

# Product Introduction

Model : HW-T8-68FX/80F

Tel : +86-15931673319

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- Products on sale
- Elements of products

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# The Introduction of Company

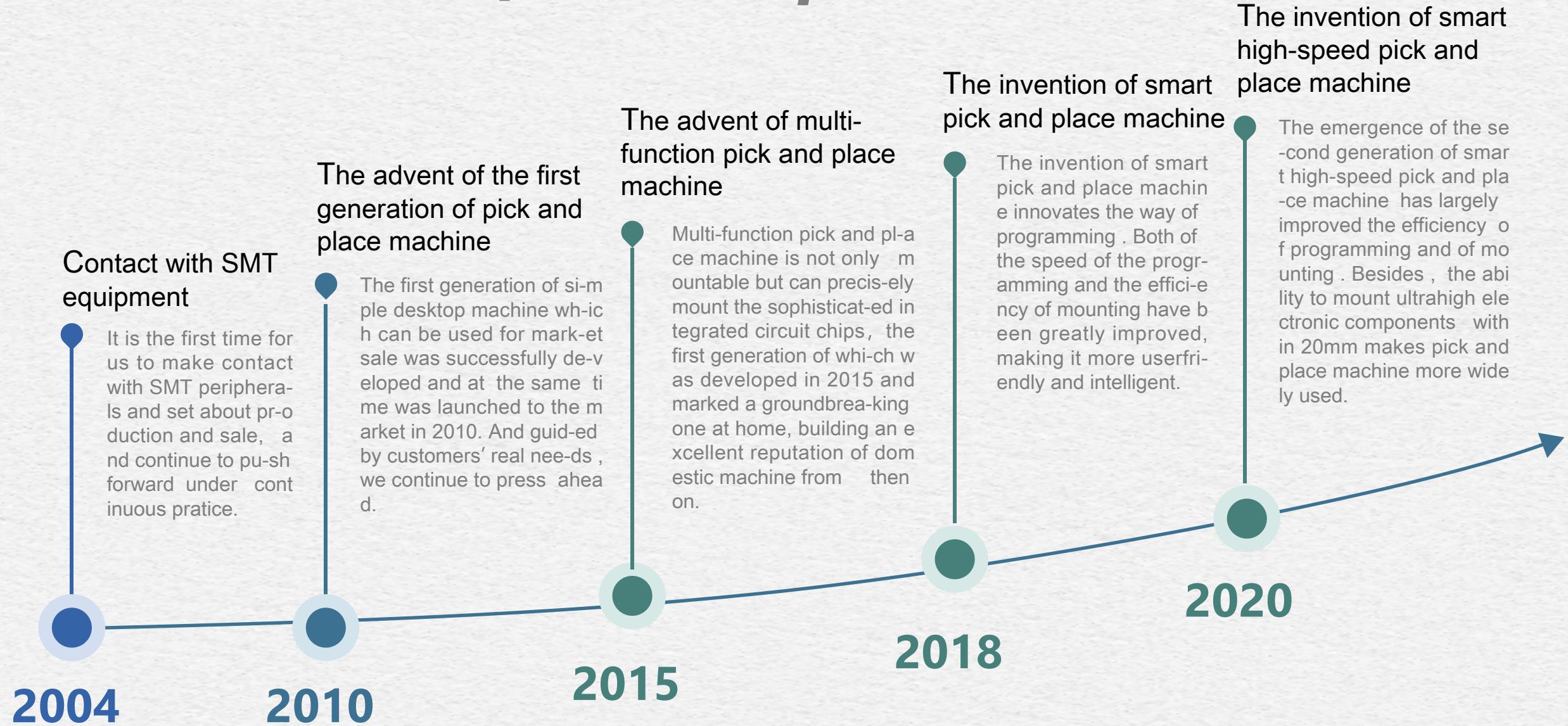
Beijing HuaweiGuochuang Electronic Technology Co. Ltd. is a Chinese high-tech enterprise with integrated research and development (R&D), production and sales operations. The pick and place machine, SMT's main equipment, is our key research and development equipment.

