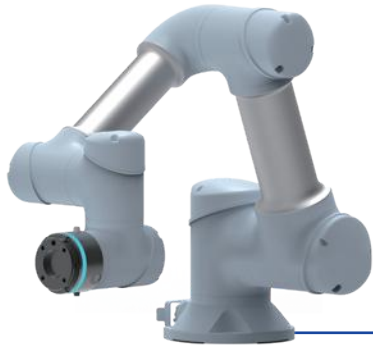


# 多可协作机器人

We Are Dedicated To The Advancement Of Cobot

引领协作机器人发展的行业先锋



感谢您选用多可<sup>®</sup>协作机器人!  
Thanks for choosing DUCO<sup>®</sup> Cobot!



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## 品牌愿景 | Brand Vision

引领协作机器人发展的行业先锋

## 品牌使命 | Brand Mission

智慧协力 世界向前

## 品牌价值观 | Brand Vision

善思求变 协作共享 价值为本 客户为先

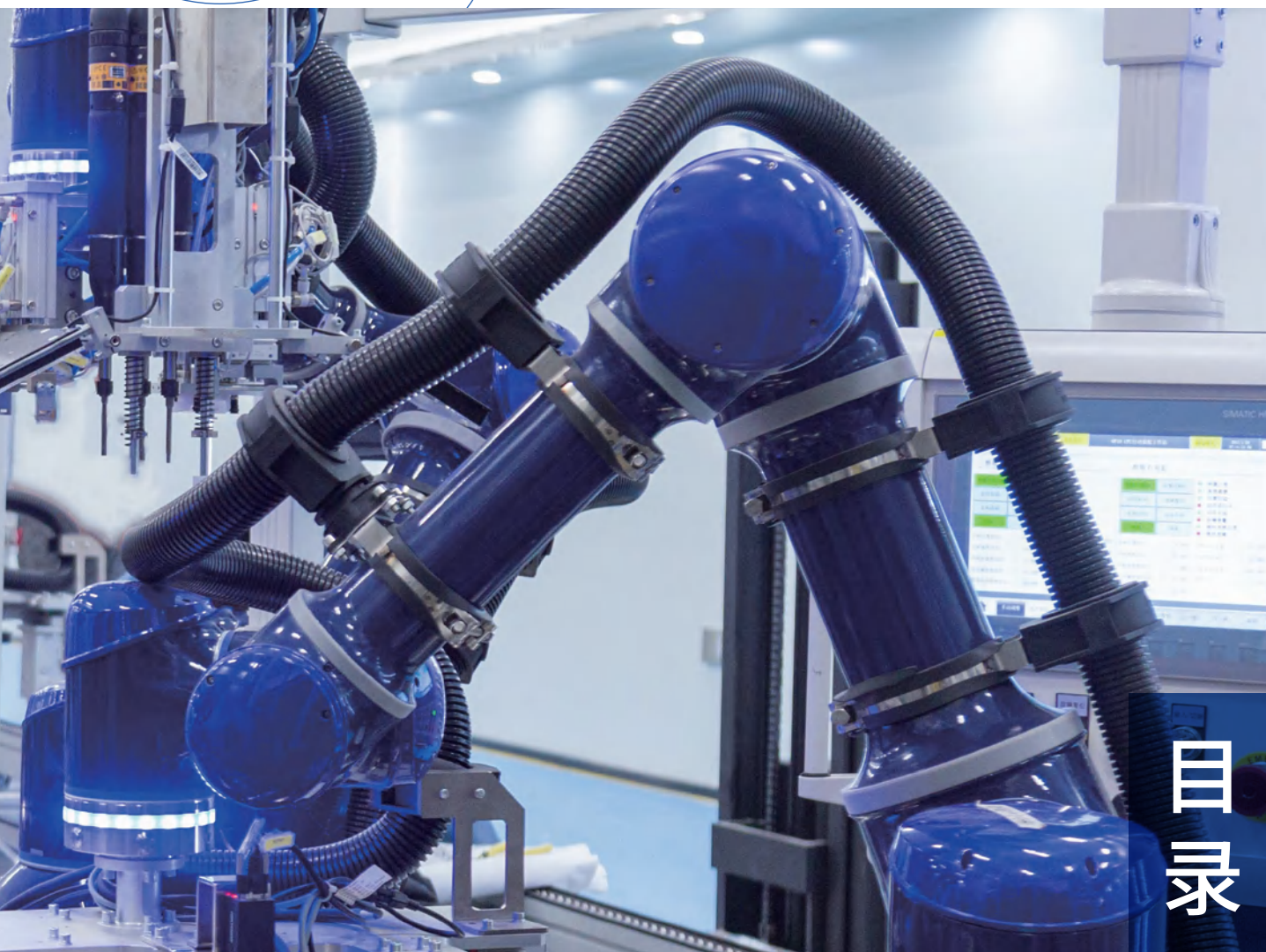
## 关于多可 | About DUCO

DUCO多可是中科新松有限公司旗下的协作机器人品牌,2014年于上海正式成立。英文DUCO(DO UNIQUE COBOT)代表了多可对协作机器人事业的愿景和使命,致力于为客户创造独特的产品和价值。

DUCO多可协作机器人植根中国科学院深厚的科研土壤,以技术研发为核心,率先取得多项自主研发的专利技术,一路上也创造了很多行业第一:国内首个七轴协作机器人,国内首个双臂协作机器人,国内首个20kg大负载协作机器人,国内首个复合协作机器人。在多可的带动下,中国协作机器人行业快速兴起。截至目前,DUCO多可协作机器人已经广泛应用于汽车、能源、半导体、3C、食品药品、教育科研等多个行业,产品出口东南亚、北美、欧洲等数十个国家与地区,品牌影响力享誉全球。

智慧协力,世界向前。多可将继续保持研发与创新优势,以智慧之力,推动协作机器人行业的前进,与更多客户携手同行,共创美好的未来!





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- 27 智能应用控制器  
DUCO Mind

# GCR系列协作机器人

## GCR Series Cobot

### Safety

#### 安全加持



具有碰撞检测、力和功率监控等16个TUV认证的安全功能, 人机协作更安全

With 16 TUV certified safety functions such as collision detection, force and power monitoring, which enables Human Robot collaboration

### Smart

#### 智能非凡



提供完整2D/3D视觉解决方案, 深度集成2D/3D视觉, 无需增加额外处理硬件

Provide a complete 2D/3D vision solution, deep integration of 2D/3D vision, without additional processor hardware

### Wide Application

#### 应用广泛 旗舰版轨迹速度提升30%

Premium: 30% Faster Trajectory

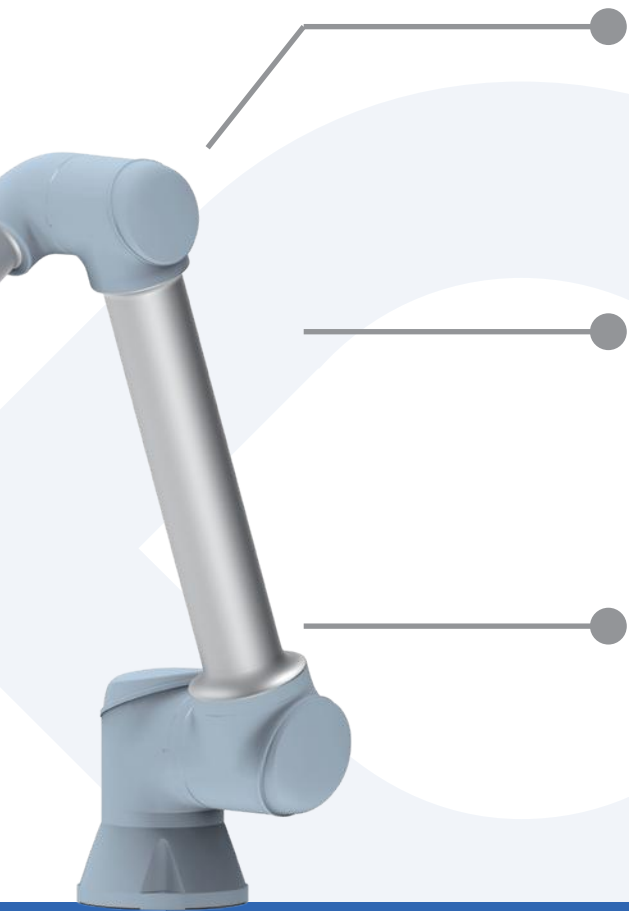


负载25kg-3kg, 工作半径2000mm-618mm, 应用更广泛, 性能提升

Widely Applied: Payload 25kg-3kg, Working Range 2000mm-618mm, Increased Performance



该系列包括GCR25-1800、GCR20-1100、GCR16-960、GCR14-1400、GCR12-1300、GCR10-2000、GCR10-1300、GCR5-910和GCR3-618等通用型6轴协作机器人产品(旗舰版&ZII版), 负载与工作半径的显著优势使其能够适应更广泛的应用需求, 同时具有安全、易于操作、快速部署、低功耗等协作机器人特性。



## Easy Maintenance

### 运维便捷



拖拽示教式编程,降低使用门槛,易操控

Easier-to-ues:With Traction Teach Programming, Less limitation to robot user

## Light and Handy

### 智轻致巧



轻量化设计,可快速部署并适应产线,更高效

Lightweight & Space-saving:Can be quickly deployed and redeployed toadapt to production line changes

## ESD

### 防静电



机体可防静电ESD,更好地满足特定行业需求

ESD Antistatic:Better meet the demands of specific industries

There are nine types of 6-axis cobot; GCR25-1800,GCR20-1100,GCR16-960,GCR14-1400,G-CR12-1300,GCR10-2000,GCR10-1300, GCR5-910,GCR3-618. With significant advantages--higher payload and working range, and features of cobot such as collaborativesafety, easy-to-use and energy-saving, these robots can adapt to more application needs.

