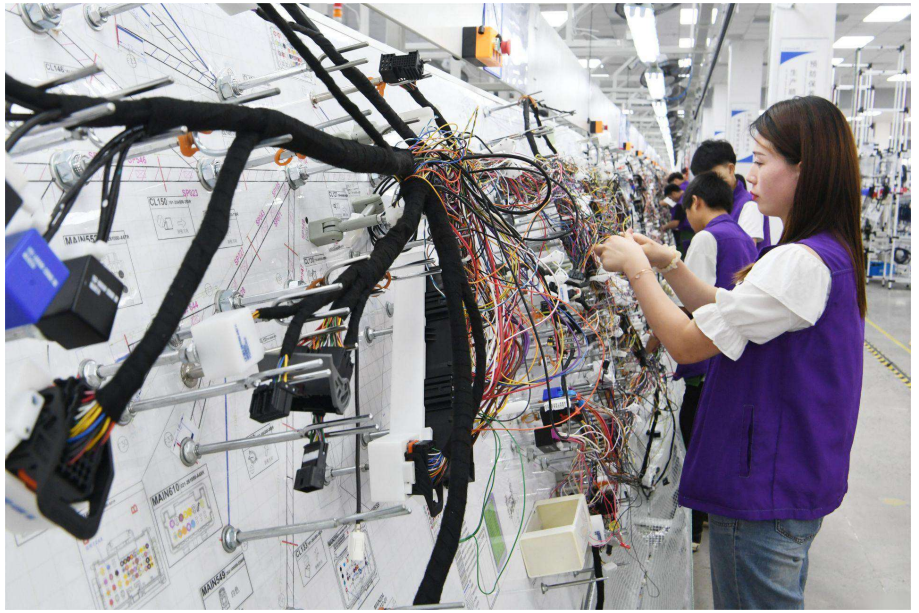
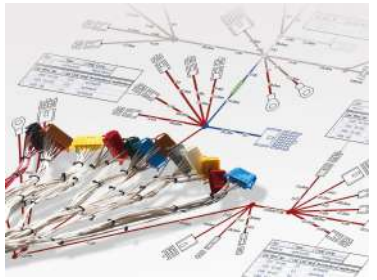
Future & Quality

# Fuzhou Fuqiang Precision Co.,Ltd





## Future & Quality

Fuzhou Fuqiang Precision Co., Ltd., a key subsidiary of our group, operates from strategic locations in China, including Fuzhou, Tianjin, Chongqing, Foshan, and Wuhan, and expanded globally with a new factory in Uzbekistan in January 2024. This expansion underscores our commitment to providing localized service and support across diverse markets.

Established in 2005 Specializing in custom wiring harness solutions, Fuqiang Precision serves various industries, with a focus on automotive, energy storage, agricultural machinery, household appliances, and medical applications.

Our dedication to innovation, quality, and customization is proven by ISO9001 and IATF16949 certifications and 128 national patents. Compliance with UL standards ensures our products meet the highest requirements.Our extensive operational network ensures we deliver exceptional wiring harness solutions globally. Trust in our expertise for your wiring harness needs across multiple sectors.

# 工业机器视觉连接线
# Series Machine Vision cables

## 产品种类有

GIGE千兆网线、Camera Link线束、IEEE1394a线束、IEEE1394b线束、USB2.0线束、USB3.0线束、HDMI线束、M5/M8/M12/M16等各种工业接口电缆。HRS插头系列线束、I/O线束，供电触发线束。

线缆具有高柔软外被，纯铜导体，铝箔屏蔽，低衰减、长距离传输，耐拖拽、耐弯曲、耐折寿命达到1000万次以上，并且耐磨、耐油、耐寒、防水、阻燃、抗紫外线等性能。

## 特点 Features

- 兼容GigE V2.0标准规范
- TPU或PA工程塑料注塑成型
- 耐油耐弯曲超柔Cat 6a电缆，弯曲寿命500万次
- 采用UL认证材料，符合CE和RoHS规范

- Compatible with GigE V2.0 standard
- Durable TPU or PA overmolding for industrial applications
- Flexible oil-resistant Cat 6a cable for 5 million bending cycles
- UL approval materials,CE and RoHS compliant

## 订单编号 Ordering Information

| GE | - | H | - | 1 | - | RS | U | - | VS | 3 |
|---|---|---|---|---|---|---|---|---|---|---|
| ① | | ② | | ③ | | ④ | ⑤ | | ⑥ | ⑦ |

①接口标准 Interface Standard
GE Gige Vision

②、④连接器型式Connector Type
H 直型插头 Horizontal RJ45 Plug
HS 直型螺丝插头 Horizontal RJ45 Plug WithScrewR R右弯型 Right angel
VS 垂直螺丝插头 Vertical RJ45 Plug With Screw
RS 弯型螺丝插头 Angled RJ45 Plug With Screw
MX 圆型插头 M12 X-Code 8P Plug

③、⑤注塑形式 Overmold Type
1 直型 Straight
U 上弯型 Up Angel
D 下弯型 Down Angel
L 左弯型 Left Angel

⑥电气类型 Cable Type
VS 超柔电缆 Flexible PVC Cable Black
US 耐弯曲电缆 Durable PUR Cable Green
LS 低烟无卤电缆 LSZH Cable Black