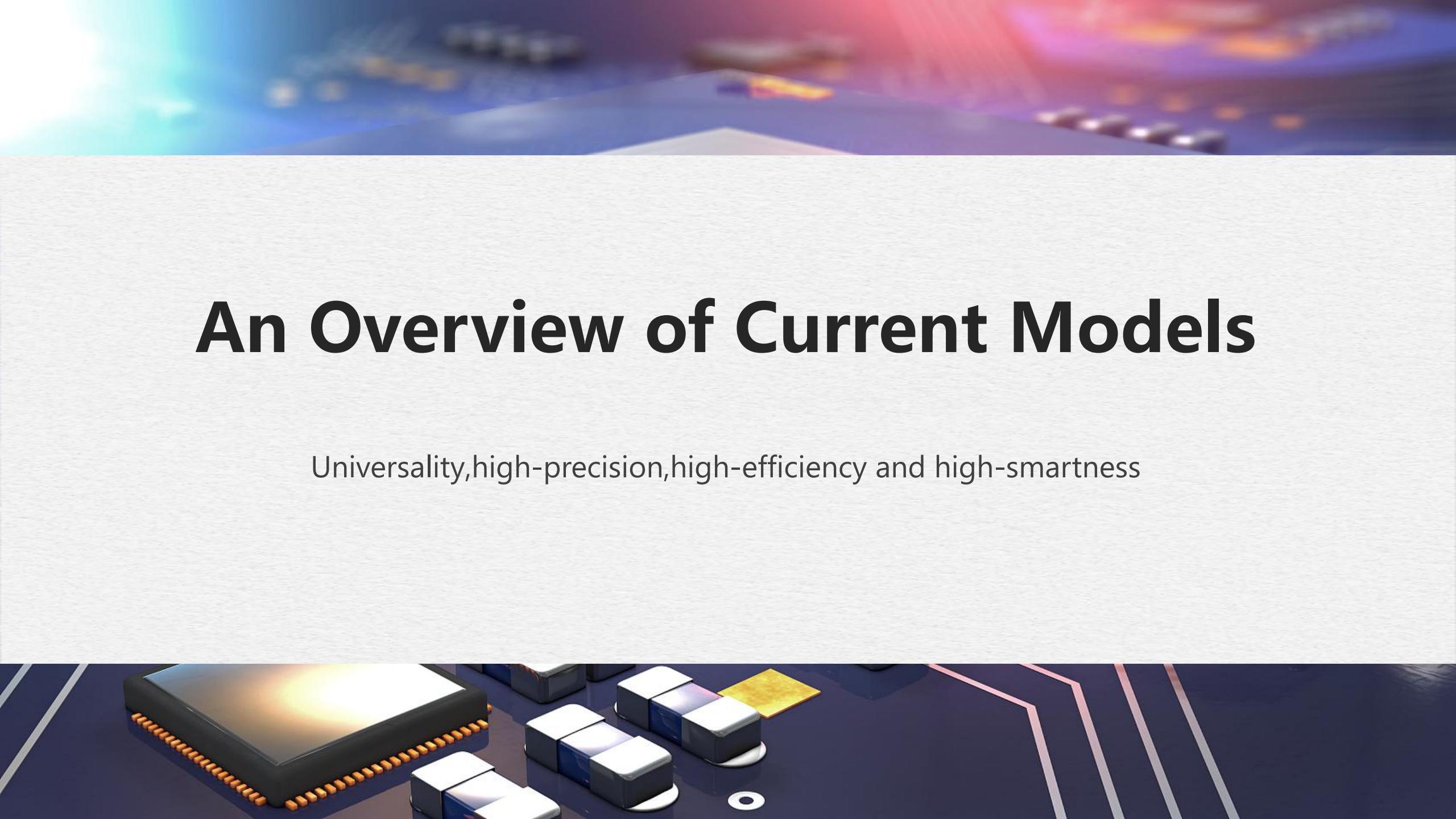
Our vision is to become an enterprise which makes cost-effective domestic pick and place machine of our own and we intend to break the current situation of international monopoly.

We have maintained the philosophy of being patriotic, pragmatic, innovative as well as serving the society. The products of pick and place machine on sale are not only appreciated by small and medium-sized enterprises at home, but also very well received by consumers abroad.