# GCR系列协作机器人

## GCR Series Cobot

### 技术参数 Technical Parameters



		GCR25-1800	GCR20-1100	GCR16-960	GCR14-1400
最大负载 Max Payload		25kg	20kg	16kg	14kg
自由度 Degrees of Freedom		6	6	6	6
末端最大速度 Max TCP Speed		2.5m/s	2.0m/s	3.0m/s	2.2m/s
末端最大直线速度 Max Straight-line Speed		1.5m/s	1.0m/s	1.5m/s	1.0m/s
有效工作半径 Reach		1800mm	1100mm	960mm	1400mm
重复定位精度 Repeatability		±0.05mm	±0.05mm	±0.05mm	±0.05mm
关节 Joint	运动范围 Joint	最大速度Max Speed			
J6	±360°	225°/s	225°/s	225°/s	225°/s
J5	±360°	225°/s	225°/s	225°/s	225°/s
J4	±360°	225°/s	225°/s	225°/s	225°/s
J3	±360°	150°/s	180°/s	225°/s	180°/s
J2	±360°	100°/s	120°/s	180°/s	120°/s
J1	±360°	120°/s	120°/s	180°/s	120°/s
工具接口 Tool Interface		GB/T 14468.1-50-4-M6(eqv ISO 9409-1)			
末端I/O End Joint I/O		2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A
电源 Power Supply		220-240VAC 47-63Hz10A/100-200VAC 47-63Hz 16A			
功耗 Power Consumption		典型工况约600W Typical Power Consumption600W	典型工况约600W Typical Power Consumption600W	典型工况约400W Typical Power Consumption400W	典型工况约600W Typical Power Consumption600W
安装方式 Installation		置地式 Land tyoe	置地式、倒挂式、悬臂式 Installed in any Direction		
IP等级 IP Class		IP54	IP54	IP54	IP54
环境温度 Ambient Temperature Range		-10°C-50°C	-10°C-45°C	-10°C-45°C	-10°C-45°C
储存温度 Storage Temperature Range		-40°C-55°C	-40°C-55°C	-40°C-55°C	-40°C-55°C
机器人外形尺寸 Robot Dimensions		2300x440x252mm	1395x420x290mm	1180x388x205mm	1695x388x205mm
机器人包装尺寸 Robot Package Size		1295x540x515mm	1060x500x600mm	958x508x516mm	1060x500x600mm
净重/毛重 Net/Gross Weight		61.6kg/70kg	65kg/75kg	37kg/45kg	66kg/75kg



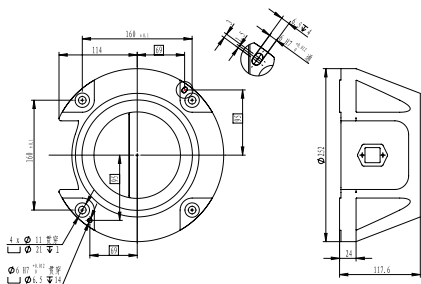
GCR12-1300	GCR10-2000	GCR10-1300	GCR7-910	GCR5-910	GCR3-618
<b>GCR12-1300</b>	<b>GCR10-2000</b>	<b>GCR10-1300</b>	<b>GCR7-910</b>	<b>GCR5-910</b>	<b>GCR3-618</b>
12kg	10kg	10kg	7kg	5kg	3kg
6	6	6	6	6	6
3.8m/s	4.0m/s	3.8m/s	3.6m/s	3.6m/s	1.0m/s
1.5m/s	1.8m/s	1.5m/s	1.5m/s	1.5m/s	0.8m/s
1300mm	2000mm	1300mm	917mm	917mm	618mm
±0.05mm	±0.05mm	±0.05mm	±0.03mm	±0.03mm	±0.05mm
最大速度Max Speed					
225°/s	225°/s	225°/s	225°/s	225°/s	225°/s
225°/s	225°/s	225°/s	225°/s	225°/s	225°/s
225°/s	225°/s	225°/s	225°/s	225°/s	225°/s
225°/s	180°/s	225°/s	200°/s	225°/s	225°/s
180°/s	120°/s	180°/s	200°/s	225°/s	225°/s
180°/s	120°/s	180°/s	200°/s	225°/s	225°/s
GB/T 14468.1-50-4-M6(eqv ISO 9409-1)					
2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A
100-240VAC 47-63Hz 10A					
典型工况约500W Typical Power Consumption400W	典型工况约500W Typical Power Consumption400W	典型工况约400W Typical Power Consumption400W	典型工况约200W Typical Power Consumption200W	典型工况约200W Typical Power Consumption200W	典型工况约200W Typical Power Consumption200W
置地式、倒挂式、悬臂式 Installed in any Direction					
IP54	IP54	IP54	IP54	IP54	IP54
-10°C-45°C	-10°C-45°C	-10°C-45°C	-10°C-45°C	-10°C-45°C	-10°C-45°C
-40°C-55°C	-40°C-55°C	-40°C-55°C	-40°C-55°C	-40°C-55°C	-40°C-55°C
1512x388x205mm	2300x388x205mm	1512x388x205mm	1100x330x200mm	1100x330x200mm	769x315x150mm
958x508x516mm	1465×516×472kg	958x508x516mm	698x588x450mm	698x588x450mm	532x431x330mm
37.8kg/46kg	58kg/65kg	37.8kg/46kg	22kg/30kg	22kg/30kg	13kg/20kg



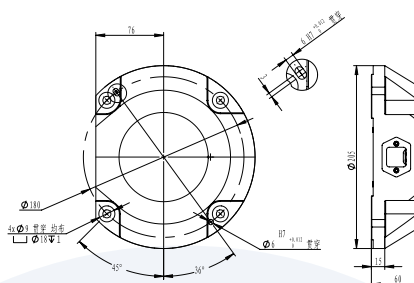
# GCR系列协作机器人

## GCR Series Cobot

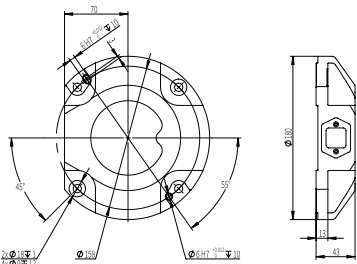
### 底座法兰 Base Flange



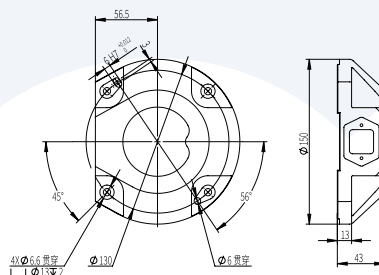
GCR25-1800/GCR20-1100  
GCR14-1400/GCR10-2000



GCR16-960/GCR10-1300  
GCR12-1300

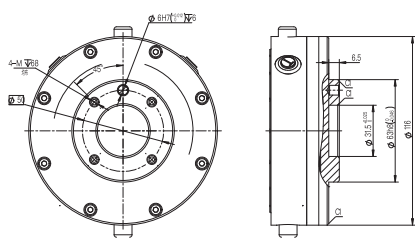


GCR5-910/GCR7-910

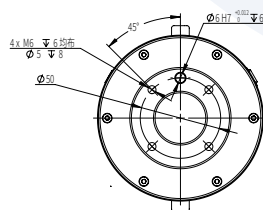


GCR3-618

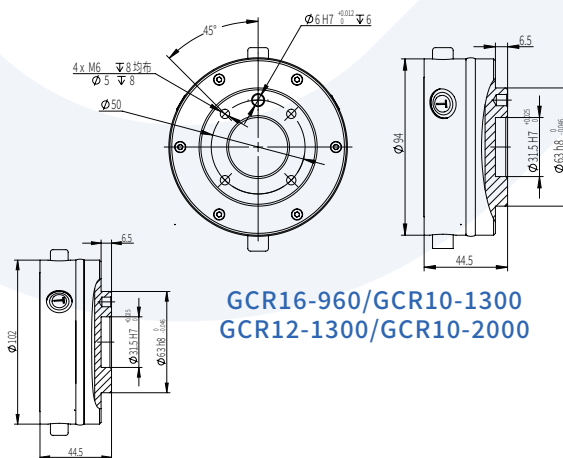
### 工具法兰 Tool Flange



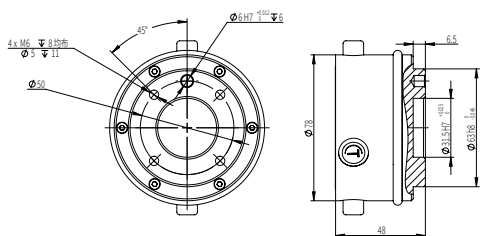
GCR20-1100/GCR14-1400



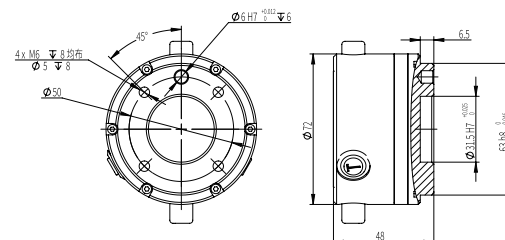
GCR25-1800



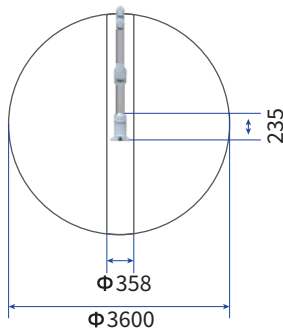
GCR16-960/GCR10-1300  
GCR12-1300/GCR10-2000