⑦线长（米） Cable Length（m） 1-20

## 连接器类型 Connector Type Options

H1

HS1

VS1

MX1

RSU

RSD

RSL

RSR

# 工业机器视觉连接线
# Series Machine Vision cables

Future & Quality

## 连接器类型 Connector Type Options

M1

H1

HU

HD

12S

12SR

12P

12PR

HR

HL

HS1

HDE

12PJ

6S

6P

FL

A1

AS1

BS1

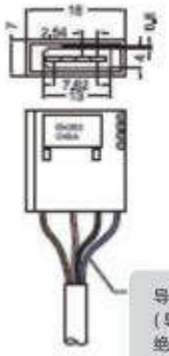
MBS1

MBSU

MBSD

MBSL

MBSR



# 工业以太网电缆
# Industrial Ethernet Cables

Future & Quality

**M12单端预铸线束**
**With Open ended wires M12**
**屏蔽A-Coded**
**Shield, A-coded**

| 插针 Male 直出 Straight | 插针 Male 90° |
|---|---|
| | |

**M12单端预铸线束**
**With Open ended wires M12**
**屏蔽Shieleded**

| 插针 Male 直出 Straight | 插孔Female 直出 Straight | 插针 Male 90° | 插孔 Female 90° |
|---|---|---|---|
| | | | |

**M12单端预铸线束**
**With Open ended wires M12**
**屏蔽A-Coded Shield,**
**A-coded**

| 插孔 Female 直出 Straight | 插针 Female 90° |
|---|---|
| | |

**7/8" 单端预铸线束**
**With Open ended wires**

| 插孔 Female 直出 Straight | 插针 Female90° |
|---|---|
| | |

**M12单端预铸线束**
**With Open ended wires M12**
**屏蔽A-Coded Shield,**
**A-coded**

| 插针Male 直出 Straight | 插孔Female 直出 Straight | 插针 Male 90° | 插孔 Female 90° |
|---|---|---|---|
| | | | |

**7/8" 单端预铸线束**
**With Open ended wires**

| 插针Male 直出 Straight | 插针 Male 90° |
|---|---|
| | |

**M12单端预铸线束**
**With Open ended wires M12**
**屏蔽 Shieleded**

| 插针 Male 直出 Straight | 插针 Male 90° |
|---|---|
| | |

**7/8" 双端预铸线束**
**Connection Cable**

| 插针Male 直出 Straight | 插孔Female 直出 Straight | 插针Male90° | 插孔Female90° |
|---|---|---|---|
| | | | |

**M12单端预铸线束**
**With Open ended wires M12**
**屏蔽 Shieleded**

| 插孔 Female 直出 Straight | 插孔 Female 90° |
|---|---|
| | |

**7/8" 板端预铸线束**
**With Open ended wires**

| 插针Male 直出 Straight | 插孔Female 直出 Straight |
|---|---|
| | |

# 工业以太网电缆
# Industrial Ethernet Cables

Future & Quality

**CAT.5e**
M8 单端预铸线束
With open ended wires
屏蔽 Shielded

| 插针 Male 直出 Straight | 插针 Male 90° |
|---|---|
| | |

**CAT.5e**
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 M8 直出 Straight | 插针RJ45 压接式接线 | 插针 RJ45 压接式接线 | 插针 Rj45 压接式接线 | 插孔 M12 板后安装 | 插针 压接式接线 |
|---|---|---|---|---|---|
| | | | | | |

**CAT.5e**
M8 双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male 直出 Straight | 插针 Male 直出 Straight | 插针 Male 90° | 插针 Male 90° |
|---|---|---|---|
| | | | |

**CAT.5e**
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Male Straight | 插针 Male RJ45 压接式接线 | 插针 Male 90° | 插针 Male Rj45 压接式接线 |
|---|---|---|---|
| | | | |

**CAT.5e**
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Straight | 插针 Male M8 直出 Straight | 插针 Male M12 插针 Male M12 | 直出 Straight 直出 Straight |
|---|---|---|---|
| | | | |

**Ethemet 300m-1 Gbps**
**CAT.5e**
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Straight | 插针 Male Rj45 直出 Straight | 插针 Male Rj45 直出 Straight | 插针 Male Rj45 直出 Straight |
|---|---|---|---|
| | | | |

**CAT.5e**
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Straight | 插针 Male RJ45 压接式接线 | 插针 Male 90° | 插针 Male RJ45 压接式接线 |
|---|---|---|---|
| | | | |

**Ethemet 10 Gbps**
**CAT.6**
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male RJ45 直出 Straight | 插针 Male Rj45 直出 Straight |
|---|---|
| | |

**CAT.5e**
M8 双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male RJ45 压接式接 | 插针 Male RJ45 压接式接线 | 插孔 Female M12 板后安装 | 插针 Male RJ45 压接式接线 |
|---|---|---|---|
| | | | |

**PoE CAT.6**
**X-coded to RJ45**
**CAT.6**
双端线束 Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Straight | 插针 Male Rj45 压接式接线 |
|---|---|
| | |