# *The Course of Development*

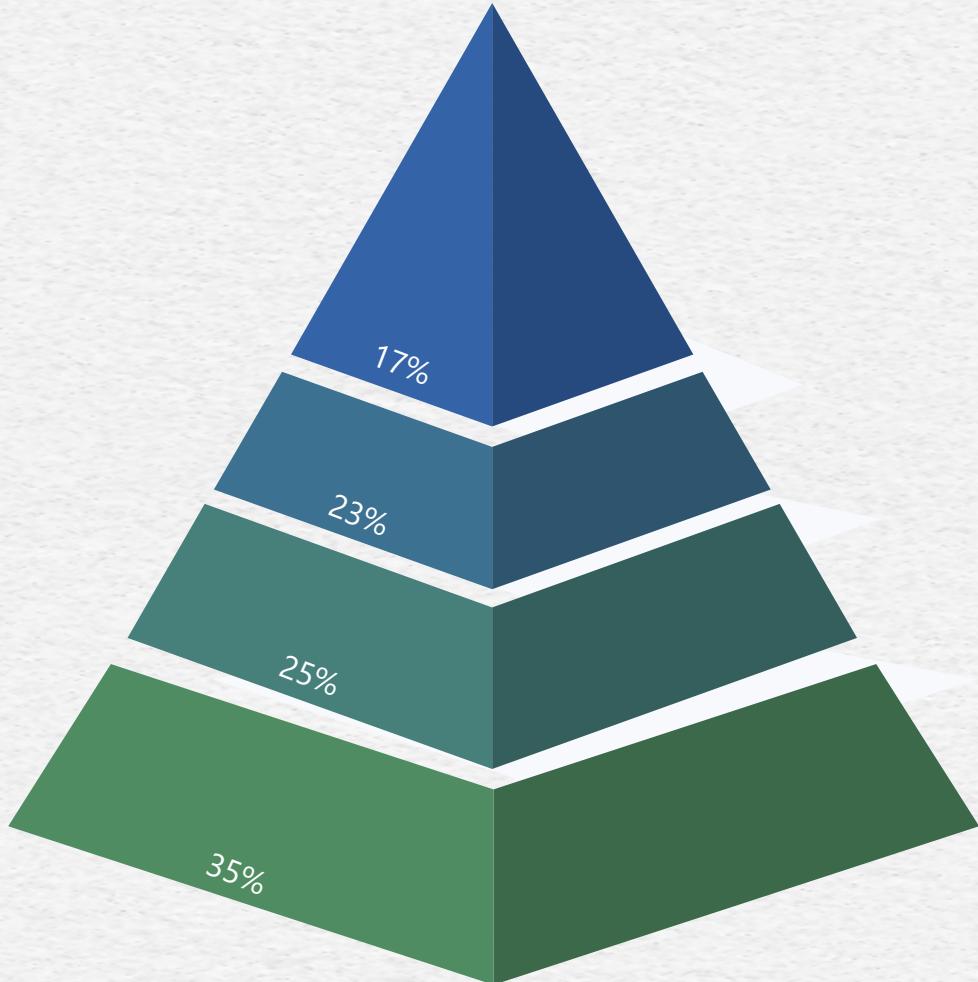




# An Overview of Current Models

Universality,high-precision,high-efficiency and high-smartness





### **Pick and Place Machine with Four Heads**

It is the main machine for PCB proofing in small volume of production.



### **Pick and Place Machine with Six Heads**

This type of machine runs at a medium speed and is of high precision, and it is universal for different requirements.



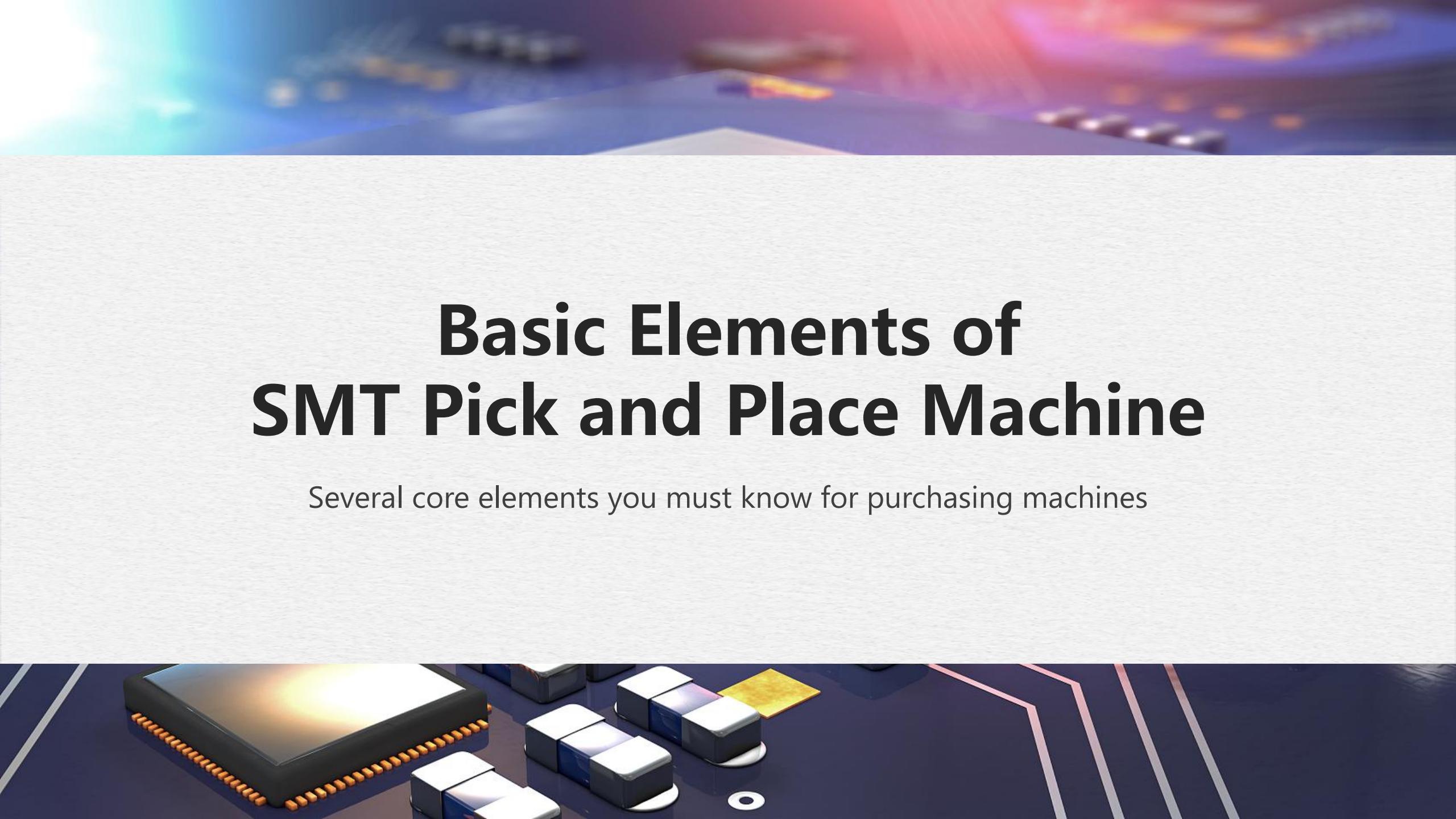
### **Pick and Place Machine with Eight Heads**