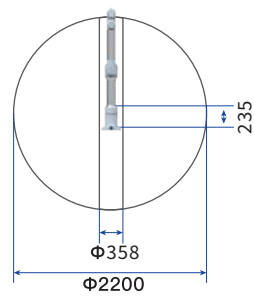
GCR5-910/GCR7-910



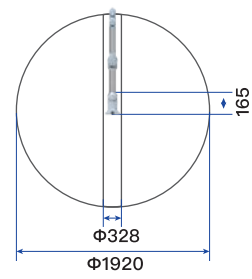
GCR3-618



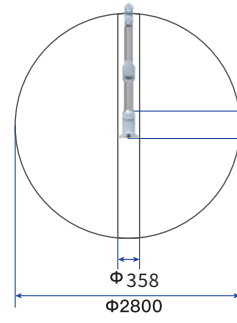
GCR25-1800



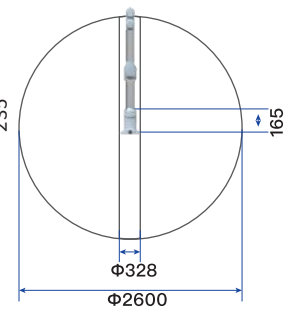
GCR20-1100



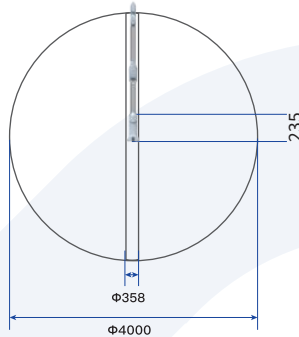
GCR16-960



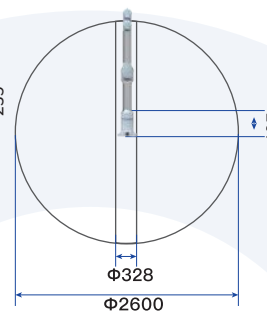
GCR14-1400



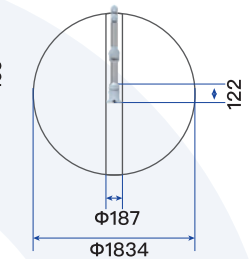
GCR12-1300



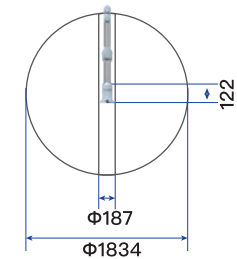
GCR10-2000



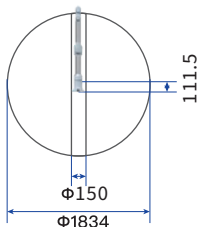
GCR10-1300



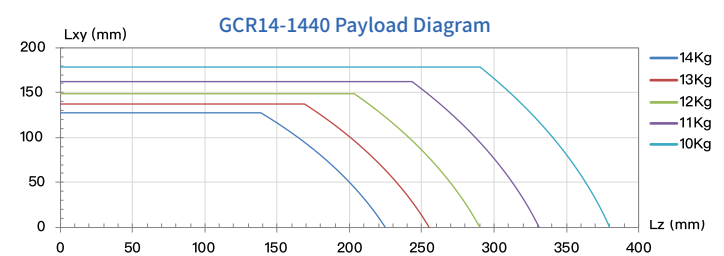
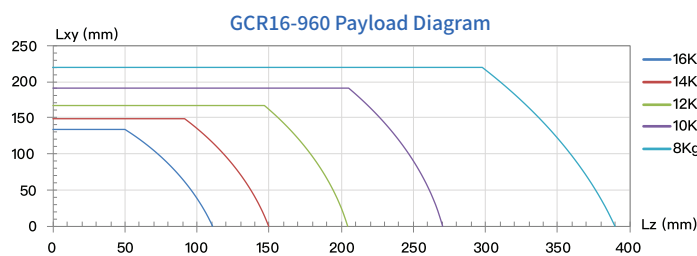
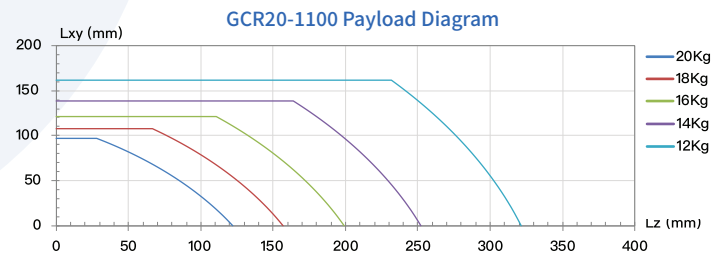
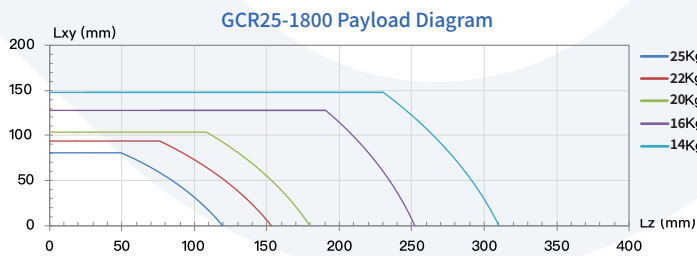
GCR7-910



GCR5-910



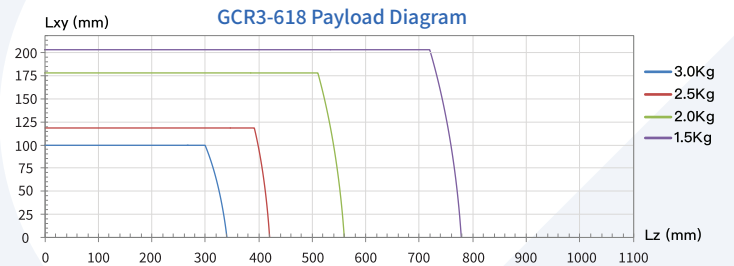
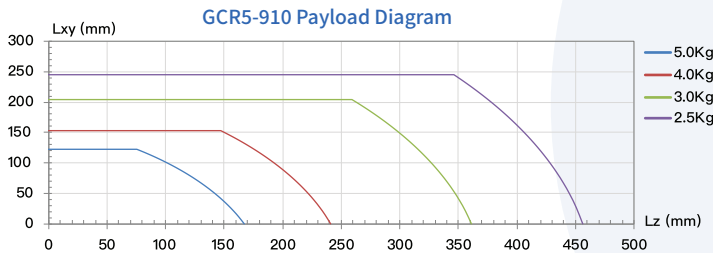
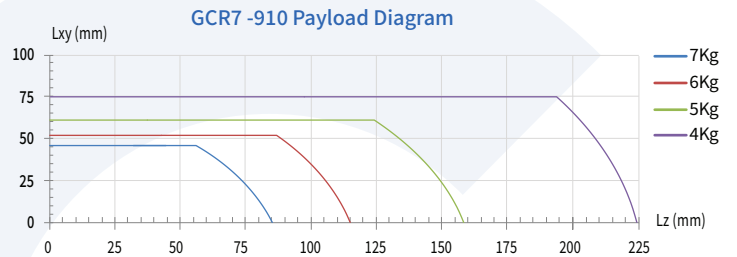
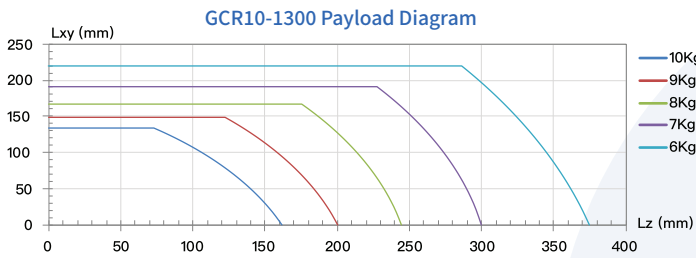
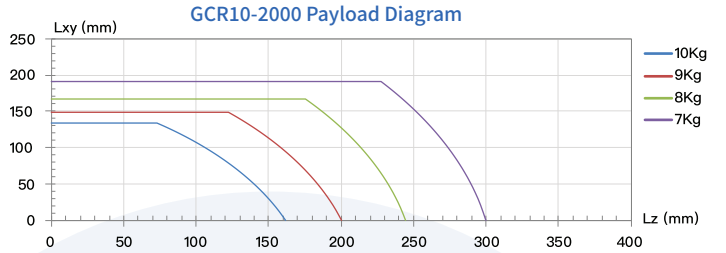
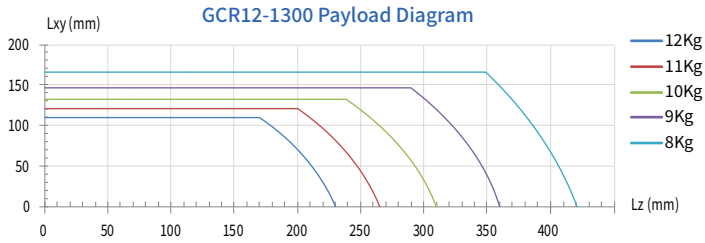
GCR3-618



# GCR系列协作机器人

## GCR Series Cobot

### 负载曲线 Payload Diagram



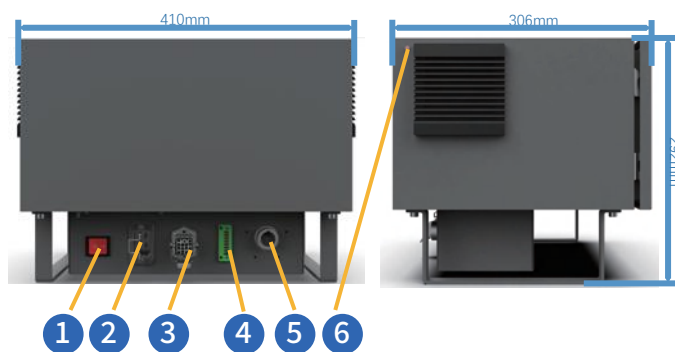
### 控制柜 Control Box



控制柜&示教器

控制器是机器人的大脑,用于控制机器人上下料、抓取、打磨、搬运、焊接、涂胶涂油等操作,还可实现输入输出控制等功能。最新的DUCO多可控制柜在兼顾了安全性和灵活性的同时缩小了占地面积,在人机协作领域有更优异的表现。既可以全面兼容多可系列型号机器人,还可以独立应用于自动化操控系统。

The controller is used to control the robot's operations such as loading and unloading, grasping, polishing, handling, welding, gluing and oiling, as well as realizing the input and output control. The latest DUCO controller has tiny volume while taking into account the safety and flexibility, and has better performance in the field of human cooperation. It can be fully compatible with multiple series of robots, and also can be independently applied to automatic control systems



- 1 系统开关
- 2 AC输入接口
- 3 机械臂接口
- 4 示教器屏蔽接口
- 5 示教器接口
- 6 ANT接口(WIFI天线选配)

- 1 LAN1+USB 3.0
- 2 LAN2+USB 2.0
- 3 COM1 (232通讯)
- 4 EtherCAT2
- 5 EIO (功能拓展IO)  
2AI 2AO 485 INC  
CAN 远程上下电
- 6 CIO(可配置IO)
- 7 DIO(数字IO)
- 8 SIO(安全IO)
- 9 IO POWER(IO供电)
- 10 VGA&COM3/4



## 用户接口

### DI

用户DI	16路(其中8路可配功能DI)
输入有效电平	PNP型, L:-3V-5V, H:11V-30VDC, 2-15mA
开关时间	TON:50ms TOFF:50ms

### DO

用户DO	16路(其中8路可配功能DO)
输出电压	PNP型, 22-28V, Max:0.5A
输出电流	PNP型: <2A(超过2A时, 用户需要扩展电源)
开关时间	TON:50ms TOFF:50ms

### AI/O

信号电流	4-20mA精度±1%
输入阻抗	160Ω
信号电压	0-10V精度±1%(出厂默认)
输入阻抗	15kΩ

模拟信号输入2路  
模拟信号输出2路  
(电气隔离)

### SDI

急停信号输入	1路(无源信号, 干接点输入)
防护性停止输入	1路(无源信号, 干接点输入)
可配置安全输入	2路(无源信号, 干接点输入)

### SDO

可配置安全输出	2路(PNP有源信号)
急停反馈输出	1路(PNP有源信号)
输出电压	23.52V-25.2VDC (Max 0.5A 短路保护)

### 通讯

CAN	1路, 波特率可配置10k、20k、50k、100k、125k、250k、500k、1000k bps
RS485	1路, 波特率可配置4800、9600、19200、38400、115200 bps
LAN	2路(1路千兆、1路百兆) 支持MODBUS TCP、PROFINET、TCP/IP
EtherCAT	1路, EtherCAT通讯
INC编码器信号 A+, A-; B+, B-; Z+, Z-	工作电压: 24VDC 频率: <200KHz 输入: 方波信号

# GCR系列防爆协作机器人

## GCR Series Explosion Proof Cobot

### 产品特征 Product Features

#### Explosion Proof

##### 防爆等级



机械臂: Ex db eb pxb IIC T4 Gb/  
Ex pxb tb IIIC T130°C Db  
Explosion Proof: Ex db eb pxb IIC T4 Gb/Ex pxb tb IIC T130°C Db

#### Multiple Explosion-Proof Design

##### 多重防爆



多重防爆设计,可在50°C的环境温度下正常工作  
Multiple explosion-proof design, it can work normally at an ambient temperature of 50 °C.