# 工业以太网电缆
# Industrial Ethernet Cables

Future & Quality

**PoE CAT.6**
**X-coded to M12**
双端线束 Connection cable
屏蔽 Shielded

插针 Male M12 直出 Straight — 插针 Male M12 直出 Straight

**M12X-coded**
CAT.6 标准
实现 10Gbps 传输速率
冷压接 Crimp terminal
屏蔽 Shielded

插针 Male 直出 Straight

**M12 X-coded**
CAT.6 标准
实现 10Gbps 传输速率
螺钉压接 Srew terminal
屏蔽 Shielded

插针 Male 直出 Straight

**M12 单端预铸线束**
**With open ended wires M12**
屏蔽 B-Coded
Shielded, B-Coded

插针 Male 直出 Straight — 插针 Male 90°

**M12 单端预铸线束**
**With open ended wires M12**
屏蔽 B-Coded
Shielded, B-Coded

插针 Female 直出 Straight — 插孔 Female 90°

**M12 单端预铸线束**
**With open ended wires M12**
屏蔽 B-Coded
Shielded, B-Coded

插针 Male 直出 Straight — 插孔 Female 直出 Straight — 插针 Male 90° — 插针 Male 90°

**M12 单端预铸线束**
**With open ended wires**
屏蔽 Shielded, D-Coded

插针 Male 直出 Straight — 插孔 Male 90°

**M12 双端预铸线束**
**Connection cable**
屏蔽 Shielded, D-Coded

插针 Male 直出 Straight — 插孔 Male 直出 Straight — 插针 Male 90° — 插孔 Male 90°

**双端预铸线束**
**Connection cable**
屏蔽 Shielded, D-Coded

插针 Male M12 直出 Straight — 插针 MaleRJ45 IDC 刺破型接线 — 插针 Male RJ45 IDC 刺破型接线 — 插孔 Male Rj45 IDC 刺破型接线

**双端预铸线束**
**Connection cable**
屏蔽 Shielded, D-Coded

插孔 Female M12 板后安装 — 插针 MaleRJ45 IDC 刺破型接线 — 插针 Male 直出 Straight — 插针 Male 直出 Straight

# 工业以太网电缆
# Industrial Ethernet Cables

Future & Quality

CAT.5e
M8 单端预铸线束
With open ended wires
屏蔽 Shielded

| 插针 Male 直出 Straight | 插针 Male 90° |
|---|---|

CAT.5e
M8 双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male 直出 Straight | 插针 Male 直出 Straight | 插针 Male 90° | 插针 Male 90° |
|---|---|---|---|

CAT.5e
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Straight | 插针 Male M8 直出 Straight | 插针 Male M12 插针 Male M12 | 直出 Straight 直出 Straight |
|---|---|---|---|

CAT.5e
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Straight | 插针 Male RJ45 压接式接线 | 插针 Male 90° | 插针 Male RJ45 压接式接线 |
|---|---|---|---|

CAT.5e
M8 双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male RJ45 压接式接 | 插针 Male RJ45 压接式接线 | 插孔 Female M12 板后安装 | 插针 Male RJ45 压接式接线 |
|---|---|---|---|

CAT.5e
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 M8 直出 Straight | 插针RJ45 压接式接线 | 插针 RJ45 压接式接线 | 插针 Rj45 压接式接线 | 插孔 M12 板后安装 | 插针 压接式接线 |
|---|---|---|---|---|---|

CAT.5e
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Male Straight | 插针 Male RJ45 压接式接线 | 插针 Male 90° | 插针 Male Rj45 压接式接线 |
|---|---|---|---|

Ethemet 300m-1 Gbps
CAT.5e
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male M12 直出 Straight | 插针 Male Rj45 直出 Straight | 插针 Male Rj45 直出 Straight | 插针 Male Rj45 直出 Straight |
|---|---|---|---|

Ethemet 10 Gbps
CAT.6
双端预铸线束
Connection cable
屏蔽 Shielded

| 插针 Male RJ45 直出 Straight | 插针 Male Rj45 直出 Straight |
|---|---|

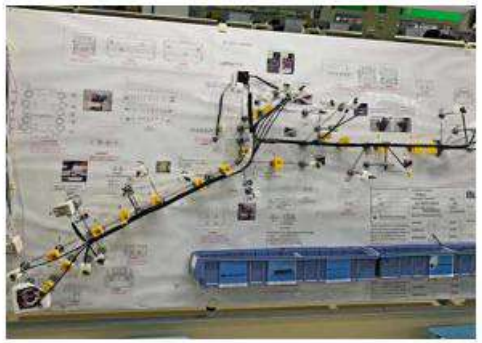
PoE CAT.6
X-coded to RJ45
CAT.6
双端线束 Connection cable
屏蔽 Shielded

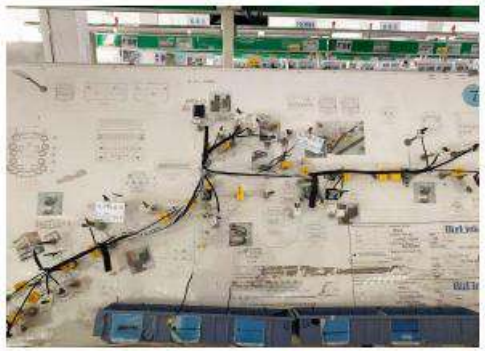
| 插针 Male M12 直出 Straight | 插针 Male Rj45 压接式接线 |
|---|---|