This high-precision, universal machine can be applied to the demand for mass production according to different requirements.



### **Innovative DU Series—Universal Pick and Place Machine at a High Speed**

In addition to meeting the basic needs, this type of machine is able to mount ultra-high electronic components up to 20mm.



# **Basic Elements of SMT Pick and Place Machine**

Several core elements you must know for purchasing machines

# The Most Essential Elements of A Qualified Pick and Place Machine

Before purchasing a machine, we must carry out a reasonable appraisal and consideration of the most essential performance. The quality and price varies vastly due to the multiple brands, so customers can't even figure out how to choose one which is most suitable for him-self. And it is very necessary for you to make full preparation before purchasing.

Then how can we choose a machine suitable for ourselves?



mounting  
accuracy



mounting  
stability



mounting  
Intelligence



mounting  
efficiency

The resistor and capacitor above 0402 can not represent the accuracy of the machine. The mounting accuracy and repeated mounting accuracy referred mean whether the precision chip with the lead pitch of 0.3mm can be accurately mounted. And the process can be completed without a second adjustment in a row for ten times.

After adjusting the program, the rate of finished products is higher than 99.5% under the condition of continuous 24-hour mounting.

The degree of manual involvement in the process of programming is less than 15%, most of the work is undertaken by the software part of the machine and completed automatically.

It refers to the mounting efficiency of the equipment per hour, namely the number of components to mount in unit time under the premise of ensuring the stability, for example, with stopwatch timing, the mounting efficiency of the machine is  $100 / 25 * 3600 = 14400$  pc/h based on the calculation of 25 seconds for 100 pieces.

# Introduction of Accuracy Unit

**0.05mm**

Mounting Accuracy

**0.01mm**

Positioning Accuracy

**0.02mm**

Repeated Accuracy

**24h**

Non-stop Work

# **HW-T8-68FX/80F**

Independent high-speed multi-function machine with eight heads which can hold 68/80 feeders



