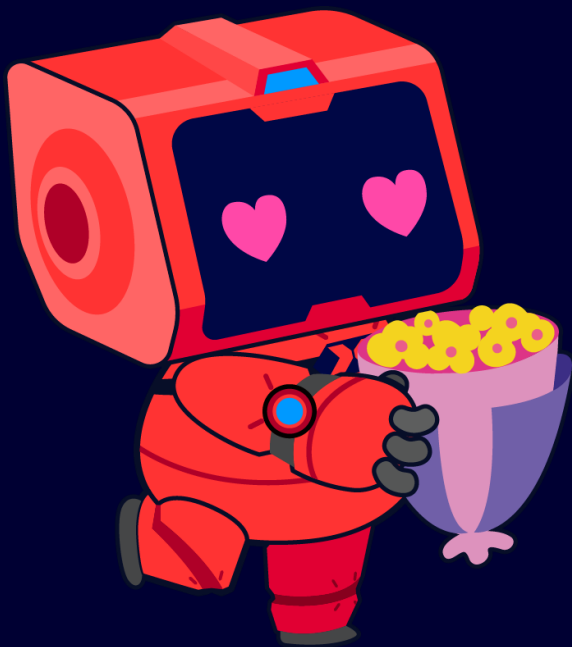
Gripping Structure 夹取结构



Gripping Structure 夹取结构



问题互动环节



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03



The main Standard of MakeX competition robot design and build

MakeX比赛机器人设计制作主要标准

Safety Standard

安全标准



Fastener application standard

紧固件使用标准



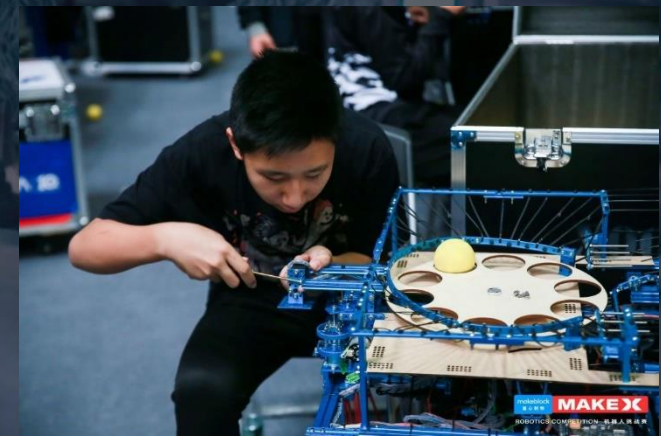


**Automatic Stage
Testing Standard-
20 times 100 %
success**

自动阶段测试标准