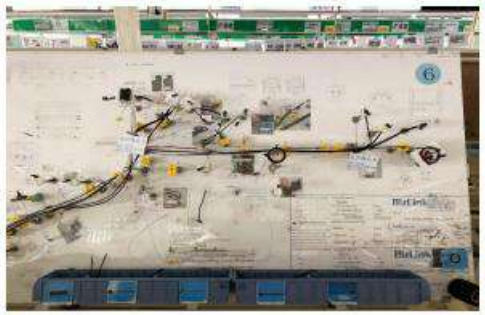
# 工控线束
# Industrial Wire Harness

# 新能源线束-储能线束
# Renewable Energy Wire Harnesss-Energy Storage&Power Harness

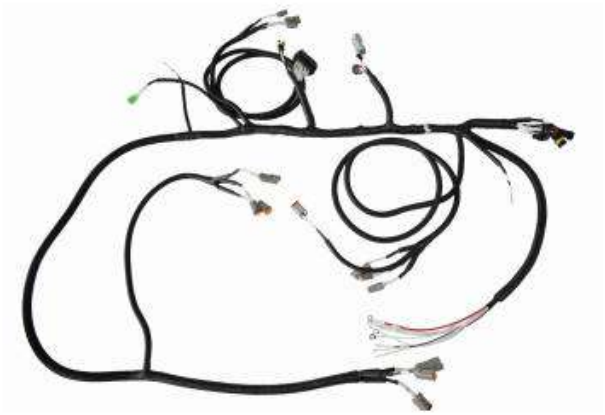
# 新能源线束-电动车
# Renewable Energy Wire Harnesss-Electric Vehicle Wiring Harness





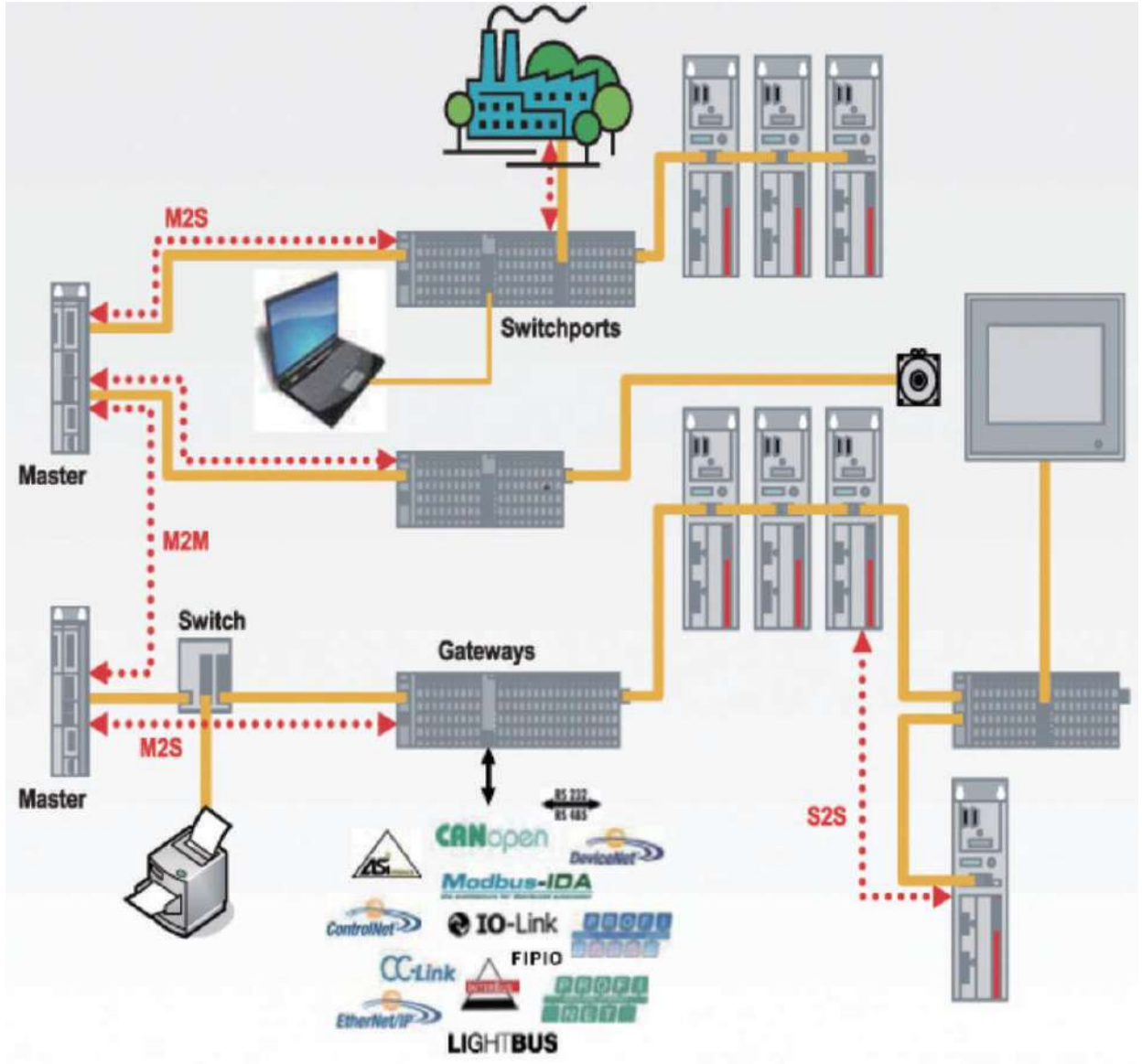


# 车载线束
# Industrial Wire Harness



# 医疗线束
# Medic Wire Harness

# 工业以太网电缆
# Industrial Ethernet Cables




## 特点 Features

- 速度很快 Faster 2x100mbaud
- 同步性 Synchronous
- 灵活布线 Flexible Wiring
- 低成本 Cost Efficient
- 安全性 Safer
- 冗余性 Redundant