The Real Shot from the  
**Front**





External

# Structure of the Machine





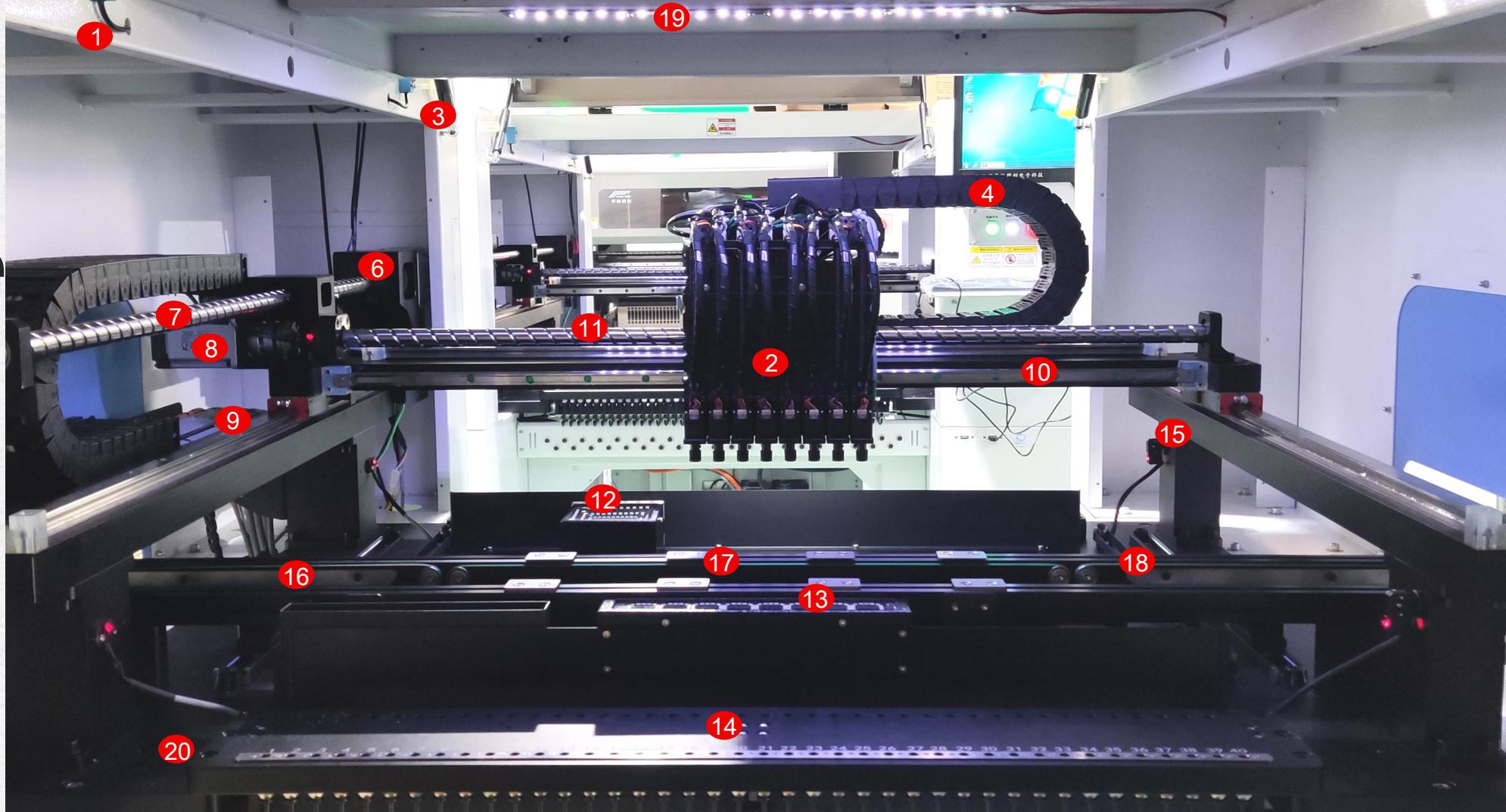
# Dimension of the Machine





Internal

# Structure of the Machine

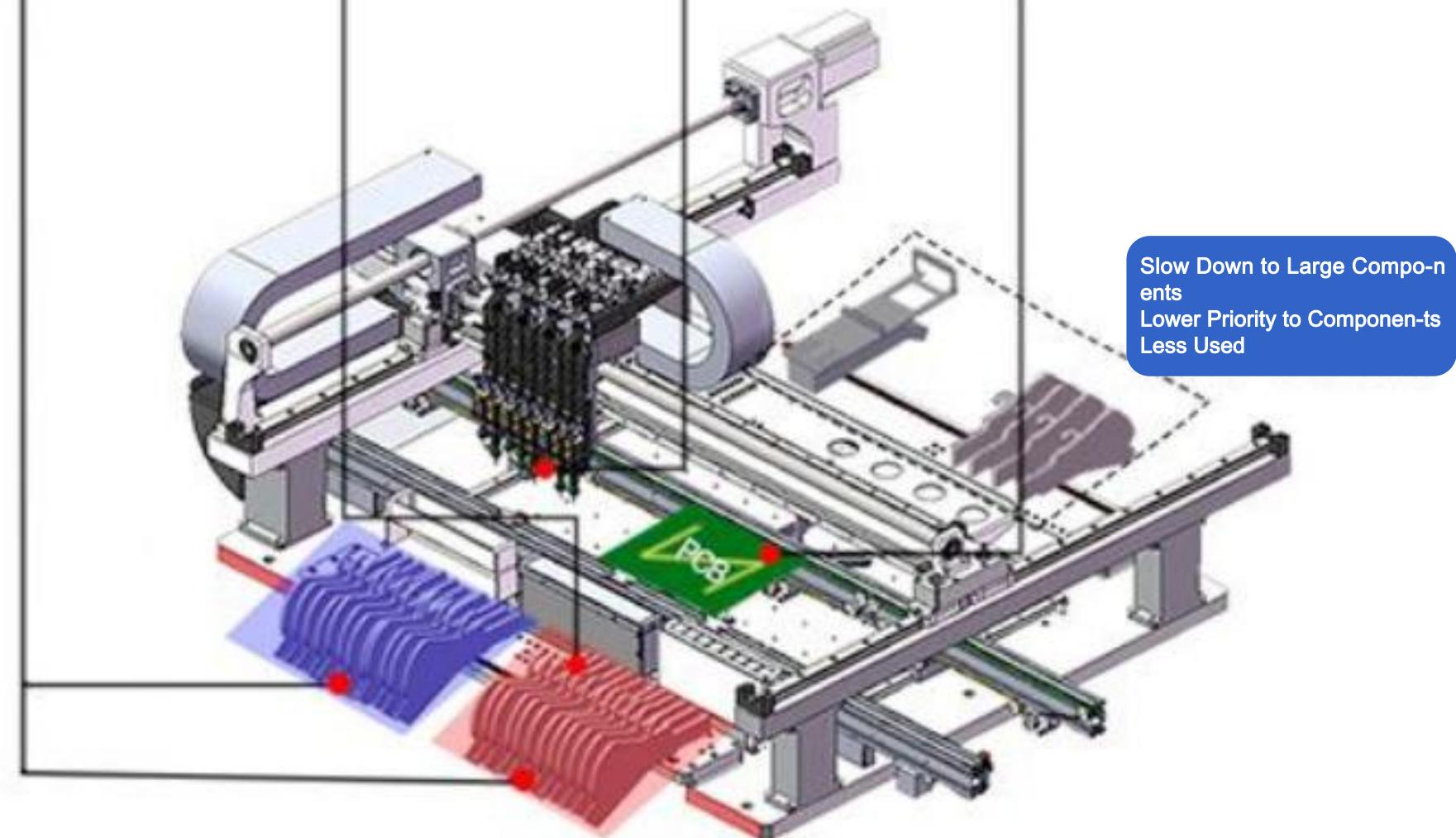


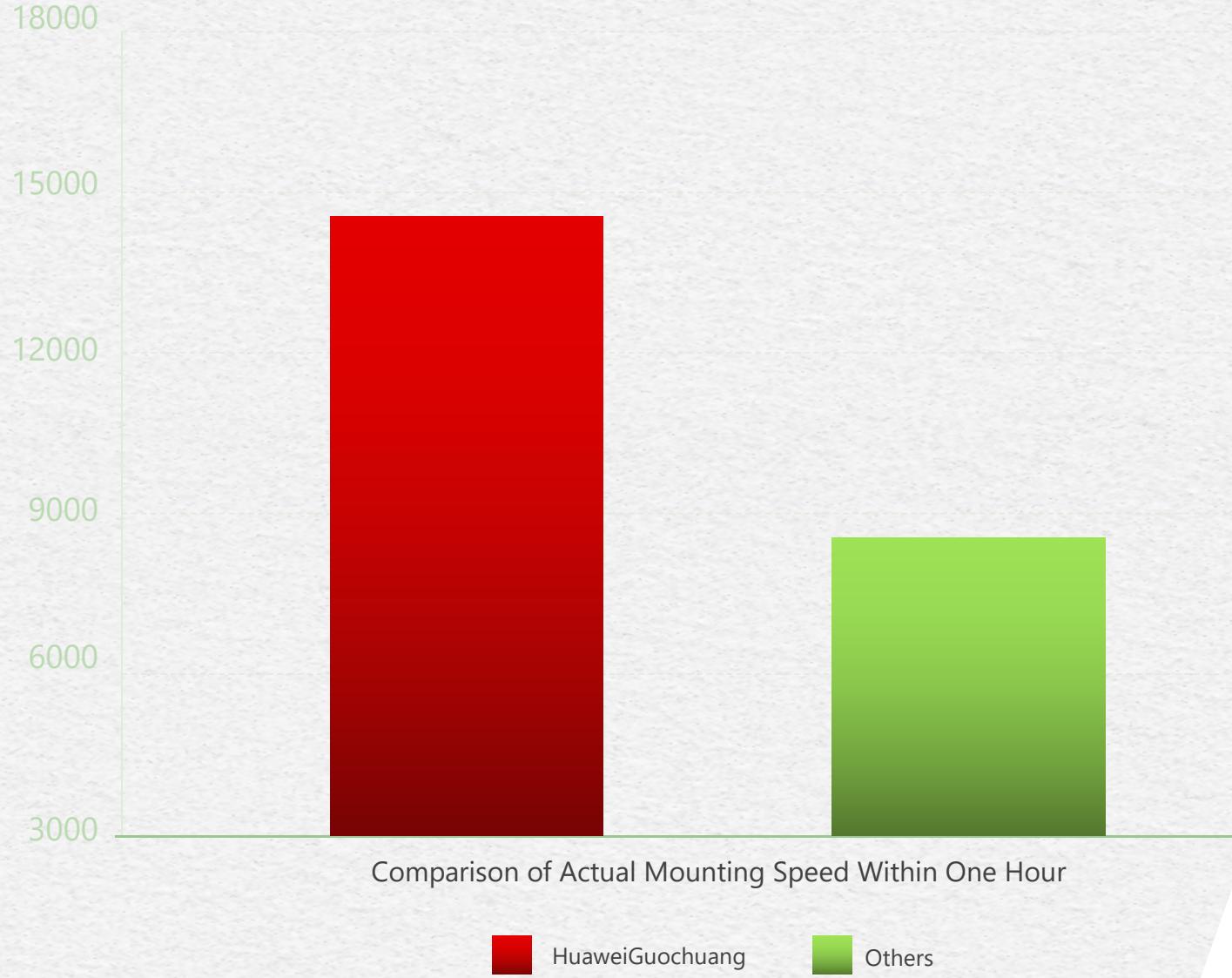
- 1.Housing 2.Placement Heads 3.Pneumatic Support Bar 4. Flexible Silent Cable Carrier
- 6.Servo Motor of Y Axis 7.Ground Ball Screw of Y Axis 8.Servo Motor of X Axis 9.Linear Motion Guide of Y Axis 10.Linear Motion Guide of X Axis 11.Ground ball screw of X axis 12. 5MP HD Camera 13.1MP Fast HD Camera 14.Feeder Slots 15.Anti-Collision Sensor
- 16.Waiting Area 17.Mounting Area 18. Exiting Area 20. Base