#### Replace High-Temperature Operation

##### 代替高危作业



可代替一线高危作业人员在各类易燃易爆、有毒有害、高温高压等石油、天然气、化工环境中工作  
Replace the front-line high-risk operators in all kinds of flammable, explosive, toxic, harmful, high-temperature and high-pressure oil, natural gas and chemical environments, and carry out work all day long.

#### Smart

##### 智能非凡



可配置各类智能感知设备,对现场环境数据进行实时采集与智能分析,全面提升企业数字化运维能力  
Can be configured various intelligent sensing devices to conduct real-time collection and intelligent analysis of on-site environmental data, improve the digital operation and maintenance ability comprehensively of enterprises.

#### Wide Application

##### 应用广泛



负载14-10 kg,工作半径2000mm-1300mm  
应用更广泛  
Widely Applied: Payload 14kg-10kg, Working Range 2000mm-1300mm.

#### Easier-to-use

##### 运维便捷



拖拽示教式编程,降低使用门槛,易操控  
Easier-to-use: With Traction Teach Programming, Less limitation to robot user.

#### Light and Handy

##### 智轻致巧



轻量化设计,可快速部署并适应产线,更高效  
Lightweight & Space-saving: Can be quickly deployed and redeployed to adapt to production line changes



GCR10-1300-Ex

GCR10-2000-Ex

GCR14-1400-Ex

此系列包括GCR14-1400-Ex、GCR10-2000-Ex、GCR10-1300-Ex三款防爆协作机器人产品,作为一线高危人员的保护墙,可代替一线高危作业人员在各类易燃易爆、有毒有害、高温高压等石油、天然气、化工环境中工作。此外,负载与工作半径的显著优势使其能够适应更广泛的应用需求,同时具有安全、易于操作、快速部署、低功耗等协作机器人特性。

This series includes three explosion-proof collaborative robot products: GCR14-1400-Ex, GCR10-2000-Ex, and GCR10-1300-Ex. As a protective wall for front-line high-risk personnel, it can replace front-line high-risk operators to work in various flammable, explosive, toxic, harmful, high-temperature and high-pressure oil, natural gas and chemical environments. The significant advantages of load handling and working radius makes it suitable for a wider range of application requirements. These models are also equipped characteristics such as safety, easy operation, quick deployment, and low power consumption.



	GCR10-1300-Ex	GCR10-2000-Ex	GCR14-1400-Ex
<b>最大负载</b> Max Payload	10kg	10kg	14kg
<b>自由度</b> Degrees of Freedom	6	6	6
<b>末端最大速度</b> Max TCP Speed	3.8m/s	4.0m/s	2.2m/s
<b>末端最大直线速度</b> Max Straight-line Speed	1.5m/s	1.8m/s	1.0m/s
<b>有效工作半径</b> Reach	1300mm	2000mm	1400mm
<b>重复定位精度</b> Repeatability	±0.05mm	±0.05mm	±0.05mm
<b>关节</b> Joint		<b>最大速度Max Speed</b>	
<b>运动范围</b> Joint			
<b>J6</b>	±360°	225°/s	225°/s
<b>J5</b>	±360°	225°/s	225°/s
<b>J4</b>	±360°	225°/s	225°/s
<b>J3</b>	±360°	225°/s	180°/s
<b>J2</b>	±360°	180°/s	120°/s
<b>J1</b>	±360°	180°/s	120°/s
<b>工具接口</b> Tool Interface	GB/T 14468.1-50-4-M6(eqv ISO 9409-1)		
<b>末端I/O</b> End Joint I/O	2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A	2 Dig I/O, 24V,0.6A
<b>气源种类</b> Type of Gas Source	洁净空气	洁净空气	洁净空气
<b>防爆等级</b> Explosion Proof	Ex db eb pxb IIC T4 Gb/Ex pxb tb IIIC T130°C Db		
<b>安装方式</b> Installation	置地式、倒挂式、悬臂式 Installed in any Direction		
<b>IP等级</b> IP Class	IP65	IP65	IP65
<b>环境温度</b> Ambient Temperature Range	-10°C-50°C	-10°C-45°C	-10°C-45°C
<b>储存温度</b> Storage Temperature Range	-40°C-55°C	-40°C-55°C	-40°C-55°C
<b>机器人外形尺寸</b> Robot Dimensions	1512x388x205mm	2300x388x205mm	1695x388x205mm
<b>机器人包装尺寸</b> Robot Package Size	952x509x516mm	1465×516×472mm	1060x500x600mm
<b>重量</b> Weight	40kg	58kg	66kg

# GCR系列防爆协作机器人

## GCR Series Explosion Proof Cobot

### 控制柜 Control Box

重量 Weight	160kg
尺寸 Size	700x500x1000mm
电源输入 Power Supply	200-240VAC,47-63HZ,8A/100-200VAC,47-63HZ,16A
额定功率 Rated Power	600W
本体线缆长度 Cable Length	5m (其他规格请详询经销商)
通讯方式 Communication Mode	TCP/IP,Modbus/TCP,CAN,RS485,Profiet
系统I/O Communication I/O	8DI,8DO(PNP,24V/MAX500mA)
拓展I/O Expand I/O	16DI,16DO(PNP,24V/MAX500mA)/4AI(电压),4AI(电流)
防护等级 IP Class	IP65
工作温度 Operation Temperature	-10°C-50°C
储存温度 Storage Temperature	-40°C-55°C
湿度 Humidity	20%-90%RH
防爆等级 Explosion Proof	Ex db eb pxb IICT4Gb/Ex pxb tb IIIC T130°C Db
气源种类 Type of Gas Source	洁净空气



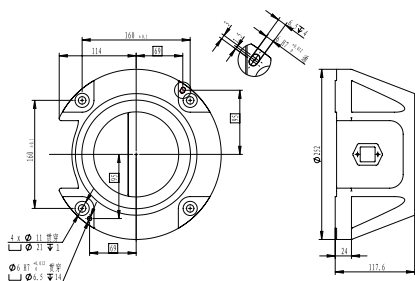
防爆控制柜

### 示教器 Instructors

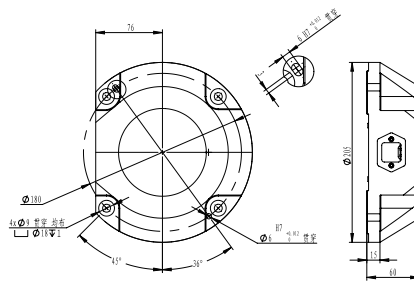
尺寸 Size	2480x172x22mm
操作系统 OS	Android 10.0
显示分辨率 Resolving Power	1280*800
VGA显示尺寸 VGA Size	10.1 16:10
防护等级 IP Class	IP68
重量 Weight	1095g
电源 Power	AC100V~240V、50Hz/60Hz 输出DC 5V/3A
DC接口 DC Ports	DC 5V-3A $\phi$ 3.5mm



Base Flange 底座法兰

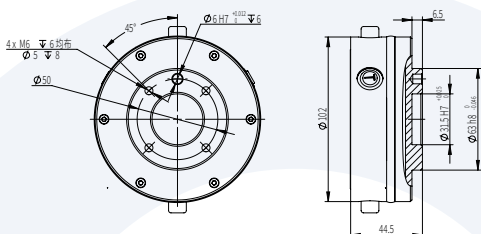


GCR14-1400-Ex/GCR10-2000-Ex

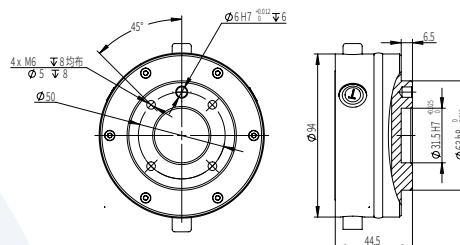


GCR10-1300-Ex

Tool Flange 工具法兰

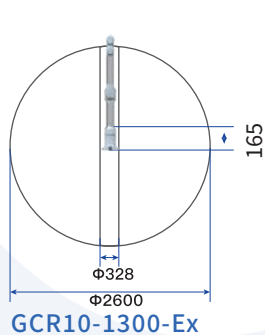


GCR14-1400-Ex

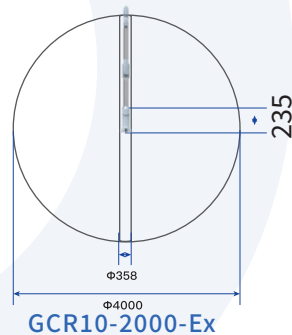


GCR10-1300-Ex/GCR10-2000-Ex

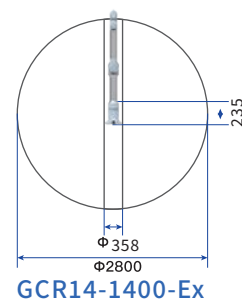
WorkSpace 工作空间



GCR10-1300-Ex

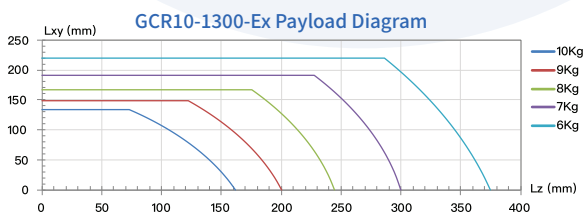


GCR10-2000-Ex

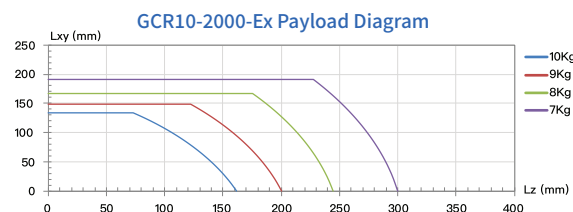


GCR14-1400-Ex

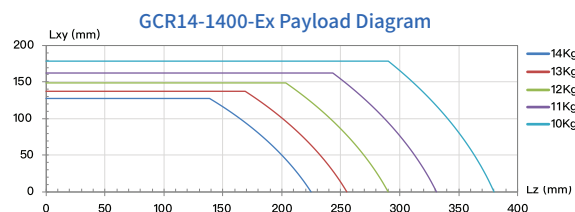
Payload Diagram 负载曲线



GCR10-1300-Ex Payload Diagram



GCR10-2000-Ex Payload Diagram



GCR14-1400-Ex Payload Diagram



# SCR系列协作机器人

## SCR Series Cobot

### 产品特点 Product Features

#### More Flexible

#### 七度自由



七度自由, 丰富姿态适应狭小空间, 更灵活  
More Flexible: With 7 degrees of freedom, the robot can work well in compact space

#### Safety

#### 安全加持



碰撞检测功能, 人机协同作业, 更安全  
Safer: Collision Detection Function enables Human Robot Collaboration

#### Easier-to-use

#### 运维便捷



拖拽示教式编程, 降低使用门槛, 易操控  
Easier-to-use: With Traction Teach Programming, Less limitation to robot user.