Tolerance control
standard

建造公差标准



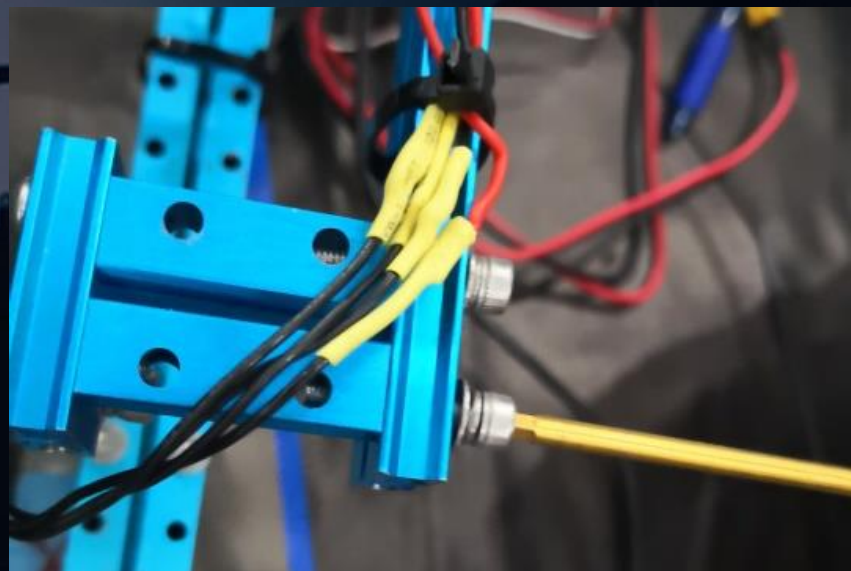
Wiring
Standard

布线标准



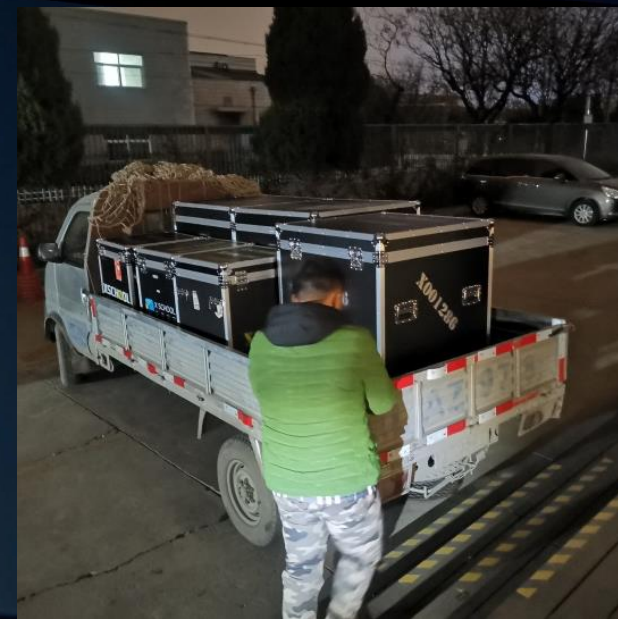
Wire Connection Standard

线路连接标准



Transport Standard

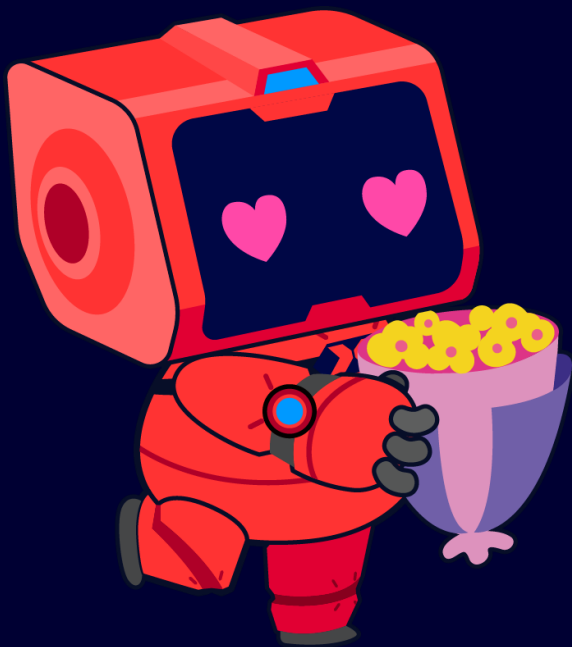
运输标准





Wish you success in the
MakeX Competition!

问题互动环节



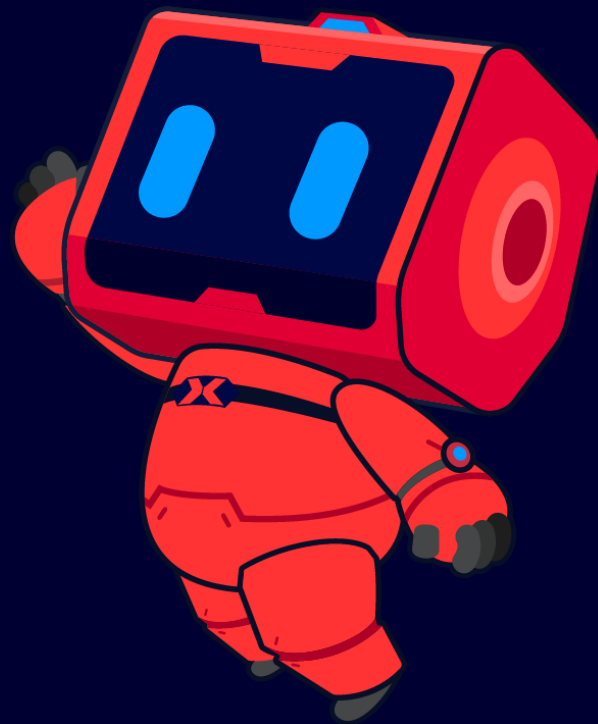
MakeX 交流QQ群 837509679

下期预告

x月x日 19:30-20:15

《 》

与你不见不散!





MakeX组委会邮箱: makex@makeblock.com