## 订购编号 Ordering Information

**XM-IE-MS4D-RJ45-VS 3**

① ② ③ ④

① 接口标准 Interface Standard

**IE** industrial ethercat

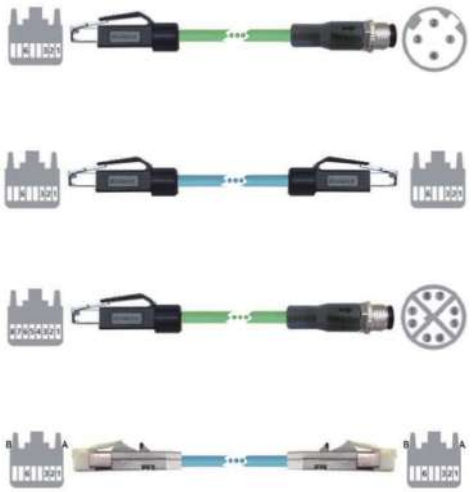
② 连接器型式 connector type

| | |
|---|---|
| **MS4D-RJ45** | Rj45/m12 D-code 4p Male Straight |
| **MS8X-RJ45** | Rj45/m12x-code 8p Male Straight |
| **RJ45A** | Aj45/rj45 Straight Wiring |
| **RJ45E** | Emi Rj45/rj45 Straight Wiring |

③ 电缆类型 cable type

| | | |
|---|---|---|
| **VS** | 超柔电缆 | Flexible Cat5e Pvc Cable Black |
| **US** | 耐弯曲电缆 | durable cat5e green |
| **LS** | 低烟无卤电缆 | lszh cat5e cable black |

④ 线长（米）cable length(m) **1-20**



# Process introduction

Future & Quality

Cut line & press → transposition → supersonic welding → pyrocondensation → Blind blocking → preload → final assembly → loop-around test → Imaging test → Card nail test → External inspection → pack

Double head winch machine

Groofing samples

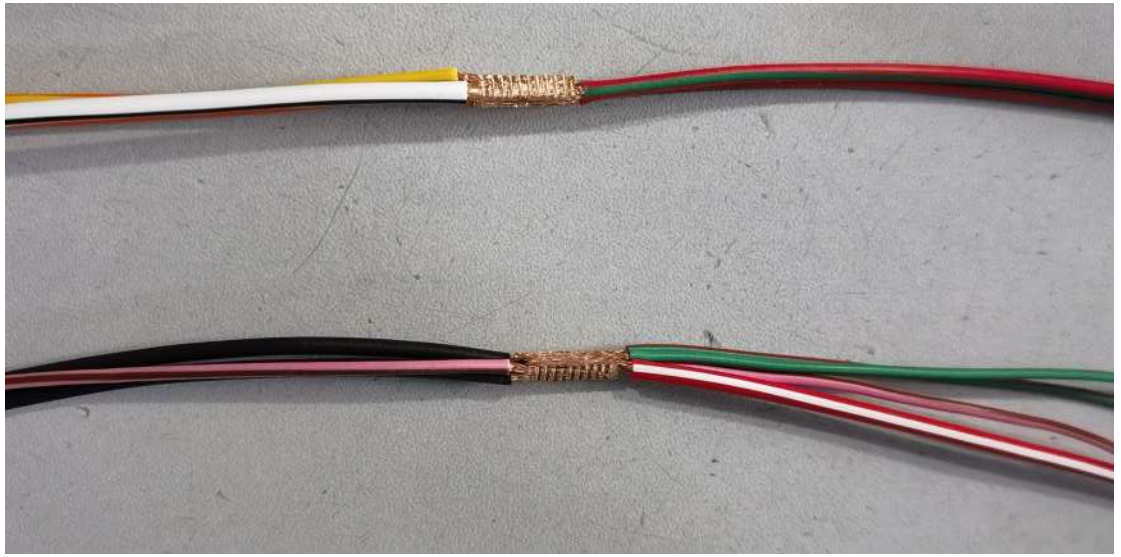
| device name | device type | Equipment function | critical control point | risk | Error prevention measures | Detection method |
|---|---|---|---|---|---|---|
| Double head winch machine | HBQ068 | HBQ-068 double-head winch is mainly used in the field of wire harness processing, and it can be twisted together. The duplex positions can work alternately and continuously. While loading the clip, while twisting, save time | 1. Length after hanging<br>2. Hanging distance | 1. Use the wiring harness wrong | 1. MES system to prevent errors (the material QR code will be scanned before the cable, and the system will compare the scanning information with the system process parameters information, and if there is any discrepancy, the warning will be issued) | 1. Inspection of the first parts and the final parts |