#### More Accurate

#### 精而可靠



重复定位精度 $\pm 0.02\text{mm}$ , 更可靠  
More Accurate: Repeatability up to  $\pm 0.02\text{mm}$

#### Economic Efficient

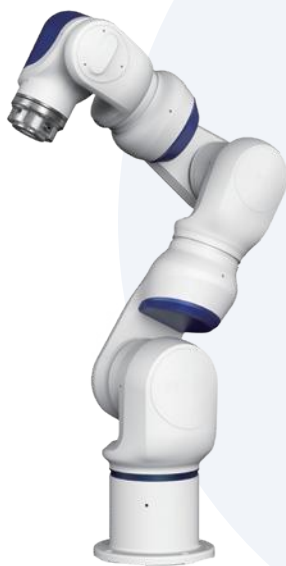
#### 低碳经济



能耗低至250W, 低碳更经济  
Economic Efficient: Power Consumption 250W



SCR3



SCR5

SCR系列协作机器人具备快速配置、拖拽示教、碰撞检测等功能,适用于布局紧凑、精准度高的柔性化生产线,满足精密装配、产品包装、打磨、检测、机床上下料等工业操作需要。其高灵活度、高精度度和高安全性的产品特征,将开拓新的工业生产方式,步入人机协作新时代。

SCR series Cobot has various functions such as rapid deployment, traction teaching and collision detection. It is particularly suitable for flexible production lines with compact layout and high precision to conduct precision assembly, product packaging, polishing, testing, machine loading and unloading and other industrial operations. SCR series Cobot, with its high flexibility, precision, and safety, will open up a brand new way of industrial production and lead the new era of human-machine collaboration.



## SCR3

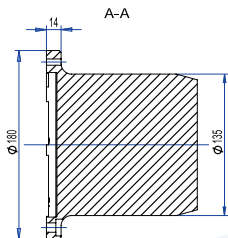
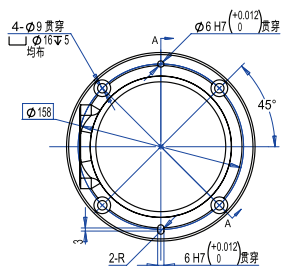
## SCR5

最大负载 Max Payload	3kg	5kg (5.5kg*1)		
自由度 Degrees of Freedom	7	7		
末端最大速度 Max TCP Speed	2.5m/s	2.0m/s		
末端最大直线速度 Max Straight-line Speed	1.0m/s	1.0m/s		
有效工作半径 Reach	600mm	800mm		
重复定位精度 Repeatability	±0.02mm	±0.02mm		
关节 Joint	<b>运动范围</b> Range	<b>最大速度</b> Max Speed	<b>运动范围</b> Range	<b>最大速度</b> Max Speed
J7	无限旋转	180°/s	±180°	180°/s
J6	±120°	180°/s	±110°	180°/s
J5	±180°	180°/s	±180°	180°/s
J4	±120°	180°/s	±115°	180°/s
J3	±180°	180°/s	±180°	180°/s
J2	±115°	180°/s	±105°	180°/s
J1	±180°	180°/s	±180°	180°/s
工具接口 Tool Interface	GB/T 14468.1-50-4-M6(eqv ISO 9409-1)	GB/T 14468.1-50-4-M6(eqv ISO 9409-1)		
I/O	控制柜 Control Box I/O	14 Dig I/O, 24V,0.5A	14 Dig I/O, 24V,0.5A	
	末端 End Joint I/O	2 Dig I/O, 24V,1A	2 Dig I/O, 24V,1A	
电源 Power Supply	230VAC(-15%~+10%),50-60Hz	230VAC(-15%~+10%),50-60Hz		
功耗 Power Consumption	典型工况约250W Typical Power Consumption 250W	典型工况约400W Typical Power Consumption 400W		
机器人外形尺寸 Robot Dimensions	1035x232x202mm	1285x220x240mm		
控制柜尺寸 Control Box Size	530x480x180mm	530x480x180mm		
安装方式 Installation	置地式、倒挂式、悬臂式 Installed in any Direction	置地式、倒挂式、悬臂式 Installed in any Direction		
环境温度 Ambient Temperature Range	-10°C-45°C	-10°C-45°C		
储存温度 Storage Temperature Range	-40°C-55°C	-40°C-55°C		
IP等级 IP Class	IP54	IP54		
机器人包装尺寸 Robot Package Size	735x635x350mm	735x635x350mm		
控制器系统包装 Control System Package Size	698x588x450mm	698x588x450mm		
净重/毛重 Net/Gross Weight	24kg/34kg	24kg/33kg		

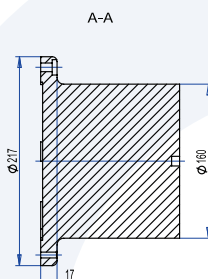
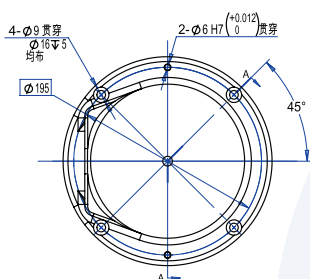
# SCR系列协作机器人

## SCR Series Cobot

### 底座法兰 Base Flange

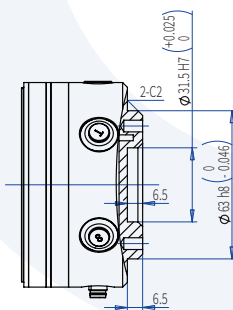
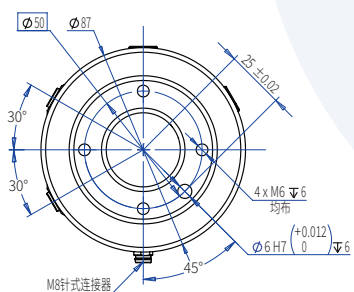


SCR3

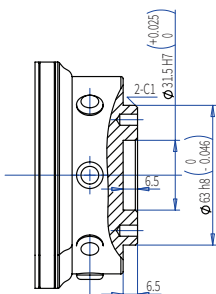
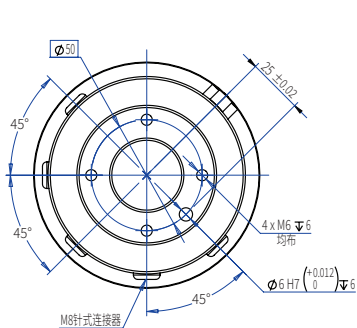


SCR5

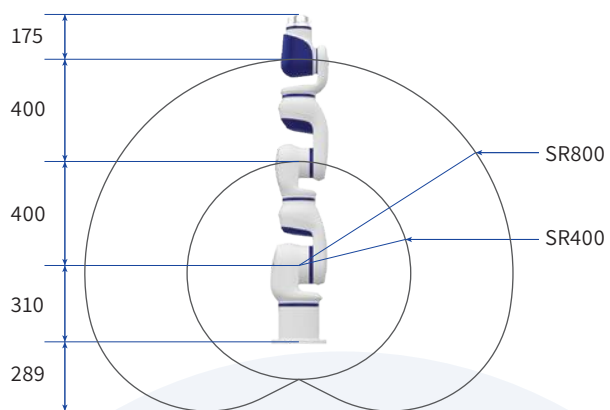
### 工具法兰 Tool Flange



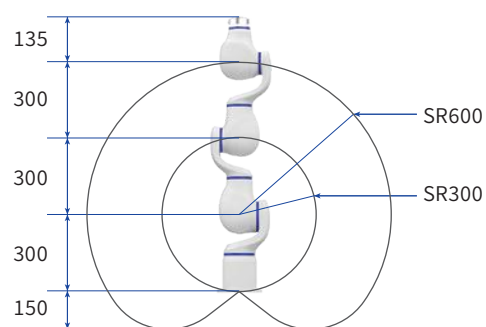
SCR3



SCR5

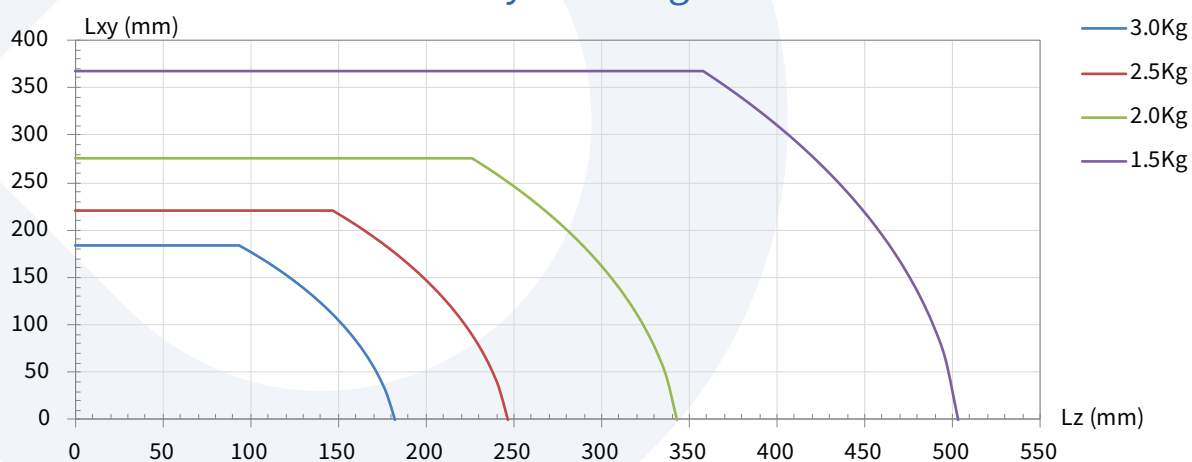


SCR3

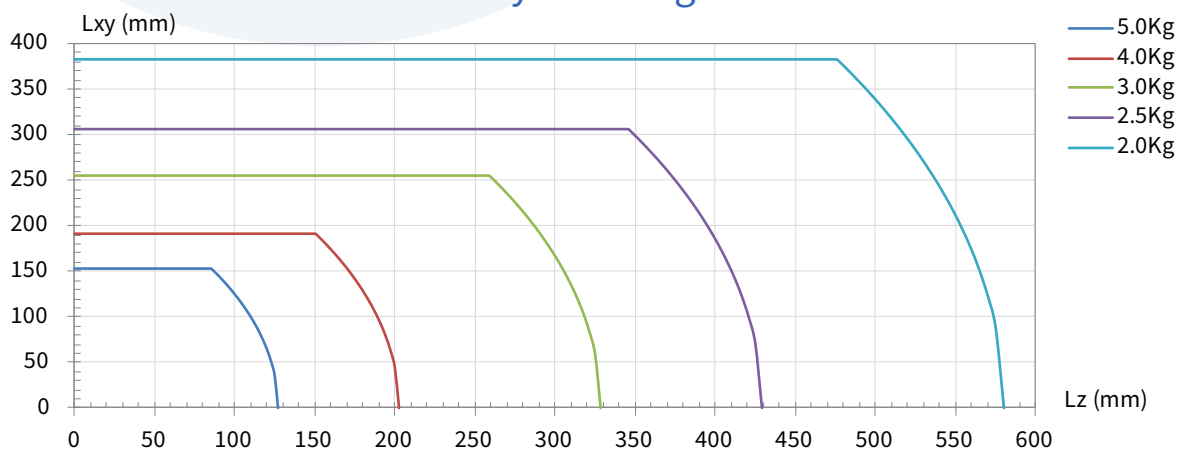


SCR5

SCR3 Payload Diagram



SCR5 Payload Diagram



# 双臂协作机器人

## Dual Arm Series Cobot

### 产品特征 Product Features

#### More Intelligent

##### 双臂协作



七度自由, 丰富姿态适应狭小空间, 更灵活  
More Flexible: With 7 degrees of freedom, the robot can work well in compact space

#### Safety

##### 安全加持



碰撞检测功能, 人机协同作业, 更安全  
Safer: Collision Detection Function enables Human Robot Collaboration

#### Easier-to-use

##### 运维便捷



拖拽示教式编程, 降低使用门槛, 易操控  
Easier-to-use: With Traction Teach Programming, Less limitation to robot user.

