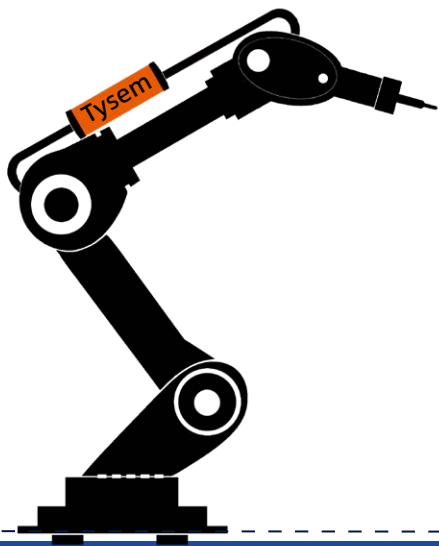


Tysem



湖北研宏机器人技术有限公司
Hubei Yanhong Robotic Technology Co., Ltd.

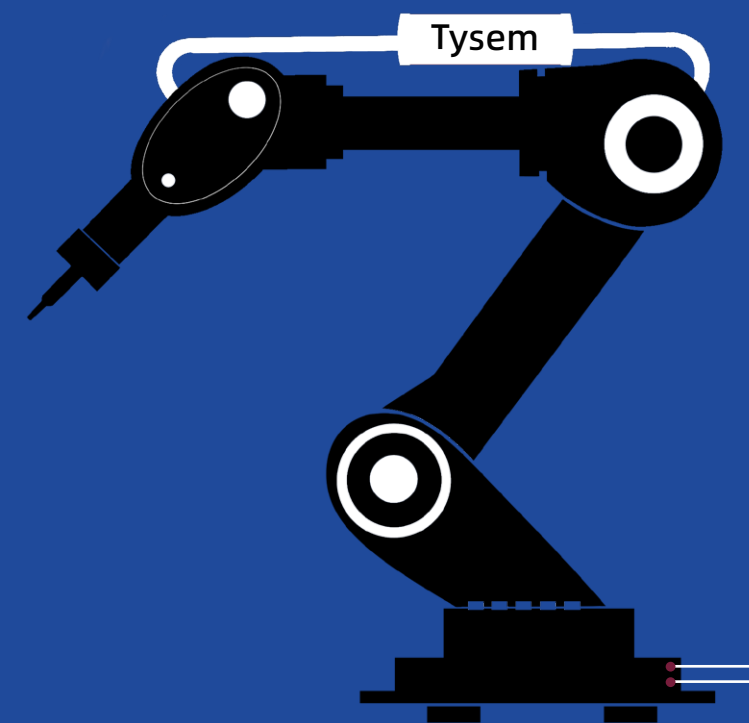


Tysem 大盛管线包 (选型手册)

Tysem Robotic Dresspack System Selection Manual

收线有道
效率领跑
预算无忧

Cables in check
speed leads the tech
budget intact



武汉总部

湖北研宏机器人技术有限公司
地址：武汉经济技术开发区创业路建银公馆 B 座 1312-15

Wuhan Headquarters
Hubei Yanhong Robotics Technology Co., Ltd.
Address: Room 1312/15, Building B, Jianyin Mansion,
Chuangye Road, Wuhan Economic and Technological
Development Zone.

17702789163@tysem.cn

www.tysem.cn



Tysem 大盛管线包

湖北研宏机器人技术有限公司

Choose us



选择我们

源头厂家，十年经验 案例丰富，免费设计
价格便宜，质量可靠 快速交付，五星服务

原材料

(如铜丝、有机材料粉末)
均来自国内头部供应商
(如正雄、中国石化等)，
无“卡脖子”风险

**多家汽车主机厂
合作供应商**

100% 本土供应链

**1
Day**

最快一天发货

细分场景深耕

针对高温、高粉尘、
盐雾、铁粉等场景
的专用方案



目录 CATALOGUE



01. 公司简介

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公司资质
适配品牌
合作伙伴

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Company Qualifications
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Partners

02. 行业与工艺

Industries and Processes

适配行业与工艺
通用方案
方案展示

Compatible Industries and Processes
Universal Solutions
Solutions Showcase

03. 质量管理体系

Quality Management

配置清单
质量管理
国家标准
团体标准
性能检测
设备展示

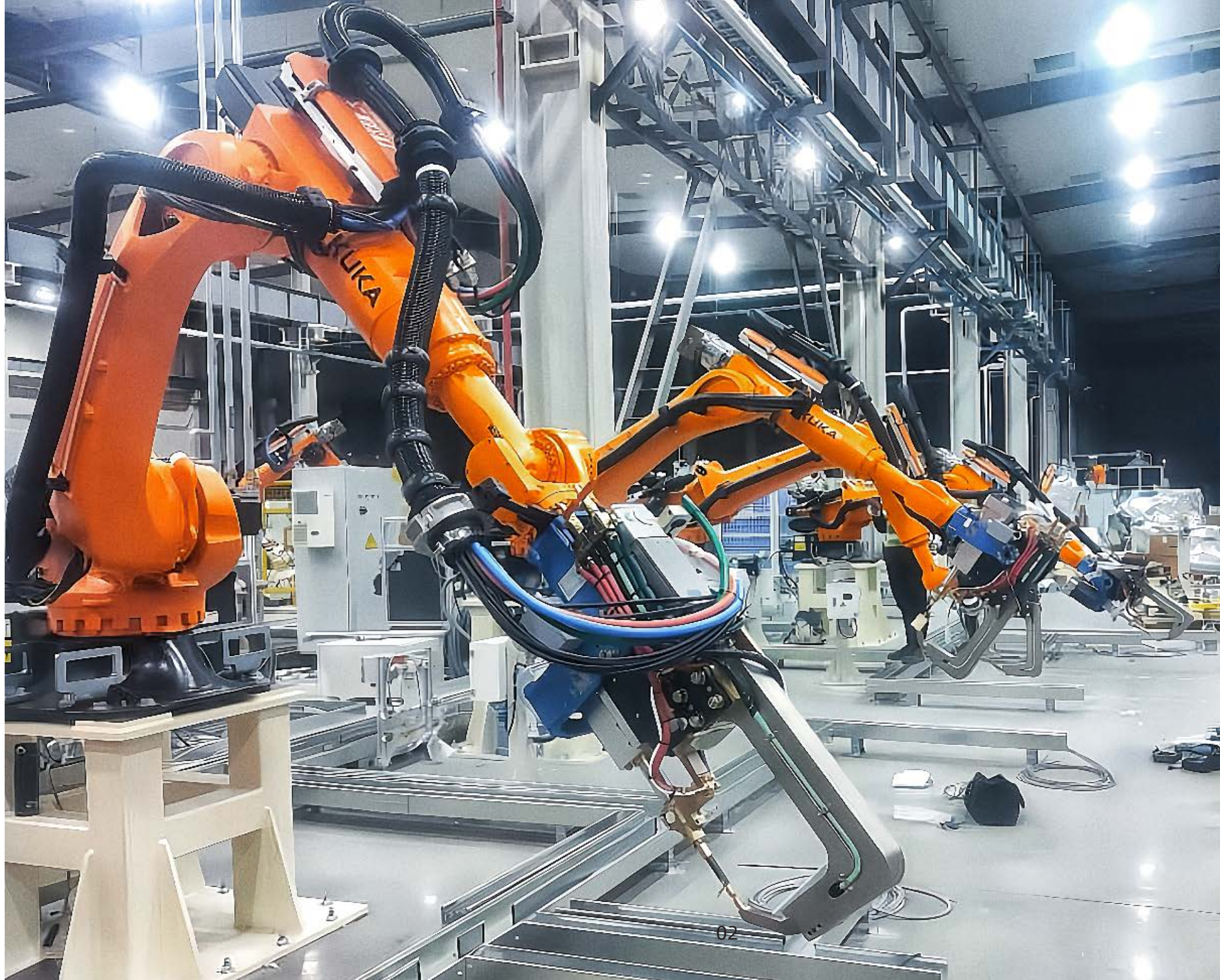
Configuration List
Quality Management
National Standard
Group Standard
Performance Testing
Equipment