# Process introduction

Future & Quality

Cut line & press → transposition → supersonic welding → pyrocondensation → Blind blocking → preload → final assembly → loop-around test → Imaging test → Card nail test → External inspection → pack

ultrasonic welding machine



Welding samples

| device name | device type | Equipment function | key point | risk | Error prevention measures | Detection method |
|---|---|---|---|---|---|---|
| ultrasonic bonding machine | semi-automatic | Multi-wire harness welding / large square welding / auxiliary flux welding | Welding pressure / amplitude / energy | 1, the product deficiency welding / over-welding is poor<br>2. Material use error | 1, welding products welding height / welding energy / welding time super difference, can automatically alarm, and immediately stop the production<br>2, the MES system error prevention | 1. Employee appearance self-inspection;<br>2. Product height / width first / final inspection;<br>3. First / final inspection of product tensile force / tear tension |

# Process introduction

Future & Quality

Cut line & press → transposition → supersonic welding → pyrocondensation → Blind blocking → preload → final assembly → loop-around test → Imaging test → Card nail test → External inspection → pack

Automatic glue coating machine

Welding point-coated adhesive sample

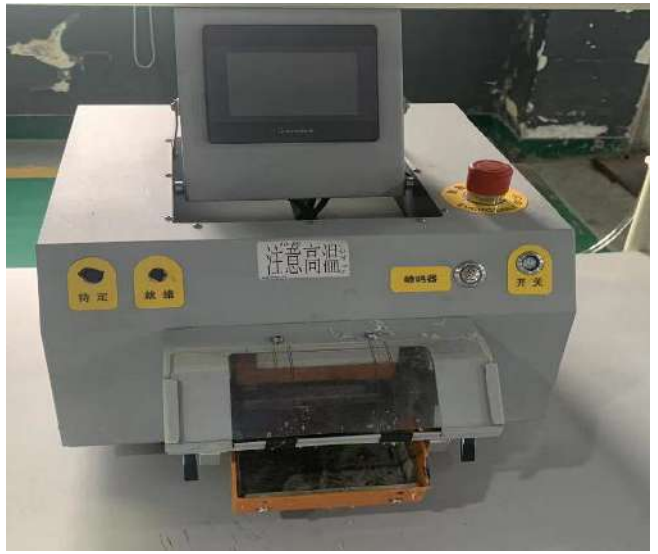
| device name | device type | Equipment function | key point | risk | Error prevention measures | Detection method |
|---|---|---|---|---|---|---|
| Automatic glue coating machine | semi-automatic | Coase the weld points | Welding point package firmness, length, prevent leakage | Spcore / package tightness / length | 1. MES system to prevent errors | 1. Employee appearance self-inspection<br>2. First / last test |

# Process introduction

Cut line & press → transposition → supersonic welding → pyrocondensation → Blind blocking → preload → final assembly → loop-around test → Imaging test → Card nail test → External inspection → pack

Heat shrinkage machine type I

End-point thermal shrinkage samples




Heat shrinkage machine model

Ordinary thermal shrinkage sample

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| Heat shrink machine | semi-automatic | Normal heat shrinkage / endpoint heat shrinkage | By heating the heating plate, the heat shrink pipe is effectively contracted, glue out, to reach the sealing state | 1. Use the wiring harness wrong<br>2. Wrong selection of heat shrink tube<br>3, the temperature is too high to damage the products | 1. MES system to prevent errors<br>2. Temperature early-warning system | Inspection of the first parts and the final parts |

# Process introduction

Cut line & press → transposition → supersonic welding → pyrocondensation → **Blind blocking** → preload → final assembly → loop-around test → Imaging test → Card nail test → External inspection → pack

Automatic blind blocking machine

The latter process takes the instrument production line as an

Automatic blind, blocking the samples

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| Automatic blind blocking machine | full-automation | Automatic installation of blind blocking | Blind blocking is installed correctly and in place | Misloading, leakage | 1. Blind blocking and installation system procedures | First-piece inspection and electrical inspection table |

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Pre-installed platform

Line number selection type error-proof identification plate

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| Pre-installed platform | self-development | Realize line drawing and terminal assembly | Correct hole position, and anterior insertion rate | Misak, wrong terminal, wrong sheath selection, wrong line number selection | 1. Pre-loaded drawing and preloaded circuit list | Employee self-inspection Electrical detection table detection |