#### Attractive and Compact Design

##### 一体化设计



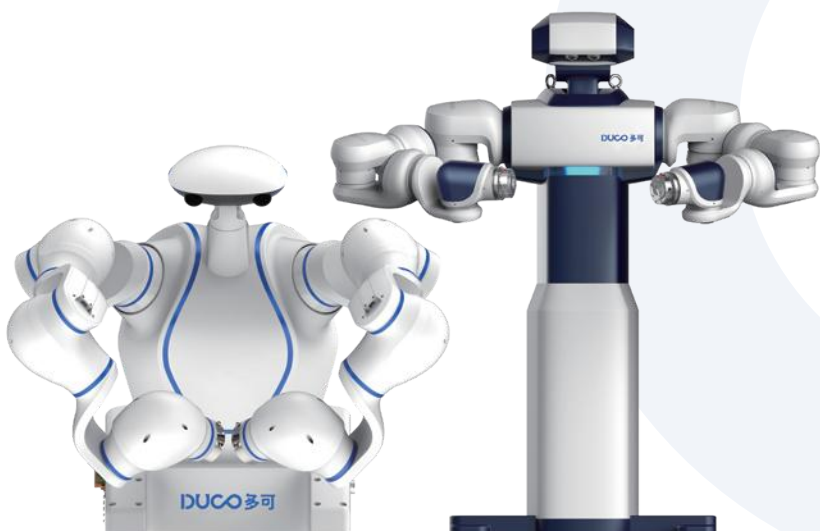
一体化设计, 内置控制柜, 美观紧凑  
Attractive and Compact Design: The robot is integrated designed with build-in control box.

#### More Accurate

##### 精而可靠



重复定位精度 $\pm 0.02\text{mm}$ , 更可靠  
More Accurate: Repeatability up to  $\pm 0.02\text{mm}$



DSCR3

DSCR5

DSCR系列双臂协作机器人具有高灵活性、安全性、快速配置等特点, 具备实时深度信息和三维重构功能。能够为用户提供快速、安全、灵活、精准、高效的旋拧、定位等全套装配作业解决方案, 更加集成化、柔性化, 并可以为用户提供更加自由、开放的开发环境。

DSCR series Dual Arm Cobot is featured with high flexibility, extreme safety, rapid deployment. It provides an overall solution for assembling by fast, safe, agile, accurate, and highly efficient positioning and operation, which also provides a better develop environment with more freedom and possibility for users.



DSCR3



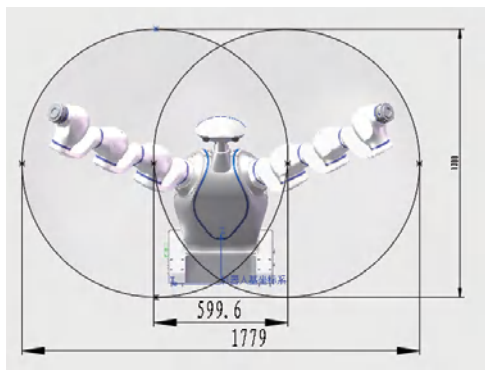
DSCR5

<b>最大负载</b> Max Payload	6kg(3kg x 2)		10kg(5kg x 2)	
<b>自由度</b> Degrees of Freedom	单臂7 x 2, 头部2, 头部选配 Each arm 7 x 2, Head 2, Head is optional		单臂7 x 2, 头部2, 头部选配 Each arm 7 x 2, Head 2, Head is optional	
<b>末端最大速度</b> Max TCP Speed	2.5m/s		2.0m/s	
<b>末端最大直线速度</b> Max Straight-line Speed	1.0m/s		1.0m/s	
<b>有效工作半径</b> Reach	600mm x 2		800mm x 2	
<b>重复定位精度</b> Repeatability	±0.02mm		±0.02mm	
<b>关节</b> Joint	<b>运动范围</b> Range	<b>最大速度</b> Max Speed	<b>运动范围</b> Range	<b>最大速度</b> Max Speed
<b>J7</b>	±180°	180°/s	±180°	180°/s
<b>J6</b>	±120°	180°/s	±110°	180°/s
<b>J5</b>	±180°	180°/s	±180°	180°/s
<b>J4</b>	±120°	180°/s	±115°	180°/s
<b>J3</b>	±180°	180°/s	±180°	180°/s
<b>J2</b>	±115°	180°/s	±105°	180°/s
<b>J1</b>	±180°	180°/s	±180°	180°/s
<b>工具接口</b> Tool Interface	GB/T 14468.1-50-4-M6(eqv ISO 9409-1)		GB/T 14468.1-50-4-M6(eqv ISO 9409-1)	
<b>单臂末端I/O</b> Tool I/O of Each Arm	2 Dig I/O, 24V,1A		2 Dig I/O, 24V,1A	
<b>电源</b> Power Supply	230VAC(-15%~+10%),50-60Hz		230VAC(-15%~+10%),50-60Hz	
<b>功耗</b> Power Consumption	典型工况约500W Typical Power Consumption 500W		典型工况约800W Typical Power Consumption 800W	
<b>单臂外形尺寸</b> Robot Dimensions	1035x232x202mm		1285x220x240mm	
<b>控制系统</b> Control System	集成在机器人内部 Built-in Control System		集成在机器人内部 Built-in Control System	
<b>安装方式</b> Installation	置地式、倒挂式、悬臂式 Installed in any Direction		置地式、倒挂式、悬臂式 Installed in any Direction	
<b>环境温度</b> Ambient Temperature Range	-10°C-45°C		-10°C-45°C	
<b>储存温度</b> Storage Temperature Range	-40°C-55°C		-40°C-55°C	
<b>IP等级</b> IP Class	IP30		IP30	
<b>包装尺寸</b> Robot Package Size	1200x1000x1040mm		1100x1100x1900mm	
<b>净重/毛重</b> Net/Gross Weight	70kg/100kg		200kg/250kg	

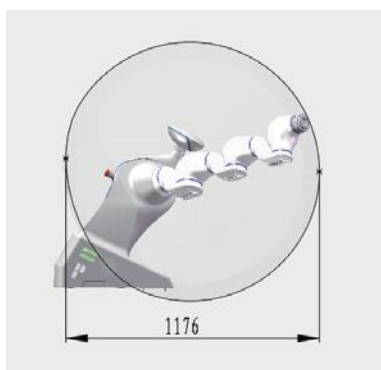
# 双臂协作机器人

## Dual Arm Series Cobot

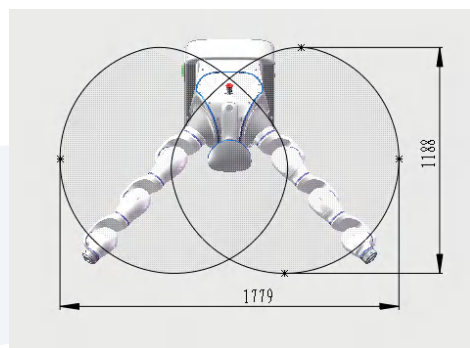
### 工作空间 Workspace



前视图 Front View



侧视图 Side View

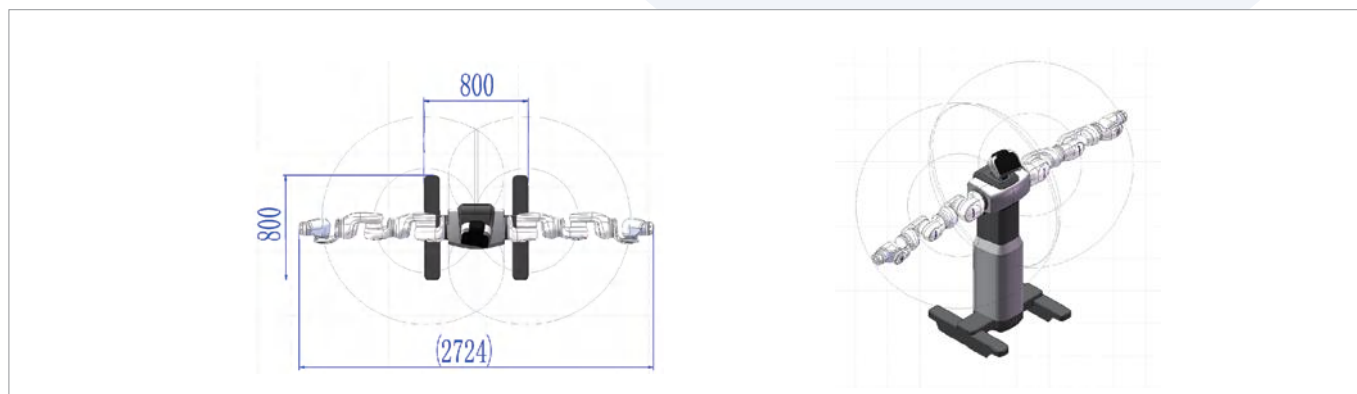


俯视图 Top View



前视图 Front View

侧视图 Side View



俯视图 Top View

轴视图 Axis View

# TCR桌面式协作机器人

## TCT Table-top Cobot

Product Features

产品特征

- 
**多彩外观可定制**  
 Colorful appearance available for customization
- 
**人性化网页版操作系统, 尽享人机协作乐趣**  
 User-friendly Web UI system, enjoyable for human-robot collaboration
- 
**重复定位精度±0.05mm, 工作轨迹更加精准、流畅**  
 Repeatability up to ±0.05mm, Working path is more precise and smoother
- 
**接口丰富, 满足工业、教育等多种行业应用需求**  
 With various interfaces, able to be applied in industry and education
- 
**碰撞检测, 灵敏度可调**  
 Collision Detection, Sensitivity adjustable



TCR

TCR桌面级协作机器人自重轻、负载小0.5~1kg、臂展范围300~500mm, 更适宜桌面级机器人工作任务。

TCR Table-top collaborative robot has the features of light weight, payload 0.5~1kg, reach 300~500mm and is particularly suitable for table-top tasks.