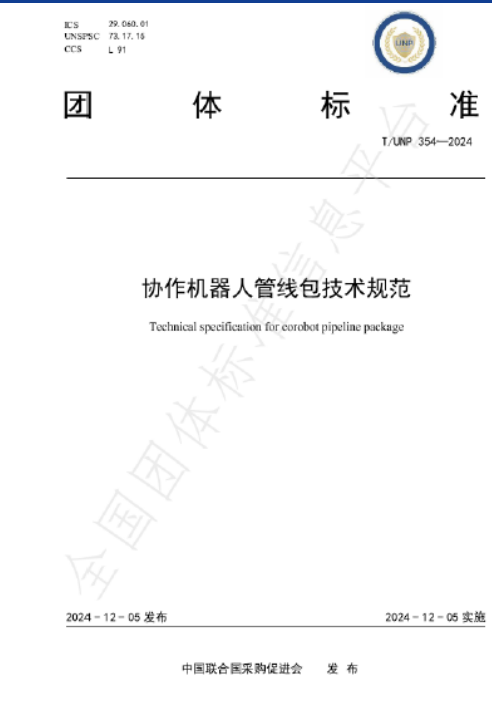
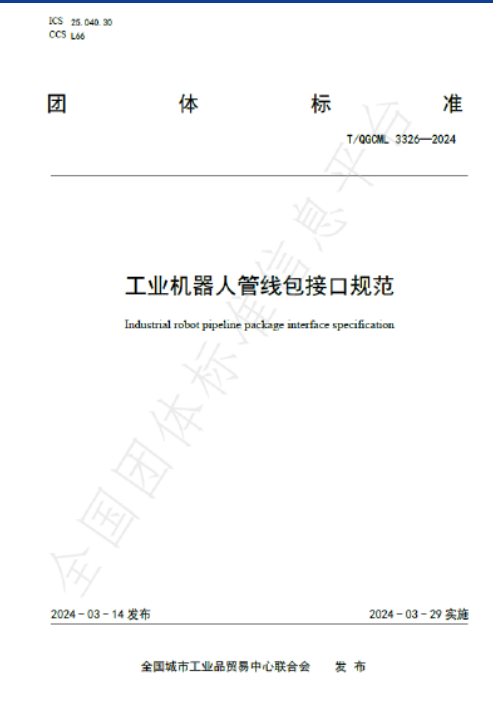
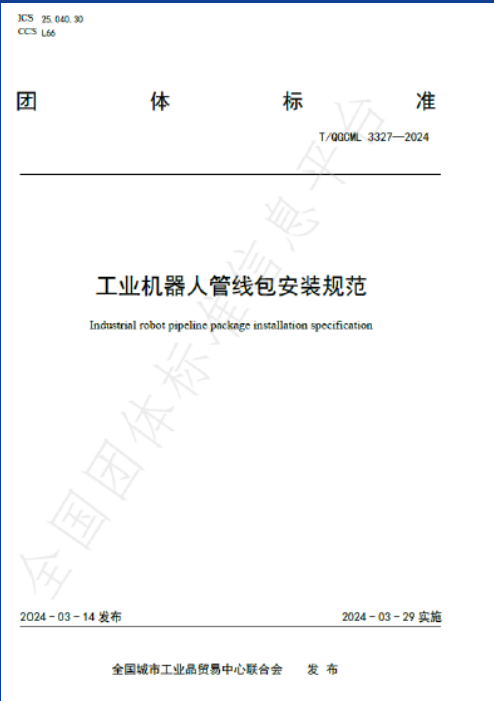
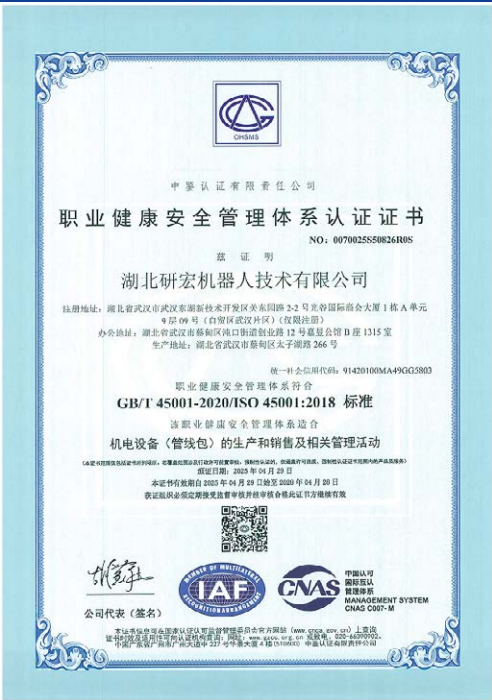


关于我们

研宏 Tysem® (大盛) 位于湖北武汉。团队2014年起,为汽车行业提供国际一线品牌机器人线缆、管线包的国产平替解决方案。经过十年的发展,Tysem 大盛机器人管线包作为机器人管线包团标制定者,致力于为制造业提供更具性价比的管线包解决方案。研宏 Tysem® (大盛) 每年服务超过15个行业的千余家客户,协助客户提高效率、降低成本。

YanHong Tysem® based in Wuhan, Hubei Province, has been providing domestic alternatives to international top-brand robotic cables and dress packs for the automotive industry since 2014. After a decade of development, Tysem has become a leading figure in the industry and a contributor to the national standard for robotic dress packs. Dedicated to offering more cost-effective dress pack solutions for intelligent manufacturing, YanHong Tysem® serves over a thousand clients across more than 15 industries each year, helping customers improve efficiency and reduce costs.





截止 2024 年 9 月 37 个专利，实用新型 18 个，外观专利 19 个
As of September 2024, Tysem holds a total of 37 patents, including 18 utility model patents and 19 design patents.



(以上排名不分前后)
The above listings are in no particular order.



- 

3c
- 

汽车
- 

新能源
- 

半导体
- 

机械装备
- 

五金家电
- 

厨卫洁具
- 

日化
- 

新零售
- 

餐饮
- 

医疗健康
- 

农业
- 

物流
- 

科研教育
- 

其他

焊接类

- 

点焊应用
- 

搅拌摩擦焊
- 

激光焊与螺柱焊

搬运类

- 

上下料应用
- 

材料加工应用
- 

码垛应用
- 

物流搬运应用
- 

材料加工应用
- 

注塑

装配

- 

喷涂和涂胶应用
- 

新能源
- 

装配应用
- 

注塑



管线包通用解决方案

Universal Solutions for Tysem Robotic Dresspack System



01.

1 系

固定安装
Fixed Installation



02.

2 系

旋转支架
Rotary Bracket



03.

3 系

外置弹簧
External Spring



04.

4 系

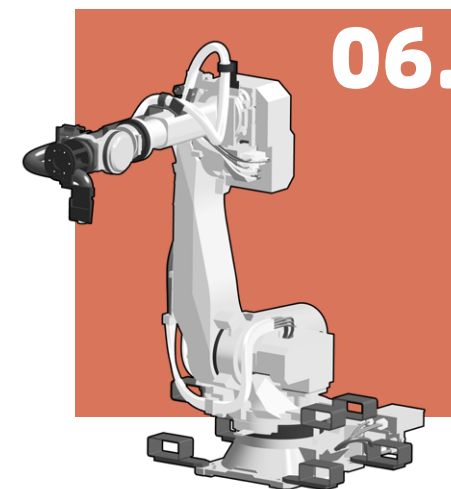
U 型腔 / 直筒
U-shaped Cavity /
Straight Tube



05.

5 系

伸缩支架
Telescopic Bracket



06.

6 系

C 型法兰
C-type Flange

装配与搬运类应用方案

Assembly and Handling Application Solutions

点焊类应用方案

Spot Welding Application Solutions

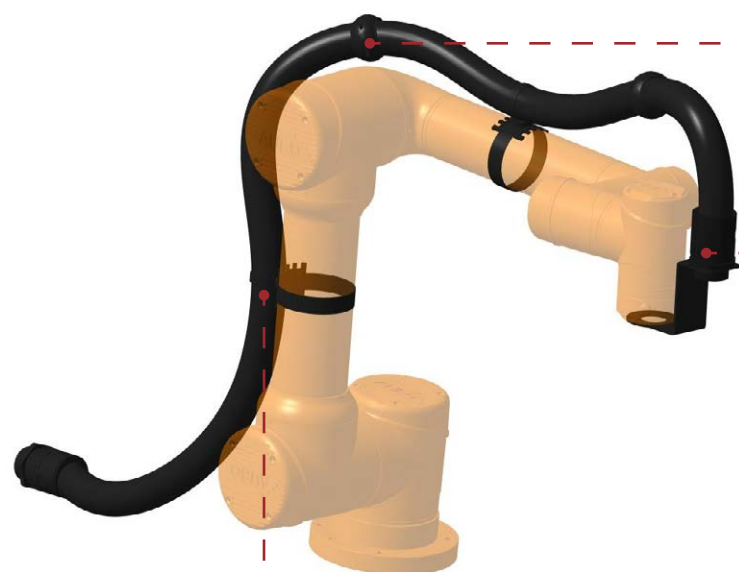


1 系 协作机器人方案

Series 1 Cobot Solutions

优势

- 安装简单、经济实惠、重量轻
- 干涉区域小，不限制机器人运动范围
- 保护物 + 安装底座 + 连接件（各三种）随意组合



应用领域：

- 特别适用于协作机器人和轻量级工业机器人
- 特别适用于无论简单还是复杂的机器人运动轨迹
- 特别适用于焊接、搬运、装配等等的各类应用场景

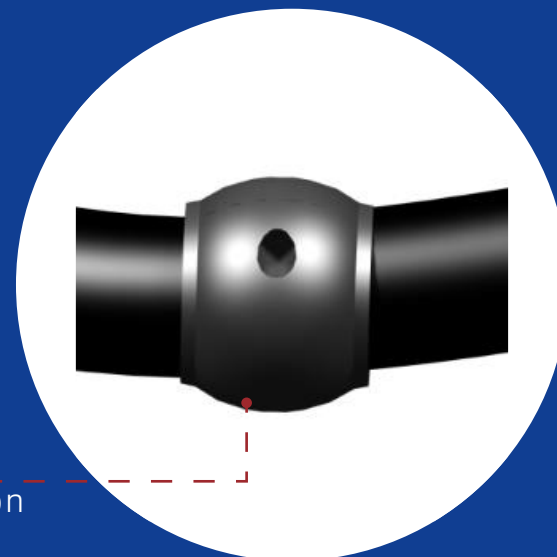
Advantages

Easy to install, cost-effective, and lightweight
Minimal interference area, does not restrict robot movement range
Protection cover + mounting base + connectors (three types each) can be freely combined



防护

Protection



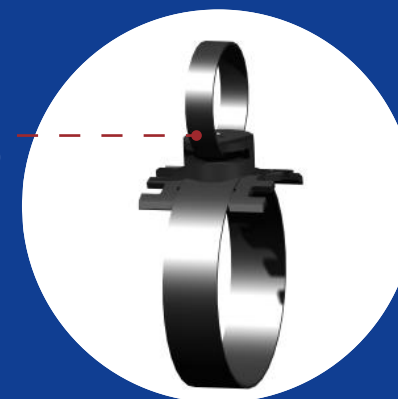
法兰盘管接头

Flanged Tube Connector



抱箍

Hose Clamp



Application Areas

Especially suitable for collaborative robots and lightweight industrial robots
Ideal for both simple and complex robot motion paths
Well-suited for various application scenarios such as welding, handling, assembly, and more