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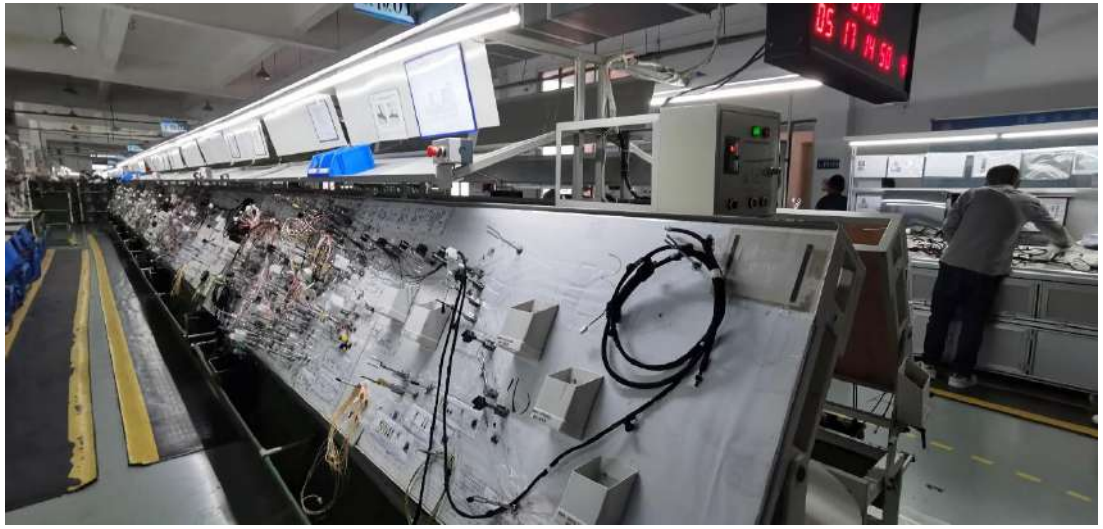
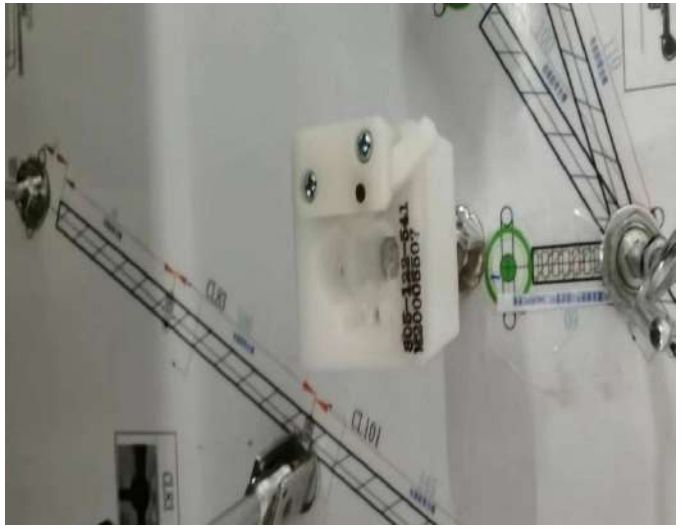
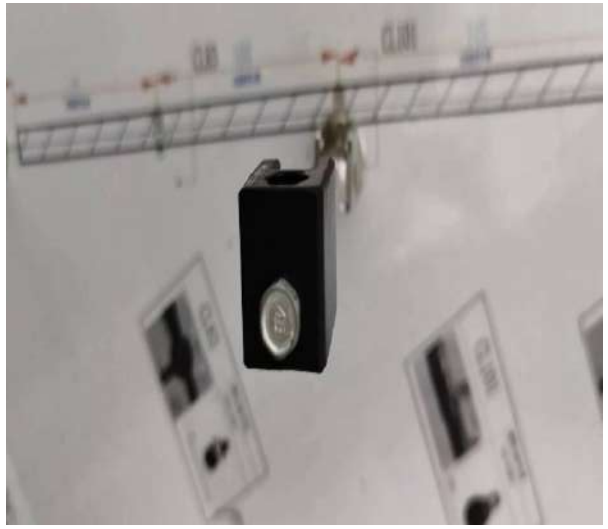


pipeline



The sheath error prevention module



The buckle install the anti-error module

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| pipeline | semi-automatic | Realize the assembly of small wire harness, large super long wire harness, multiple variety wire harness and simple process wire harness | Wiring, winding tape, dimensions | The size does not meet the requirements, buckle size offset, tape selection is wrong | 1. Different line colors on the tooling board correspond to different types of tape<br>2, the tooling board sheath module to prevent the wrong use of the sheath<br>3, the buckle module on the work plate to prevent the wrong selection<br>4. HMES system for error prevention | first item inspection<br>Check the size of the nail<br>Electrical inspection table inspection |

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Electric test desk

Jacket selection type error prevention, air tightness test module

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| Electric test desk | semi-automatic | The probe terminal TPA can be realized , Air density detection, guide loop detection, material shape error detection | Circuit conduction, electrical performance detection, air density detection | Program selection error | 1. Module error prevention<br>2, the HMES system error prevention<br>3. Procedure error prevention | Error prevention line test |

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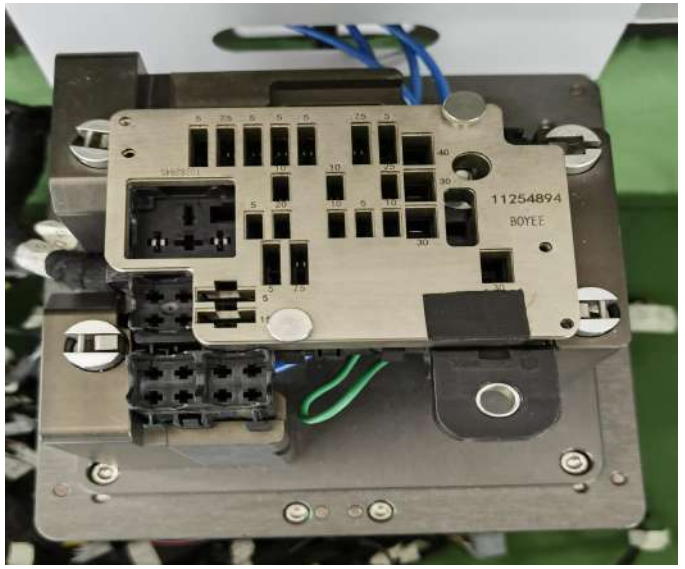
Image test table