Technical Parameters

技术参数

最大负载 Max Payload	0.5~1kg
自由度 Degrees of Freedom	6
工作空间 Reach	300mm ~500mm
末端最大速度 Max TCP Speed	0.8m/s
重量 (机械臂) Weight	5kg~6.8kg
重复定位精度 Repeatability	±0.05mm (GB/T 12642-2013 eqv ISO 9283)
工具接口 Tool Interface	GB/T 14468.1-50-4-M3 (eqv ISO 9409-1)
电源 Power Supply	230VAC (-15%~+10%), 50-60Hz
功耗 Power Consumption	典型工况约100W Typical work condition 100W
环境温度 Ambient Temperature	0°C ~ 45°C
噪声 Noise	≤75dB(A)



# 多可®移动协作机器人

## DUCO Hybrid Cobot

### ARV Customized Wheel Train

#### 专用底盘轮系



为移动协作机器人量身定制的轮系,更稳更可靠  
The customized wheel train for ARVt comes more stable and reliable

B系列

T系列

### 360° Safety Protection

#### 全域安全防护



地面+空域,实时安全防护,实现人机安全协作  
Real-time 360° security protection achieves man-machine security cooperation

### Integrated Ecological Technical Support

#### 完整的生态技术支持



高效对接各种工具,抓取更便捷  
Efficient docking of various tools and more convenient for grasping



多可移动协作机器人集成自主研发的移动平台和协作机器人,可搭载自主研发的视觉和夹具等执行单元,实现对物料的搬运、装配、检测和精密加工等功能应用。多可移动协作机器人拥有全方位的安全防护、多种交互和通讯方式且能很好的对接客户系统。更可提供定制化解决方案、定制化调度系统、现场指导及其完善的售后服务等,保证客户提体验。

多可移动协作机器人作为标准化产品,具有非标设备所不具备的一致性、可靠性及其稳定性。



L系列

Integrated Teach Screen

集成式示教器



一屏实现移动平台与协作臂可视化联动调试，部署更快捷

Realize visual linkage debugging of mobile platform and collaboration arm on one screen, fast deployment

Charging Variety

充电多样性



接触式/无线/自动充电方式，满足短时、实时及其7\*24全天运行

Contact/wireless/automatic charging mode, meeting the requirements of short-time, real-time and 7 \* 24 all-day operation

ARV Integrated & Open Controller

车载集成&开放控制器



开放式编程环境+多种通讯及数据接口+自主检测，可满足更多定制化需求

Open programming environment+multiple communication and data interfaces+independent detection can meet more customization requirements

DUCO ARV are integrated with independently developed mobile platforms and Cobot, with independently developed vision and fixture and other execution units to realize functional applications such as material handling, assembly, detection and precision processing. DUCO ARV have comprehensive security protection, multiple interaction and communication modes and can well interface with customer systems. It can also provide customized solutions, customized scheduling system, on-site guidance and perfect after-sales service to ensure customer experience.

As a standardized product, DUCO ARV have consistency, reliability and stability that non-standard equipment does not have.

# 多可®移动协作机器人

## DUCO Hybrid Cobot



HC-X2-B



HC-X3-B

### 技术参数 Technical Parameters

<b>车体尺寸</b> Dimensions (L*W*H, excluding cooperation arm and side obstacle avoidance laser)	1250mm×600mm×700mm	950mm×600mm×700mm
<b>综合精度<sup>(1)</sup></b> Comprehensive Accuracy	±0.3mm	
<b>总重量</b> Total Weight	约320/330/361/350/360KG (搭载协作臂GCR5/10/14/16/20)	约270/280/300/KG (搭载协作臂GCR5/10/14/16)
<b>导航方式</b> Navigation Mode	SLAM & QR CODE	
<b>末端负载</b> Cobot Payload	5kg/10kg/14kg/20kg (搭载协作臂GCR5/10/14/16/20)	5kg/10kg/14kg/16kg (搭载协作臂GCR5/10/14/16)
<b>平台负载</b> Platform Load	670kg Max	350kg Max
<b>驱动形式</b> Driving Form	双轮差速	双轮差速
<b>转弯半径</b> Turning Radius	500mm Min	500mm Min
<b>蟹行速度(任意角度)</b> Crab Speed (Any Angle)	/	/
<b>行走通道宽度</b> Width of Walking Passage	900mm Min	900mm Min
<b>移动能力</b> Mobile Capability	<b>移动速度</b> Movement Speed	≤1m/s
	<b>转弯速度</b> Turning Speed	≤0.5m/s
	<b>越障高度</b> Obstacle Clearance Height	10mm
	<b>过沟宽度</b> Trench Width	30mm
	<b>离地间隙</b> Ground Clearance	30mm
	<b>爬坡能力</b> Gradeability	<5°
<b>停车精度</b> Parking Accuracy	±5mm位置精度, ±1°角度精度	
<b>电池</b> Battery	DC51.2V 磷酸铁锂	DC51.2V 磷酸铁锂(选装)
<b>电池性能<sup>(2)</sup></b> Battery Performance	<b>容量</b> Capacity	DC51.2V 磷酸铁锂
	52Ah	80Ah
	<b>运行时间</b> Running Time	DC51.2V 磷酸铁锂(选装)
	约5.5小时	42Ah
	<b>充电时间</b> Charging Time	80Ah
	≤1.8h	约5.5小时
<b>充电方式</b> Charging Mode	约8小时	约8小时
<b>安全装置</b> Safety Device	接触式充电 / 无线充电 / 换电(三种充电方式均支持手动或自动)	
<b>接口</b> Interface	碰撞检测/安全触边/避障激光/急停等	
<b>按钮</b> Button	硬件支持CAN总线、RS-485、RS-232、RJ45、USB	
<b>使用环境</b> Use Environment	通信协议支持CANOPEN、Modbus等	
	启动按钮/暂停按钮/复位按钮/示教按钮	
	环境温度:-10°C至45°C	
	环境湿度:5%至95%(无结露)	
	运行环境:仅限室内使用	
	洁净等级:无 / Class6(千级) / Class5(百级)	

(1) 综合精度取决于末端定位装置的精度、移动平台的停车精度、协作臂末端的精度等。

(2) 运行时间取决于工况、节拍等要求。



HC-X4-B



HC-X6-B



HC-X2-T



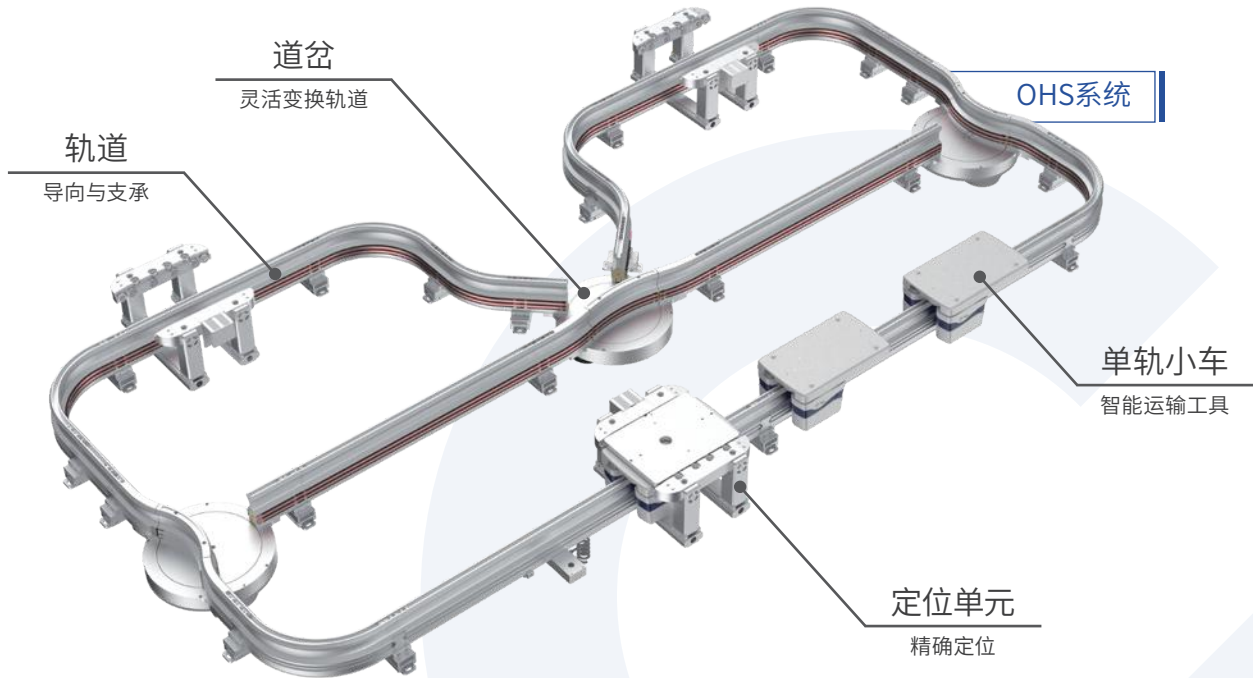
HC-X2-L

800mm×600mm×700mm		1250mm×700mm×800mm		1250mm×600mm×1070mm		1250mm×600mm×700mm	
±0.3mm							
约247/260KG (搭载协作臂GCR5/10)		约392/405/436/435KG (搭载协作臂GCR5/10/14/20)		约330/361/350/360KG (搭载协作臂GCR10/14/16/20)		约320/330/361/350/360KG (搭载协作臂GCR5/10/14/16/20)	
SLAM & QR CODE							
5kg/10kg (搭载协作臂GCR5/10)		约392/405/436/435KG (搭载协作臂GCR5/10/14/20)		10kg/14kg/20kg (搭载协作臂GCR10/14/16/20)		5kg/10kg/14kg/20kg (搭载协作臂GCR5/10/14/16/20)	
120kg Max		470kg Max		100kg Max		670kg Max	
双轮差速		麦克纳姆轮		双轮差速		双轮差速	
500mm Min		/		500mm Min		500mm Min	
/		≤0.5m/s		/		/	
900mm Min		1000mm Min		900mm Min		900mm Min	
≤0.8m/s		≤0.8m/s		≤1m/s		≤1m/s	
≤0.5m/s		≤0.5m/s		≤0.5m/s		≤0.5m/s	
10mm		10mm		10mm		10mm	
30mm		80mm		30mm		30mm	
30mm		45mm		30mm		30mm	
<5°		<5°		<5°		<5°	
±5mm位置精度, ±1°角度精度							
DC51.2V 磷酸铁锂	DC51.2V 磷酸铁锂(选装)	DC51.2V 磷酸铁锂	DC51.2V 磷酸铁锂(选装)	DC51.2V 磷酸铁锂	DC51.2V 磷酸铁锂(选装)	DC51.2V 磷酸铁锂	
28Ah	42Ah/80Ah	42Ah	80Ah	52Ah	80Ah	52Ah	
约5.5小时	约8小时	约5.5小时	约8小时	约5.5小时	约8小时	约5.5小时	
≤1.5h	≤2h	≤1.5h	≤2h	≤1.8h	≤2h	≤1.8h	
接触式充电 / 无线充电 / 换电(三种充电方式均支持手动或自动)						接触式充电(手动或自动)	
碰撞检测/安全触边/避障激光/急停等							
硬件支持CAN总线、RS-485、RS-232、RJ45、USB							
通信协议支持CANOPEN、Modbus等							
启动按钮/暂停按钮/复位按钮/示教按钮							
环境温度:-10°C至45°C							
环境湿度:5%至95%(无结露)							
运行环境:仅限室内使用							
洁净等级:无 / Class6(千级) / Class5(百级)							