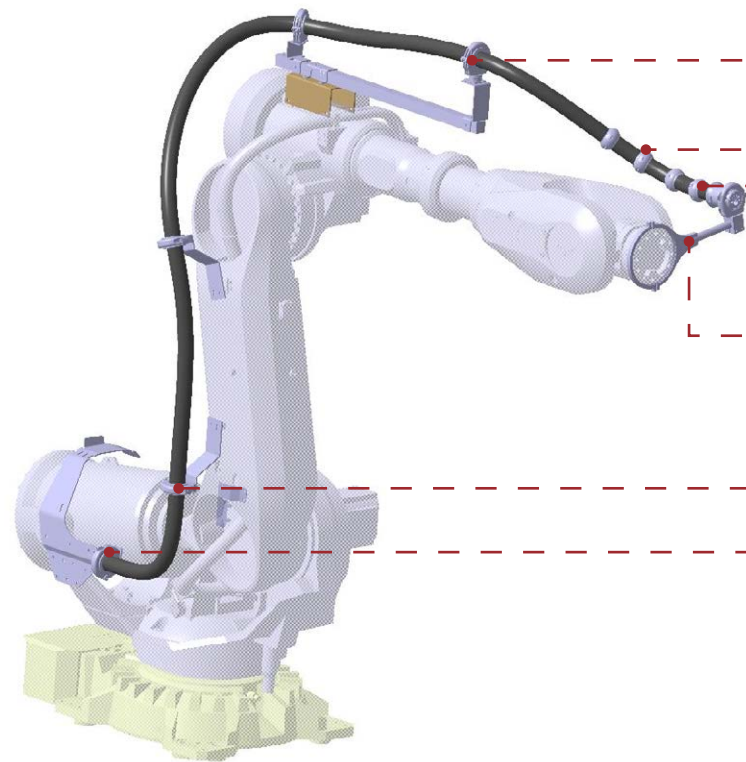


2 系 旋转支架方案

Series 2 Rotary Bracket Solutions

优势

- 4 轴旋转支架可以辅助管线包运动，有效延长寿命
- 3 轴顶部可以放置电气盒与电磁阀
- 安装简单，重量轻，干涉区域小



应用领域：

- 特别适用于协作机器人和轻量级工业机器人
- 特别适用于动作简单的机器人运动轨迹
- 特别适用于搬运、装配、打磨、浇筑、喷淋、防爆等应用场景

Advantages

The 4-axis rotary bracket assists cable carrier movement, effectively extending its lifespan
The 3-axis top can accommodate electrical boxes and solenoid valves
Easy to install, lightweight, with minimal interference area



旋转支架

Rotating Bracket



防撞球

Bumper Ball



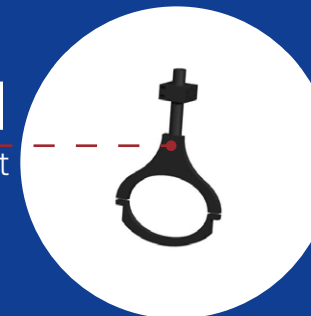
球形套筒

Spherical Sleeve



网球拍

Tennis-Racket Bracket



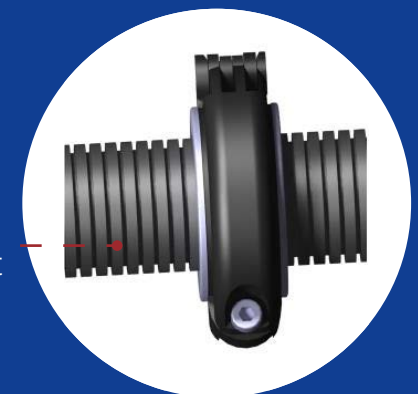
固定座分线器

Branch Clamp Holder



固定座

Mounting Bracket



Application Areas

Especially suitable for collaborative robots and lightweight industrial robots
Ideal for simple robot motion paths

Perfect for applications such as handling, assembly, grinding, casting, spraying, and explosion-proof environments

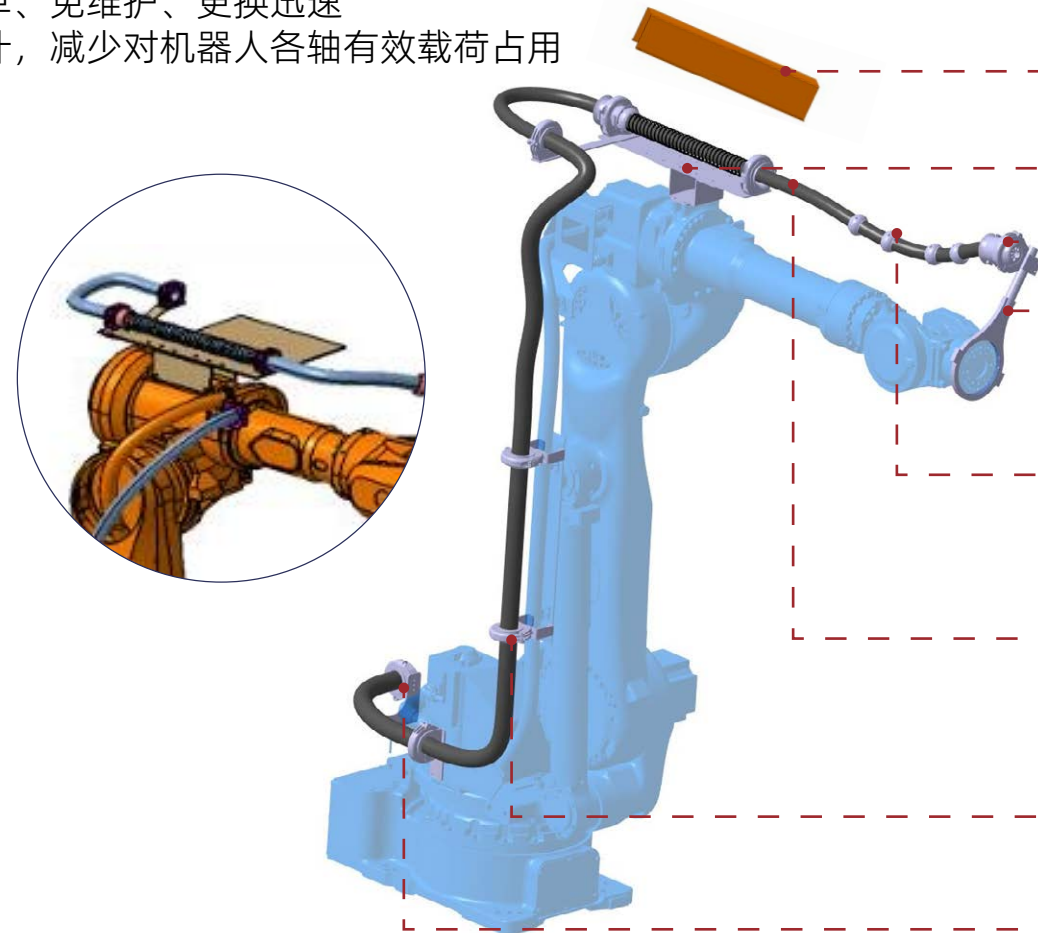


3 系 外置弹簧方案

Series 3 External Spring Solutions

优势

- 带波纹管回弹功能，设计紧凑，干涉区域小
- 结构更简单、免维护、更换迅速
- 轻量化设计，减少对机器人各轴有效载荷占用



应用领域：

- 特别适用于各型号中大型工业机器人
- 特别适用于复杂的机器人运动轨迹
- 特别适用于搬运、装配等各应用场景

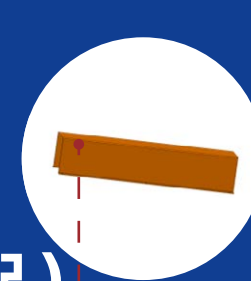
Advantages

With corrugated tube rebound function, compact design, and minimal interference area
Simpler structure, maintenance-free, and quick to replace
Lightweight design to reduce the payload usage on each robot axis



盖板（选配）

Cover Plate (Optional)



双头喇叭口

Double-Ended Bellmouth



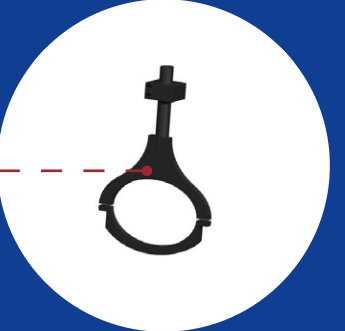
球形套筒

Spherical Sleeve



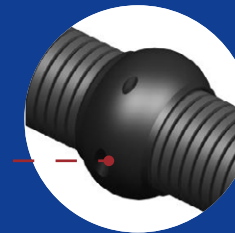
网球拍

Tennis-Racket Bracket



防撞球

Bumper Ball



单头喇叭口

Single-Ended Bellmouth



固定座

Mounting Bracket



固定座分线器

Branch Clamp Holder



Application Areas

Especially suitable for various models of medium- and large-sized industrial robots
Especially suitable for complex robotic motion paths
Especially suitable for various applications such as material handling and assembly