Relay guide platform




Fuse selection and error prevention module

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| Image test table | semi-automatic | The equipment can meet the fuse, relay model, location and existence detection | The patch relay is installed correctly | Program selection error<br>Wrong fuse selection | 1. HMES system for error prevention<br>2, the fuse selection to prevent the wrong tooling<br>3. Check the table | First and last inspection<br>Employee self-inspection |
| Relay conduction | semi-automatic | It can realize guide loop detection and anti-error detection of | Circuit conduction, electrical performance detection | Program selection error | 1. HMES system for error prevention | Error prevention line test |

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Card nail test table

Error prevention module

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| Card nail test table | semi-automatic | The equipment can meet the detection of the existence, size and direction of the pin | 1. Capping size<br>2. The presence of stuck nails<br>3. Binding direction | Program selection error | 1. Module error prevention<br>2, the HMES system error prevention<br>3. Procedure error prevention | Error prevention line test |

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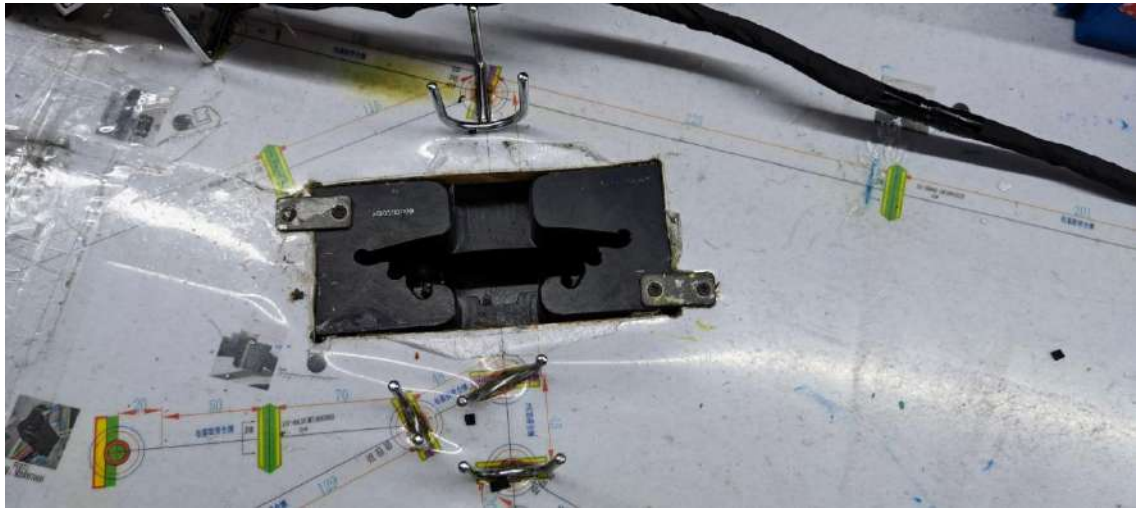
External inspection table



Rubber parts selection to prevent the wrong tooling

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| External inspection | self-development | 1:1 Size comparison to ensure the size of wire harness and the appearance of drawings; | Employee appearance self-inspection;<br>Size: 100% comparison;<br>Selection of sheath, support and rubber parts | Wear of the inspection board pictures<br>Dimensions offset | 1. HMES system for error prevention<br>2, the equipment to prevent the size node deviation<br>3, rubber parts selection to prevent the wrong tooling | Opening site inspection |

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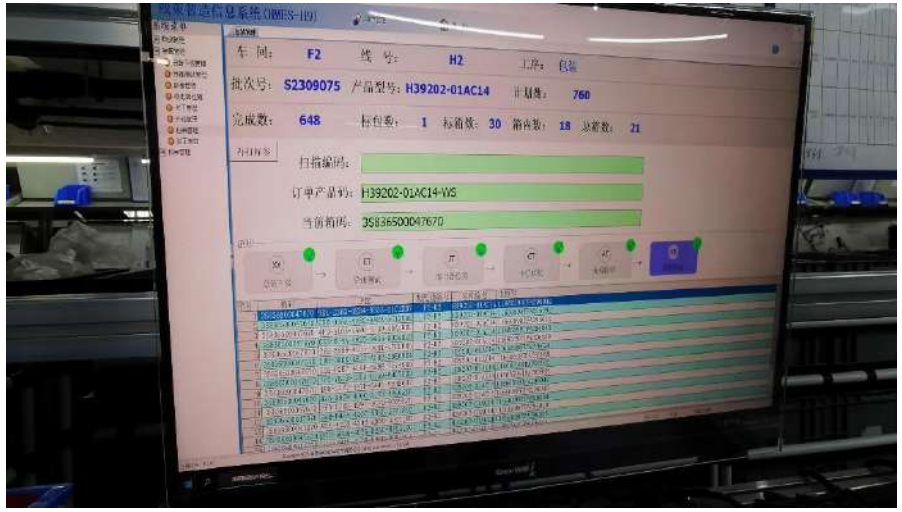
Packaging table




The HMES packages the error-proof system

The HMES system control label

| device name | device type | Equipment function | key point | risk | Error prevention method | Detection method |
|---|---|---|---|---|---|---|
| Packaging table | hand movement | Scan the product label to ensure the correct part number and quantity in the box; | Right product, the right quantity | The number of errors | 1. HMES system | Scan product labels |

Future & Quality

# Welcome to consult!

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