# OHS智能物料输送系统

## Over-Head-Shuttle System

- 模块化设计
- 全自动运行
- 柔性化布置
- 节能高效
- 灵活组合
- 节约空间
- 易于扩展



OHS智能物料输送系统(以下简称OHS系统)可将生产设备和工艺流程有机地串联起来,系统根据物料输送的起点和目的地,规划小车运行的路径,实现物料的全自动输送,满足柔性化生产系统对物料输送的要求。具有节能,洁净,高效,灵活等特点。OHS系统的安装方式很灵活,可以吊装也可以地装,在生产面积很紧张等场合具有独到的优势。

### 主要模块 Main Modules

#### 轨道与附件

- 导向与支承
- 全轨道供电
- 传感器安装
- 多种规格
- 灵活组合

OHS轨道系统对小车在运行中提供路径导向。供电系统沿着轨道敷设,为全轨道供电。OHS的轨道系统具有多种长度和弯曲半径的规格,可以根据需要进行灵活组合及配置。



#### 轨道连接与供电模块

- 轨道连接
- 电源接入
- 受力支点
- 轨道安装调节

OHS的轨道连接与供电模块是轨道系统不可缺少的有机组成部分,能够起到连接不同轨道,引导电源接入轨道和系统受力支点的作用。



## 单轨小车

- 电机驱动
- 无线通信
- 防碰撞
- 防堵转
- 运行状态显示

单轨小车是OHS的核心组成部分,是在轨运行的智能物料运输车辆。小车从轨道取电,由车载动力系统驱动。具有防碰撞,防堵转,运行状态显示等特点。



## 道岔

- 电机驱动
- 路径切换
- 防堵转
- 到位锁止
- 可编程控制
- 上电复位自检
- 可组合运用

道岔是OHS控制小车沿着不同路径运行的关键模块。通过对道岔的合理设置,可以形成轨道系统的干路和支路,以及把轨道干路分流成不同的支路以及由不同支路汇合至干路的功能。



## 定位单元

- 气缸驱动
- 精确定位
- 操作载荷支承
- 水平可调

定位单元是OHS与生产过程的设备和站点之间交互的单元,也是车载物料精确定位的站点。



## 通信模块

- 光电通信
- 小车启动控制
- I/O & RS232
- 可编程控制
- 状态显示
- 灵活布置

通信模块是小车与上层控制系统之间进行通信的核心模块。控制系统可通过通信模块与小车进行无线通信,查询小车的信息并控制小车的运行。



## 轨道直段及辅件

规格	值
直段米重 (kg)	5.6
材料	铝合金
表面处理	阳极氧化
辅件1	镀镍铜
辅件2	塑料

## 轨道弯段及辅件

规格	规格				
尺寸	90°R220	45°R220	90°R520	45°R520	
净重 (kg)	3.7	2.2	7.8	4.3	
材料	铝合金				
表面处理	阳极氧化				
辅件1	镀镍铜				
辅件2	塑料				

## 轨道连接与供电模块及辅件

规格	值
净重 (kg)	0.5
材料	铝合金
辅件1	铜
辅件2	塑料
辅件3	钢

## 定位单元

规格	值
长 X 宽 X 高 (mm)	325 X 410 X 170
净重 (kg)	7.8
定位精度 (mm)	±0.1
操作压力 (bar)	4-6
额定工作压力 (bar)	5
气路连接	ø4mm

## 单轨小车 (单轴)

规格	值
长 X 宽 X 高 (mm)	350 X 203 X 150
自重 (kg)	≤4.5
最大运行速度 (m/min)	36 或 60 (可选)
减速运行速度 (m/min)	20 (可调)
最大负载 (kg)	11 (不含自重)
停车精度 (mm)	±1
供电方式	滚动接触
运行方向	正向和逆向
供电电压 (VDC)	24

## 道岔

规格	值
材料	铝合金
旋转角度 (°) (干路/支路)	60, 150, 210
旋转角度 (°) (分流/汇聚)	120, 240
接口	1 x RS232, 3 x DI, 4 x DO
负载 (kg)	34(含自重)
供电电压 (VDC)	24
净重 (KG)	14
旋转时间 (60°, 150°, 210°)	150°=1.4s, 60°=0.65s, 210°=1.9s
旋转时间 (120°, 240°)	120°=1.3s, 240°=2.3s

## 通信模块

规格	值
长 X 宽 X 高 (mm)	130 X 56 X 30
自重 (kg)	0.5
供电电压 (VDC)	24
DI (路)	3
DO (路)	3
RS232 (路)	1

# 多可®智能应用控制器

## DUCO Mind

多可协作机器人智能控制器由智能软件、智能控制器及相机等外设传感器组成,产品定位于利用多传感融合及人工智能技术为协作机器人应用赋能。

DUCO Mind is composed of intelligent software, intelligent controller and peripherals such as camera and other sensors. DUCO Mind is positioned to empower DUCO robot applications with multi-sensor fusion and AI technology.



DUCO Mind是一款集成了2D、3D和深度学习功能的智能应用控制器、软件算法完全由中科新松自主开发,可用于搬运(拆码垛)、上料、拣选、分类、定位、涂胶、装配、检测等应用场景、具有高性价比,开放性强、易部署实施的优势。



深度学习  
Deep Learning



3D定位  
3D Location



2D识别  
2D Recognition

Product Features 硬件组成



高性能CPU (i3/i5/i7)  
High performance CPU (i3/i5/i7)



GPU算法加速  
GPU algorithm acceleration



串口等扩展接口  
Serial port and other expansion interfaces



DI-DO  
DI-DO



多种相机接口 (POE, USB3.0)  
Multiple camera interfaces (POE, USB3.0)

Technical Parameters 技术参数



DUCO Mind-Mini



DUCO Mind-Lite



DUCO Mind-Power



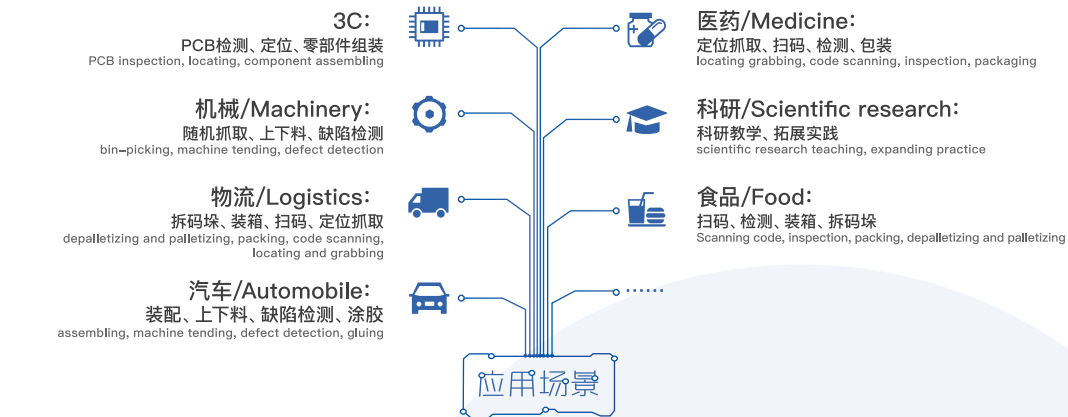
DUCO Mind-Ai

CPU	Intel® Core™ i3-6100	Intel® Core™ i5-7500	Intel® Core™ i7-8700	Intel® Core™ i7-8700
GPU	-	-	Nvidia 1050Ti	Nvidia 2080T
内存	8G	16G	16G	16G
硬盘	128G	256G	256G	256G
网卡	千兆网口*2	千兆网口*2	千兆网口*2	千兆网口*2
POE	-	千兆网口*4	千兆网口*4	-
I/O	-	DI*16/DO*16	DI*16/DO*16	DI*16/DO*16
体积	260mm*175mm*79mm	260mm*215mm*79mm	260mm*215mm*79mm	330mm*210mm*172mm
重量	3.8 kg	4.3 kg	4.8 kg	5.6 kg



# 多可®智能应用控制器

## DUCO Mind



DUCO Mind-DL-Label界面

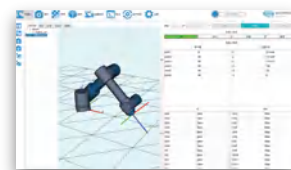


DUCO Mind-DL-Label是一款图像标注软件,可以对采集到的原始图像进行矩形、多边形、旋转矩形以及类别标注,并为每个标注框打上标签,最终导出适用于DUCO Mind-DL-Train的标准格式数据集。

DUCO Mind-DL-Train 界面



DUCO Mind-DL-Train是一款模型训练软件,可以接受DUCO Mind-DL-Label软件导出的数据集进行模型训练,并且可以选择训练方式,包括目标检测、旋转目标检测、实例分割、分类等方式,最终导出适用于DUCO Mind智能软件的标准格式模型文件。



# 多可协作机器人配件

## DUCO Cobot Accessories

### 视觉



### 力控传感器



### 电爪



### 气爪吸盘



### 激光扫描仪



### 网关&IO拓展模块



### 快换法兰



### 管线包



### 仿真与离线编程



### 拧紧系统



### 光学定位&三维扫描仪



### 防护服



### 焊机



### 升降立柱



DUCO 多可

# 引领协作机器人发展的行业先锋

We are Dedicated to the Advancement of Cobot



多可帮助您开启更多可能

协作安全、简单易用、灵活智能的机器人

与您协手营造更佳工作场景, 为您创造更多价值

DUCO Cobot for more, collaborate and safety, easy to work, flexible and intelligent, working with you to create a better working scene and more value for you