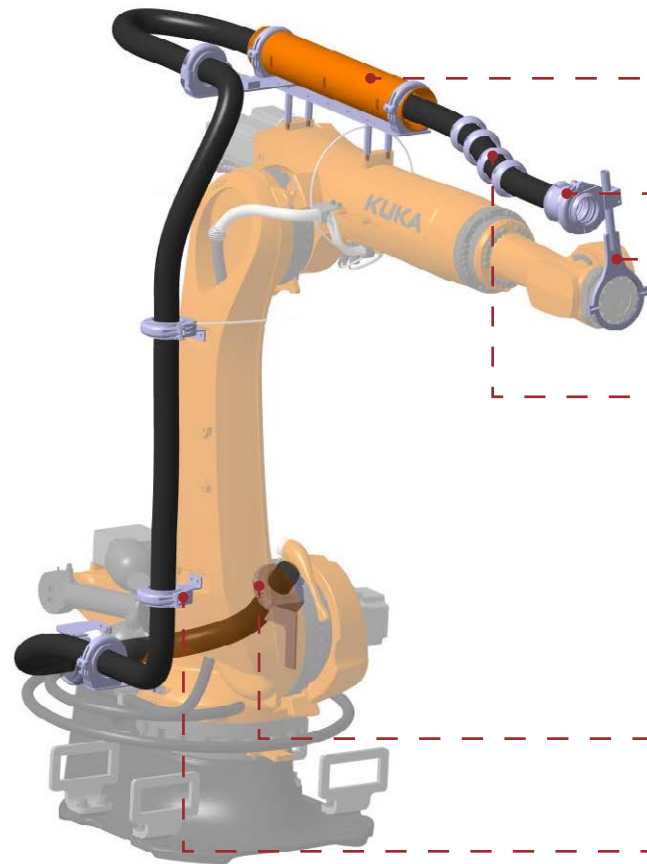


4 系 直筒方案

Series 4 Straight-Tube Solutions

优势

- U 型背壳和黄色脐管的升级形式
- 设计紧凑，重量更轻，成本更低
- 结构简单、更耐用、免维护、快速更换

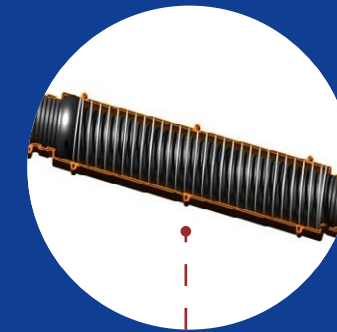


应用领域：

- 特别适用于各型号中大型工业机器人
- 特别适用于复杂的机器人运动轨迹
- 特别适用于点焊、螺柱焊、涂胶、激光焊等广泛应用场景

Advantages

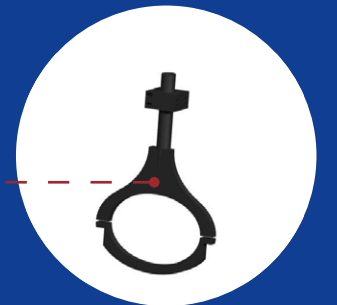
Upgraded design of the U-shaped back shell and yellow umbilical tube
Compact design, lighter weight, and lower cost
Simple structure, more durable, maintenance-free, and quick to replace



直筒
Straight-Tube



球形套筒
Spherical Sleeve



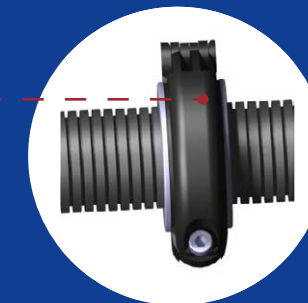
网球拍
Tennis-Racket Bracket



防撞球
Bumper Ball



固定座分线器
Branch Clamp Holder



固定座
Mounting Bracket

Application Areas

Especially suitable for various models of medium- and large-sized industrial robots
Especially suitable for complex robotic motion paths
Especially suitable for a wide range of applications such as spot welding, stud welding, sealing, and laser welding

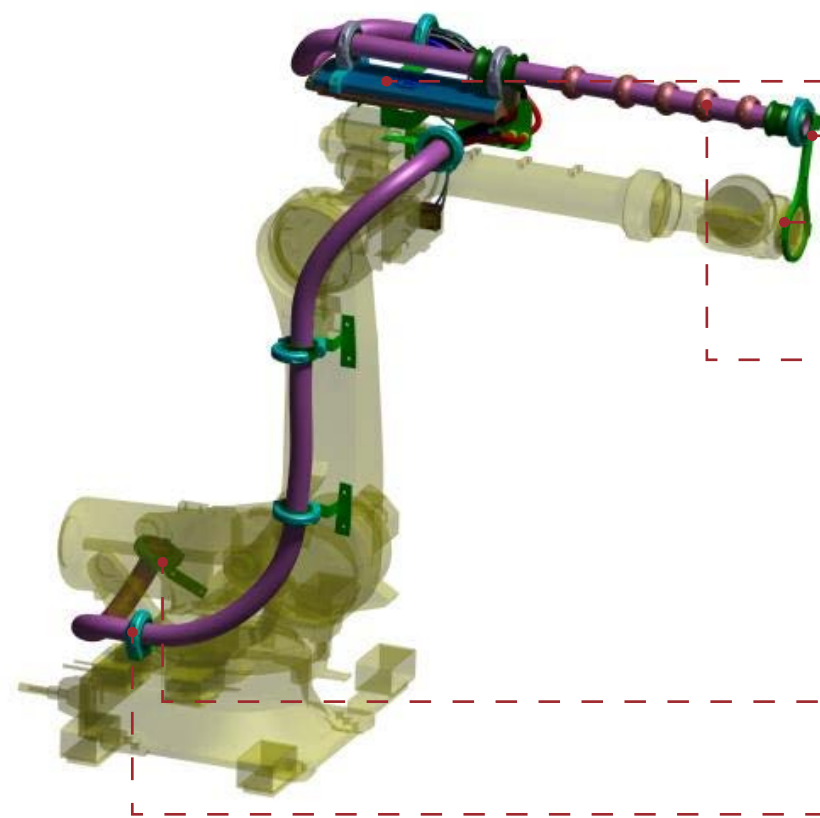


5 系 伸缩支架方案

Series 5 Telescopic Bracket Solutions

优势

- 铝合金制作，坚固耐用
- 设计紧凑，结构简单，免维护，更换迅速



应用领域：

- 特别适用于各型号中大型工业机器人
- 特别适用于复杂的机器人运动轨迹
- 特别适用于点焊、螺柱焊、涂胶、激光焊等广泛应用场景

Advantages

Reinforcement solution for the Series 4 barrel-type, made of aluminum alloy for strength and durability
Compact design, simple structure, maintenance-free, and quick to replace
Lighter overall dress pack weight, reducing the robot's effective payload consumption



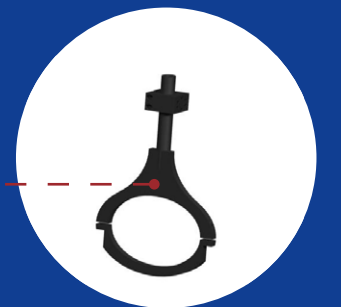
伸缩支架

Telescopic Bracket



球形套筒

Spherical Sleeve



网球拍

Tennis-Racket Bracket



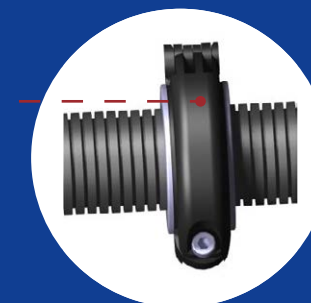
防撞球

Bumper Ball



固定座分线器

Branch Clamp Holder



固定座

Mounting Bracket

Application Areas

Especially suitable for various models of medium- and large-sized industrial robots
Especially suitable for complex robotic motion paths
Especially suitable for a wide range of applications such as spot welding, stud welding, sealing, and laser welding

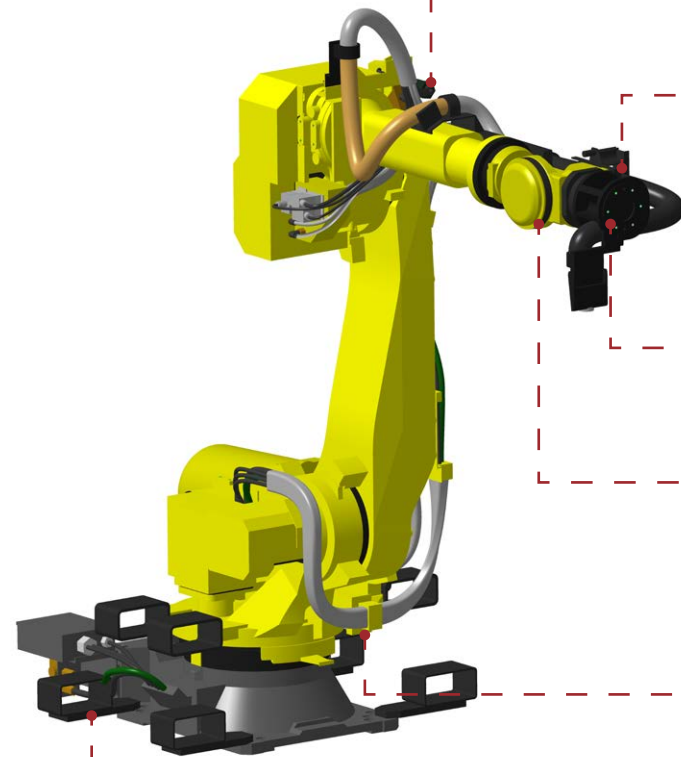


6 系 C 型法兰方案

Series 6 C-Type Flange Solutions

优势

- 对各轴电缆有效约束，减少干涉区
- 结构简单、更耐用、免维护
- 4-5-6 轴电缆运动轨迹分解后，管线包寿命更长



应用领域：

- 特别适用于以点焊为主要场景的工业机器人
- 特别适用于动作复杂的机器人运动轨迹
- 特别适用于点焊、搬运的应用市场

Advantages

Effectively constrains cables of each axis, reducing interference zones

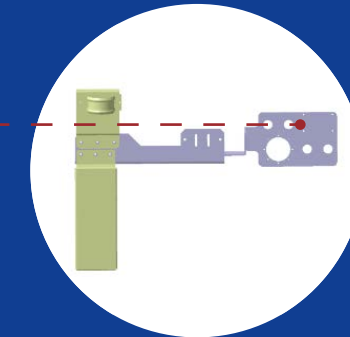
Simple structure, more durable, and maintenance-free

After decomposing the motion trajectories of axes 4, 5, and 6, the dress pack lifespan is extended



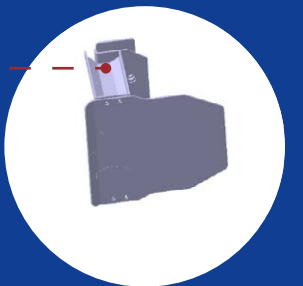
3 轴固定支架

Fixed Bracket for Axis 3



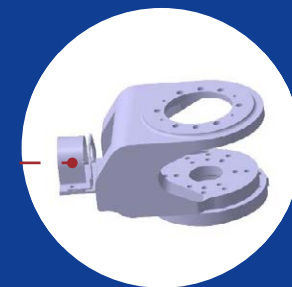
5 轴旋转支架

Rotary Bracket for Axis 5



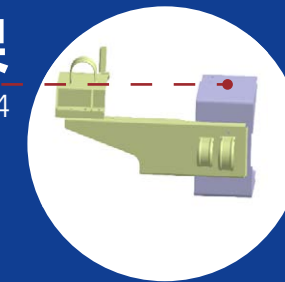
6 轴 C 型法兰

C-Shaped Flange for Axis 6



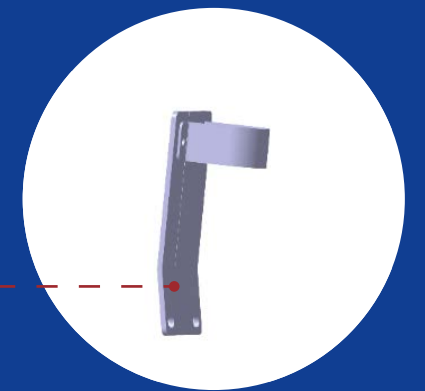
4 轴固定支架

Fixed Bracket for Axis 4



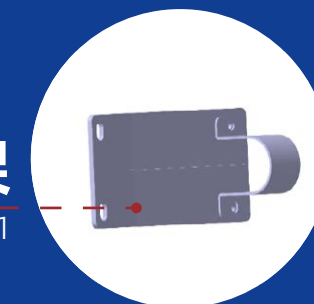
2 轴固定支架

Fixed Bracket for Axis 2



1 轴固定支架

Fixed Bracket for Axis 1



Application Areas

Especially suitable for industrial robots primarily used in spot welding applications

Especially suitable for robots with complex motion trajectories

Especially suitable for application markets such as spot welding and material handling



详细构造及选型

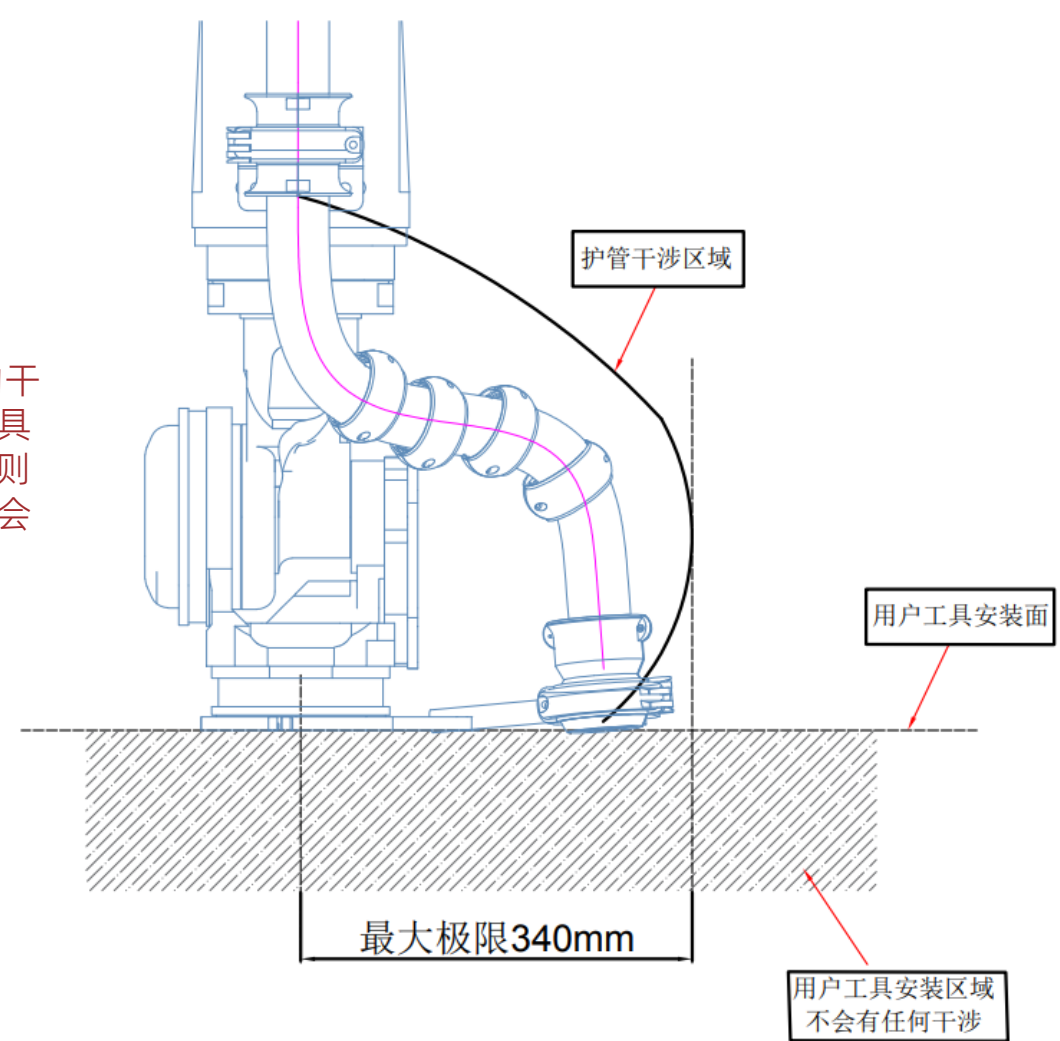
Detailed Structure and Selection



安装了管线包之后，机器人的各个轴运动范围都受到限制。建议客户在编程时遵守该角度限制，不然会失去管线包质保。各轴角度上下限如下所示。

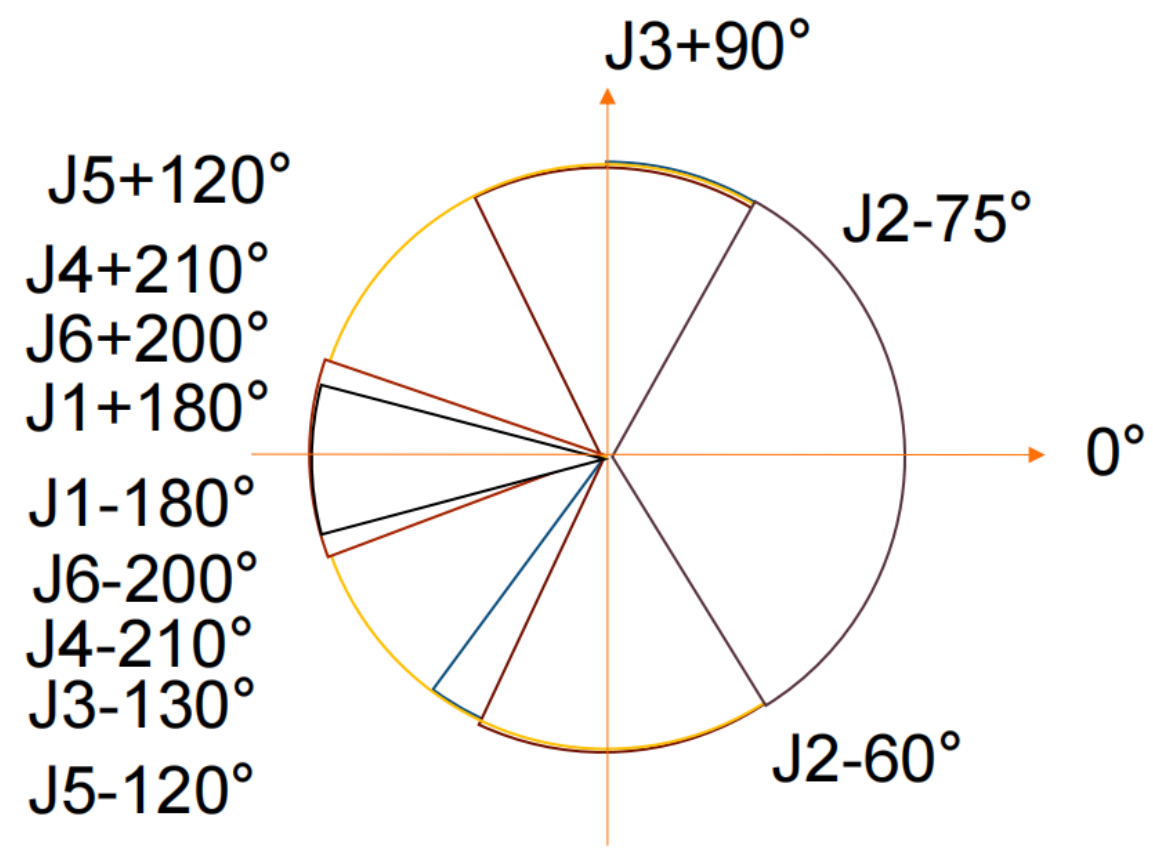
管线包作为机器人的附属设备，在使用时，由于轨迹不合适，如超出极限位置的拉扯、与周边设备的干涉，容易造成管线包的损坏。

※ 请特别注意弹簧的干涉区域，设计用户工具焊枪时必须避开，否则造成的干涉最严重将会导致线缆损坏。



机器人轨迹范围

Robot Trajectory Range



机器人各轴角度限位

Angle Limits of Each Robot Axis



库卡机器人管线包方案展示

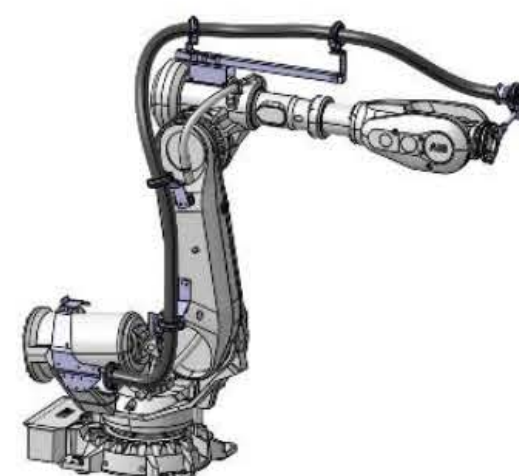
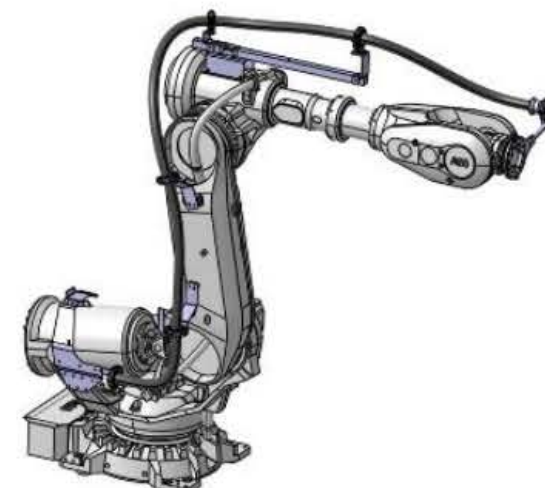
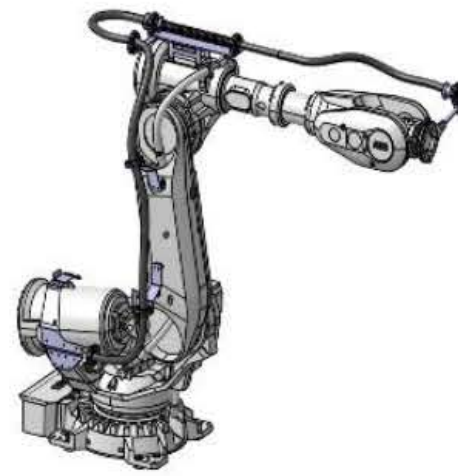
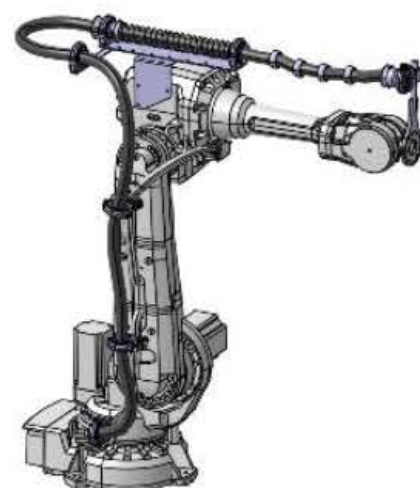
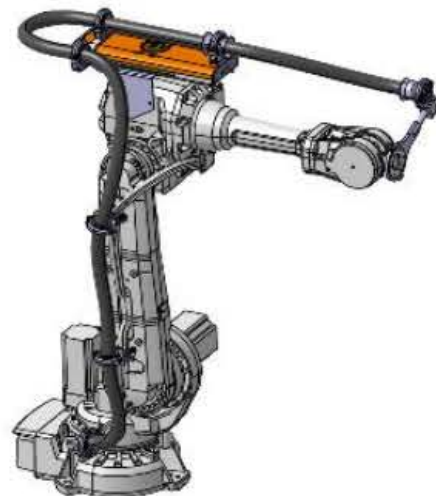
KUKA Robotic Dresspack System Application Display





ABB 机器人管线包方案展示

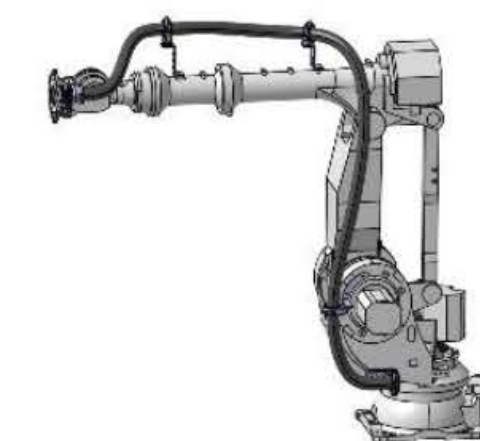
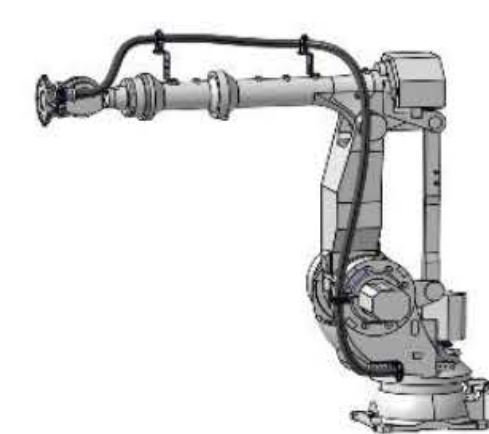
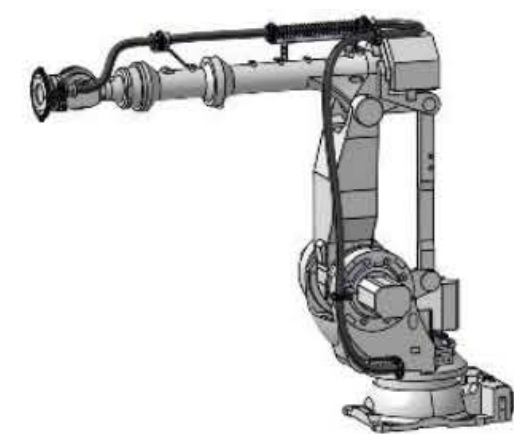
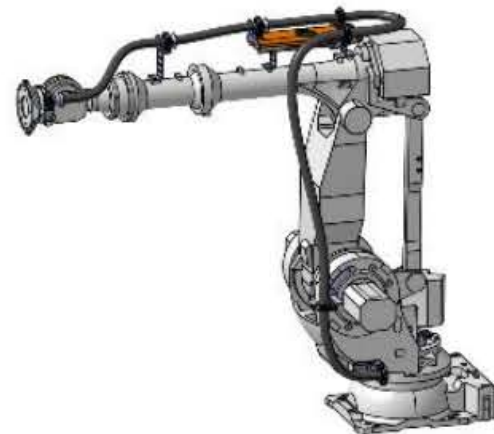
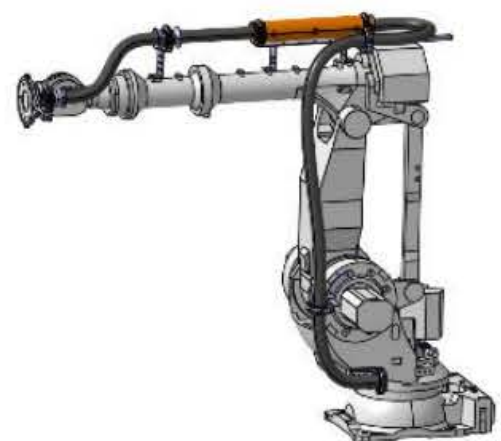
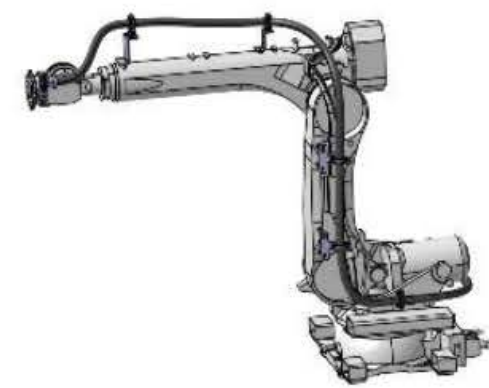
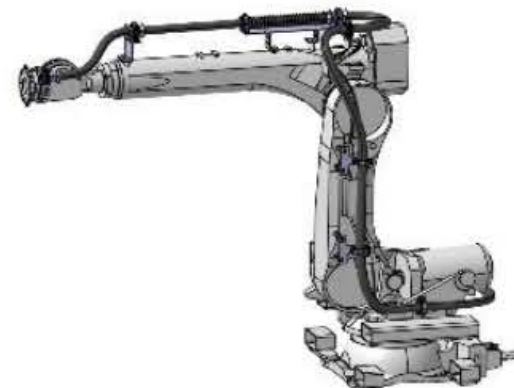
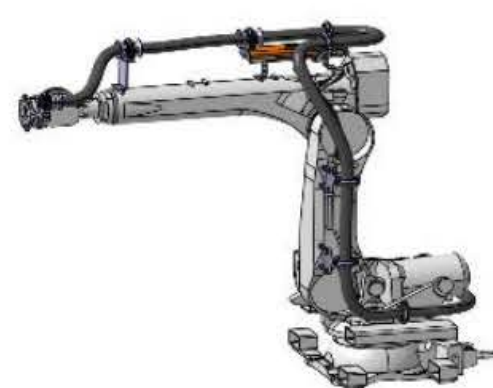
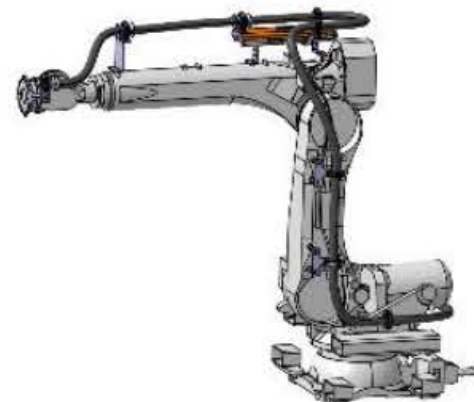
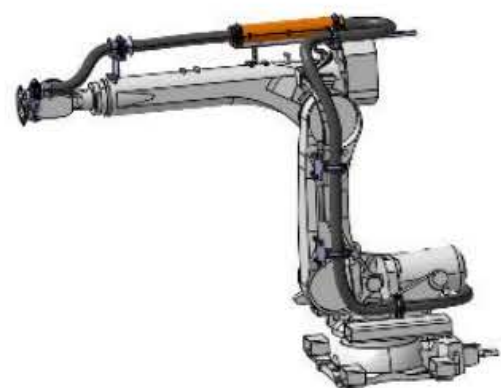
ABB Robotic Dresspack System Application Display





发那科机器人管线包方案展示

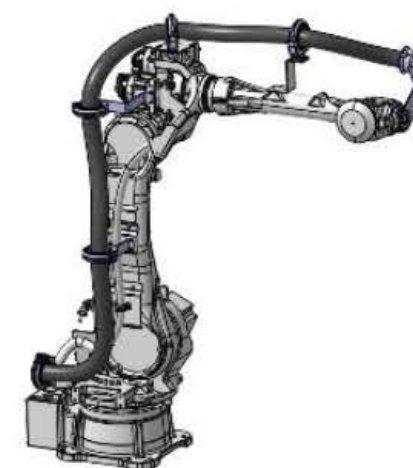
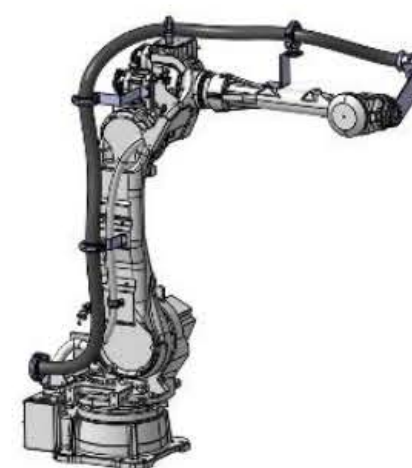
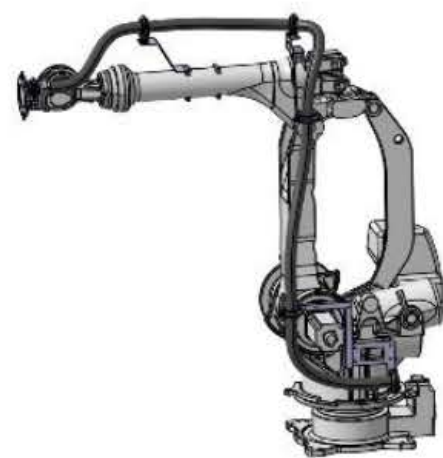
FANUC Robotic Dresspack System Application Display





安川机器人管线包方案展示

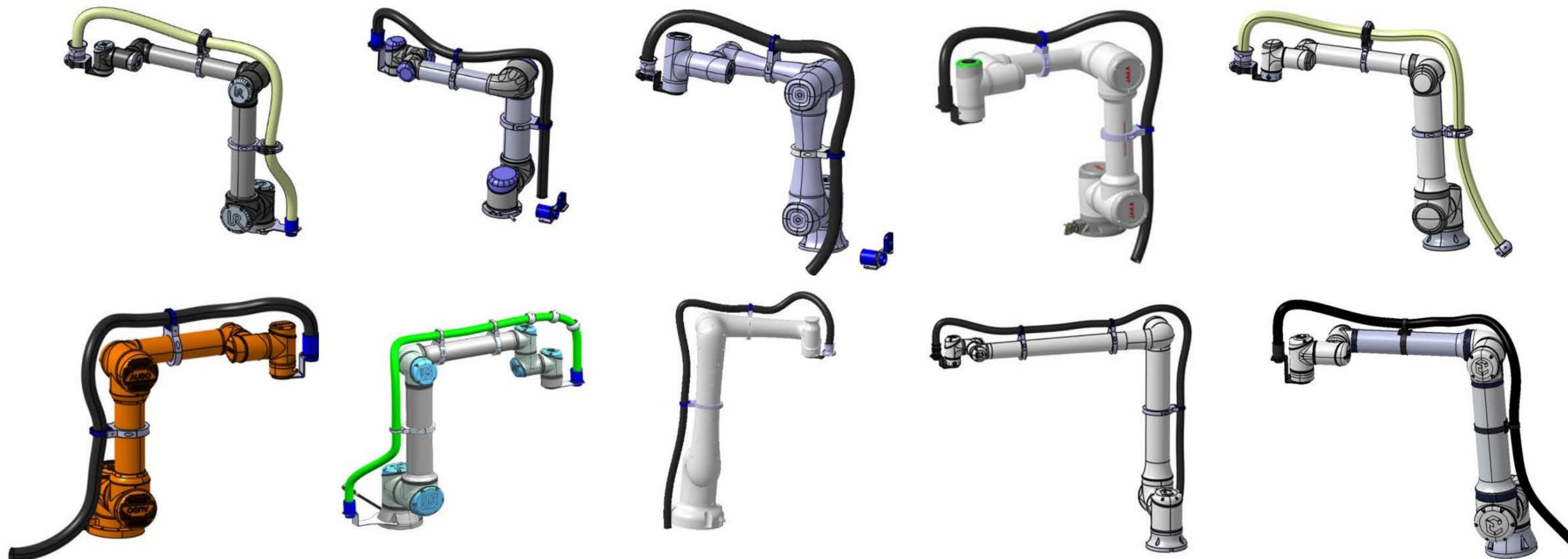
Yaskawa Robotic Dresspack System Application Display





协作机器人管线包方案展示

Cobot Robotic Dresspack System Application Display

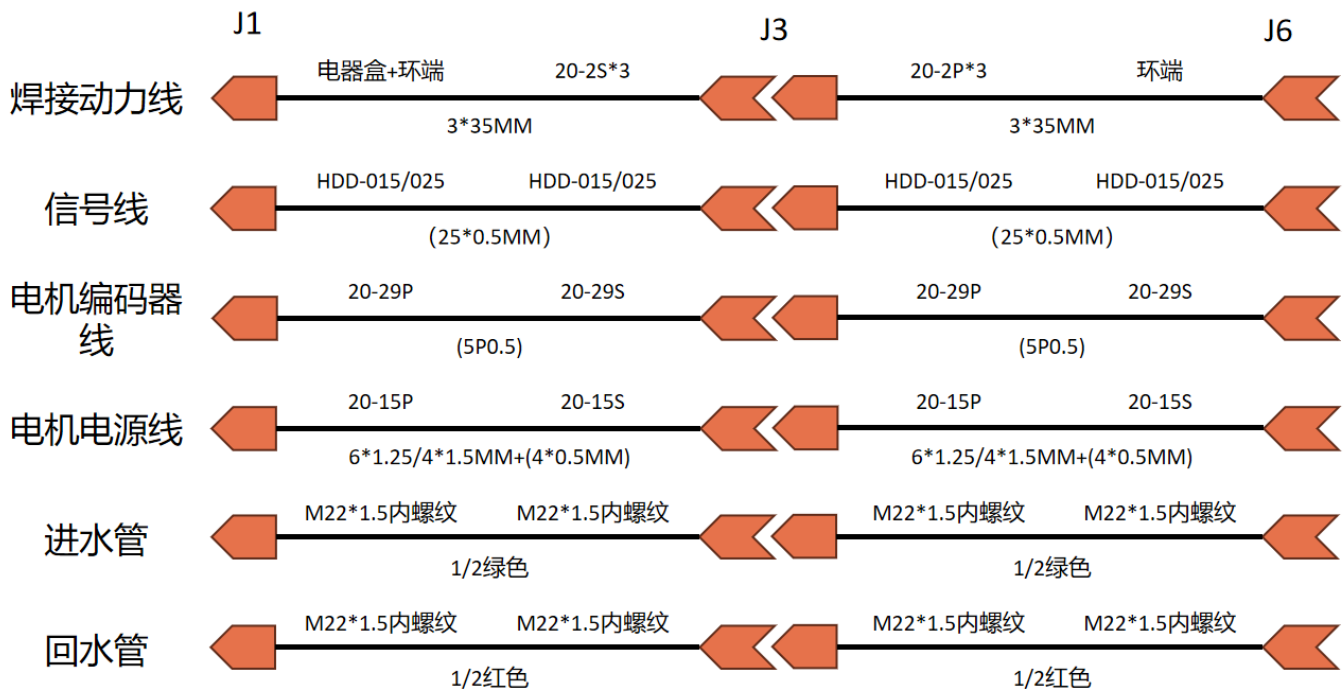


可选内径 48-36-29mm 的波纹管、缠绕管、或者银色防火布用于保护和固定水气管和电缆。



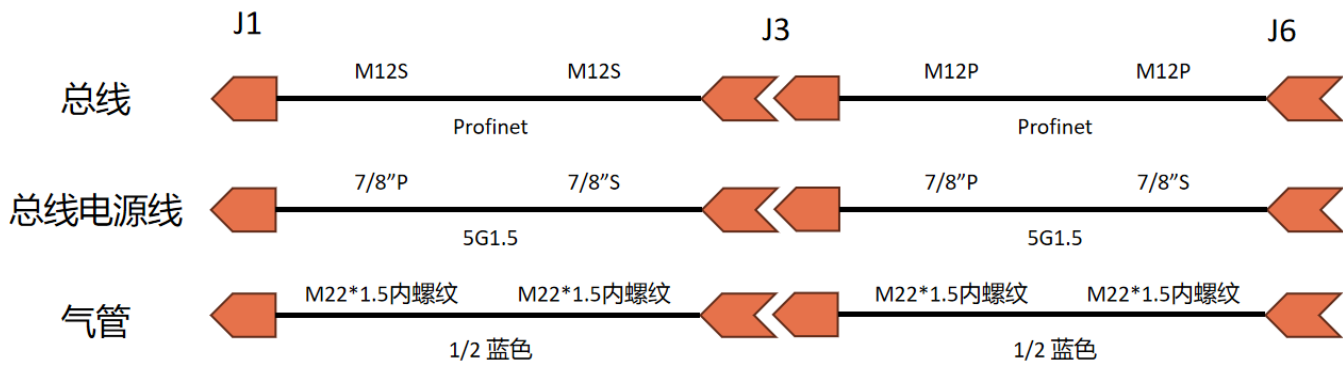
管线包配置清单

Tysem Robotic Dresspack System Configuration List



TYSEM 点焊标准

TYSEM Spot Welding Standard



TYSEM 搬运标准

TYSEM Handling Standard



质量管理体系

Quality Management System



TYSEM 湖北研宏机器人技术有限公司

PEMEA 过程失效模式与后果分析

车型/年份: 客户: 编制日期: 文件编号: 修订日期:

Prototype Pilot Launch Post Launch

过程节点 / 描述

☐ P10	材料验收和储存	☐ P110	MTS/MMTS压接	☐ P160-4	E Q 线装配
☐ P20	发料	☐ P120	IDC压接	☐ P170	电气测试
☐ P30	切割	☐ P130	预装	☐ P170-1	电特性测试
☐ P30-1	切线	☐ P140	注塑	☐ P170-2	零部件存在性测试
☐ P30-2	切管	☐ P140-1	穿墙护套注塑	☐ P170-3	连接器防水测试
☐ P30-3	切带	☐ P140-2	护套注塑	☐ P180	注塑件防水测试
☐ P30-4	切线缆	☐ P140-3	穿墙连接器注塑	☐ P180-1	穿墙护套注塑件防水测试
☐ P40	绞线	☐ P140-4	连接器注塑	☐ P180-2	连接器注塑件防水测试
☐ P50	浸锡焊	☐ P140-5	端子注塑	☐ P190	包装
☐ P60	热缩管套管密封	☐ P150	穿墙主密封	☐ P200	入库
☐ P70	支路手工剥皮	☐ P160	线束装配	☐ P210	发货
☐ P80	线缆冲槽	☐ P160-1	静止板装配		
☐ P90	手工压接	☐ P160-2	旋转线装配		
☐ P100	绞接	☐ P160-3	UDMM装配		

CROSS FUNCTIONAL TEAM

工业工程师: QC工程师: 生产计划主管: 维修主管: QA工程师: 仓库主管: 生产主管: QS工程师: 商务代表:

Approval: ENG Manager QC Manager PDD Manager PCD Manager

TYSEM 产品终检表

1 / 2

2019/6/10

零件号: 生产工号: 检验工号:

连接管合头

检验重点	描述	WE	PG	PW	SE	UR	管子
1	检查铜种是否在第一次平路上, 有光号, 受用, 并研的痕迹						
2	检查尾夹有无刮伤						
3	检查尾夹与管头有无刮伤						
4	检查导向环与管头有无刮伤						
5	检查导向环与管头有无刮伤						
6	检查连接管接口方向是否符合要求						
7	检查电测绝缘电阻是否大于100MM 20						
8	检查连接管接头, 管头, 管号是否符合要求						
9	检查连接管接头, 尾夹并检查无异物, 测试记录						
10	检查电测绝缘电阻是否符合要求						

连接管接头

检验重点	描述	WE	PG	PW	SE	UR	管子
1	检查管子有无刮伤						
2	检查管子与管头有无刮伤, 管头, 管号, 管号						
3	检查尾夹有无刮伤						
4	检查尾夹与管头有无刮伤						
5	检查导向环与管头有无刮伤						
6	检查导向环与管头有无刮伤						
7	检查连接管接口方向是否符合要求						
8	检查电测绝缘电阻是否大于100MM 20						
9	检查连接管接头, 管头, 管号是否符合要求						
10	检查连接管接头, 尾夹并检查无异物, 测试记录						

电测绝缘电阻:

研宏 Tysem® 通过引入 TS16949 体系的 APQP、PPAP、MSA、SPC、FMEA 工具，在管线包和电缆组件的设计和制造上，实现 21 个工序、近 300 项节点的追踪与质量管理。



线束国家标准

National Standard for Wire Harnesses



标准

认证

教育

倡导

展览

IPC未来工厂

IPC/WHMA-A-620 线缆及线束组件的要求与验收

IPC主页 > IPC/WHMA-A-620 线缆及线束组件的要求与验收

IPC/WHMA-A-620是业界一致认可的线缆、线束组装要求和验收的标准，描述了用于压接、机械紧固与焊接互连材料、方法、测试和可接受性标准以及其它线缆线束组件组装活动的相关标准。该标准作为线缆线束行业进行工艺、材料、方法和检验管理的指导标准，已被全球范围内的OEM和EMS广泛采用。该标准的目的是依靠过程控制方法，以确保线缆线束组件制造过程中产品质量的一致性。



研宏 Tysem® 所制造的机器人线束完全满足汽车行业的线束国家标准 QC/T29106 和 IPC-WHMA-A-620 标准。



机器人管线包团体标准

Group Standard for Robot Cable Management Systems



研宏 Tysem® 于 2024 年起草制定了机器人管线包团体标准 T/QGCML 3326-2024 、T/QGCML 3327-2024 和 T/UNP354-2024。



艾德泰克

报告编号: ADTK20231201002F
报告日期: 2023/12/11
页 码: 2 / 2

检测报告

序号	名称	检测项目	检测结果		检测方法
			索尼	研宏	
1*	防撞球	密度, g/cm³	1.132	1.336	GB/T 3398.2-2008
2*	防撞球	耐磨	平均摩擦系数: 0.343 磨痕量: 0.0050g	平均摩擦系数: 0.586 磨痕量: 0.0029g	GB/T 3960-2016
3*	防撞球	硬度 (HRM)	68	76	GB/T 3398.2-2008
4	固定座	拉断力, kN	4.2*	6.1	GB/T 1040.2-2022

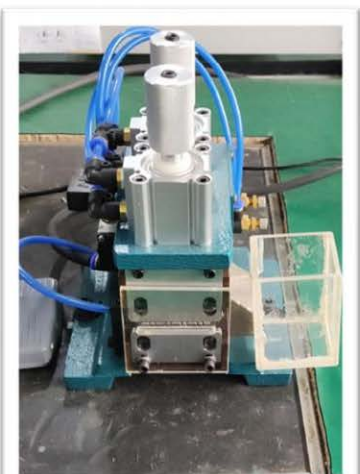
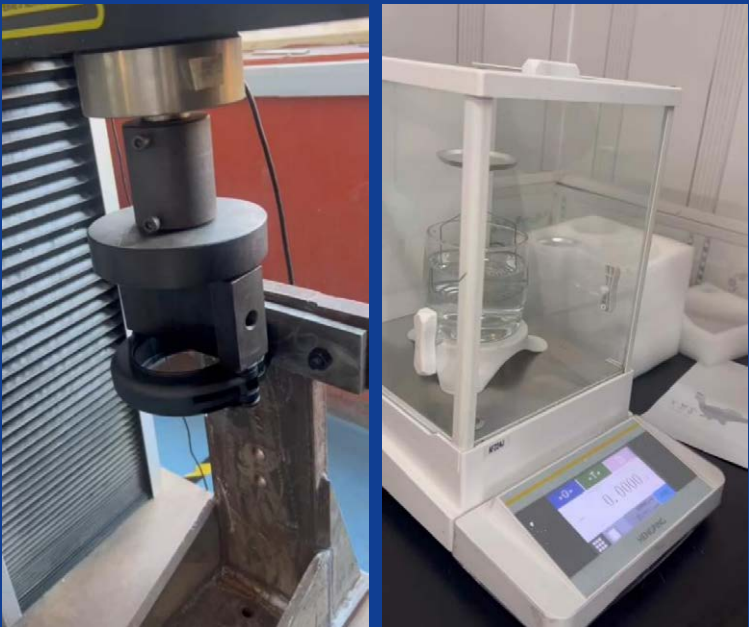
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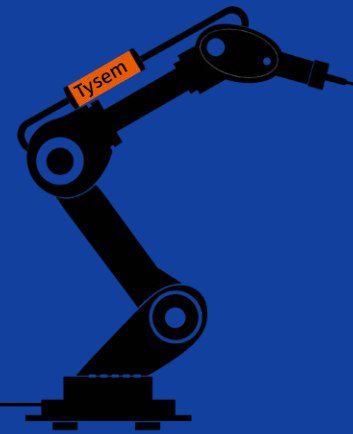
检测报告

2.2.3 弯曲疲劳条件
频率: 1.7HZ, 弯曲角度 α=180°。
2.2.4 实验过程简介
1) 选取样品长度 600mm, 保证芯轴的圆周弯曲的一段外还应在每一端有足够夹持的长度;
2) 软管应绕圆形支撑芯轴弯曲;
3) 试验达到规定的周期或者软管出现破损或永久变形时终止试验, 记录周期和以及中间异常现象 (如存在)。
3.检测结果

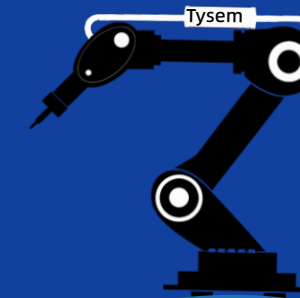
样品	检测项目	检测结果	检测方法
leoni 波纹管 (蓝色)	扭转疲劳	疲劳试验 500 万次后, 中间部位发现发白, 其余部位未发现异常	GB/T 37220-2018
leoni 波纹管 (蓝色)	弯曲疲劳	疲劳试验 500 万次后, 未发现异常	GB/T 5565.1-2017
tysem 波纹管 (黑色)	扭转疲劳	疲劳试验 500 万次后, 中间部位发现发白, 其余部位未发现异常	GB/T 37220-2018
tysem 波纹管 (黑色)	弯曲疲劳	疲劳试验 500 万次后, 未发现异常	GB/T 5565.1-2017



研宏 Tysem® 机器人管线包检测与方案实验室不断测试产品和迭代方案。



感谢观看
Thank You



湖北研宏机器人技术有限公司
大盛管线包

武汉总部

湖北研宏机器人技术有限公司
地址：武汉经济技术开发区创业路建银公馆 B 座 1312-15

Wuhan Headquarters
Hubei Yanhong Robotics Technology Co., Ltd.
Address: Room 1312/15, Building B, Jianyin Mansion,
Chuangye Road, Wuhan Economic and Technological
Development Zone.

17702789163@tysem.cn
www.tysem.cn