# Mounting Project Optimization System

Path Optimization Synchronous Picki-  
ng + Shortest Path Majority Priority + Automatic Distri-B  
ution of Nozzle S  
equence + Global Optimizati-o  
n of PCB Path + Friendly Compat-i  
bility of Core Al-g  
orithms





\*The speed is the actual mounting speed calculated by manual hand-held stopwatch within one hour, so as to eliminate the possibility of exaggerating the data with false mark in the software.

# Competitive Comparison

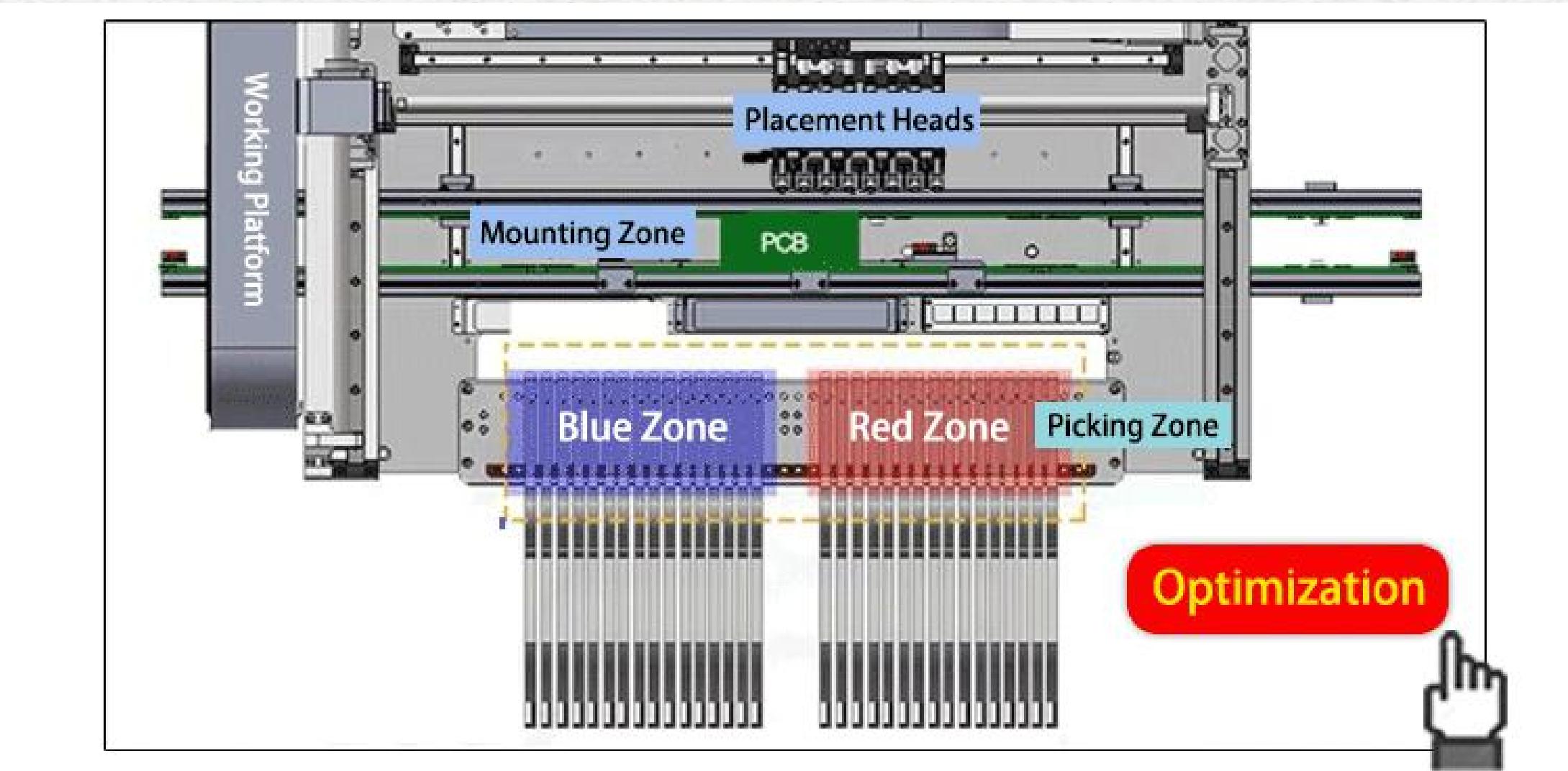
## of Mounting Efficiency



# Product Advantages

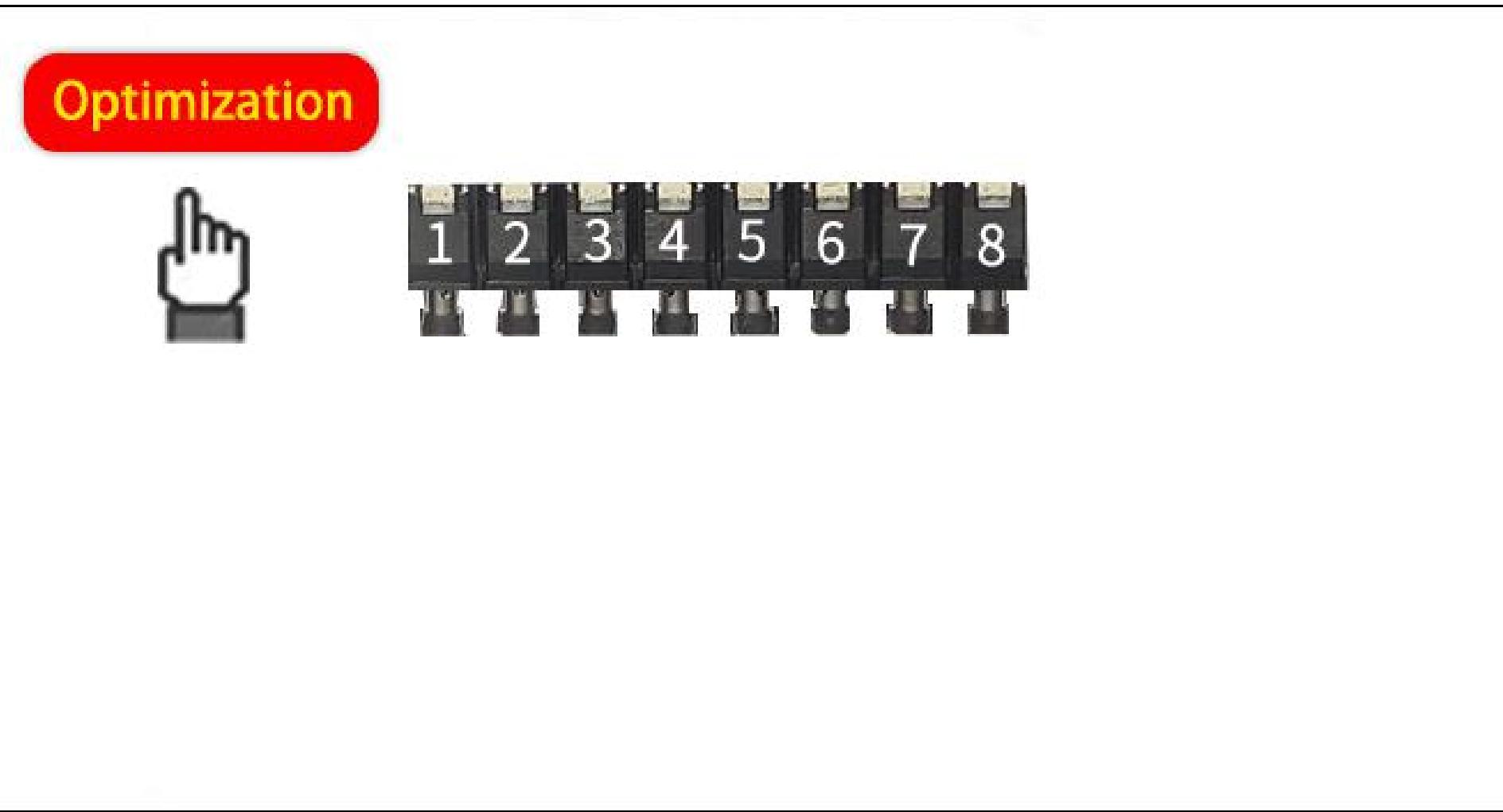
Software

Intelligent optimization makes the troublesome distribution of multiple components' feeding more efficient and logical, compared with the traditional manual method.



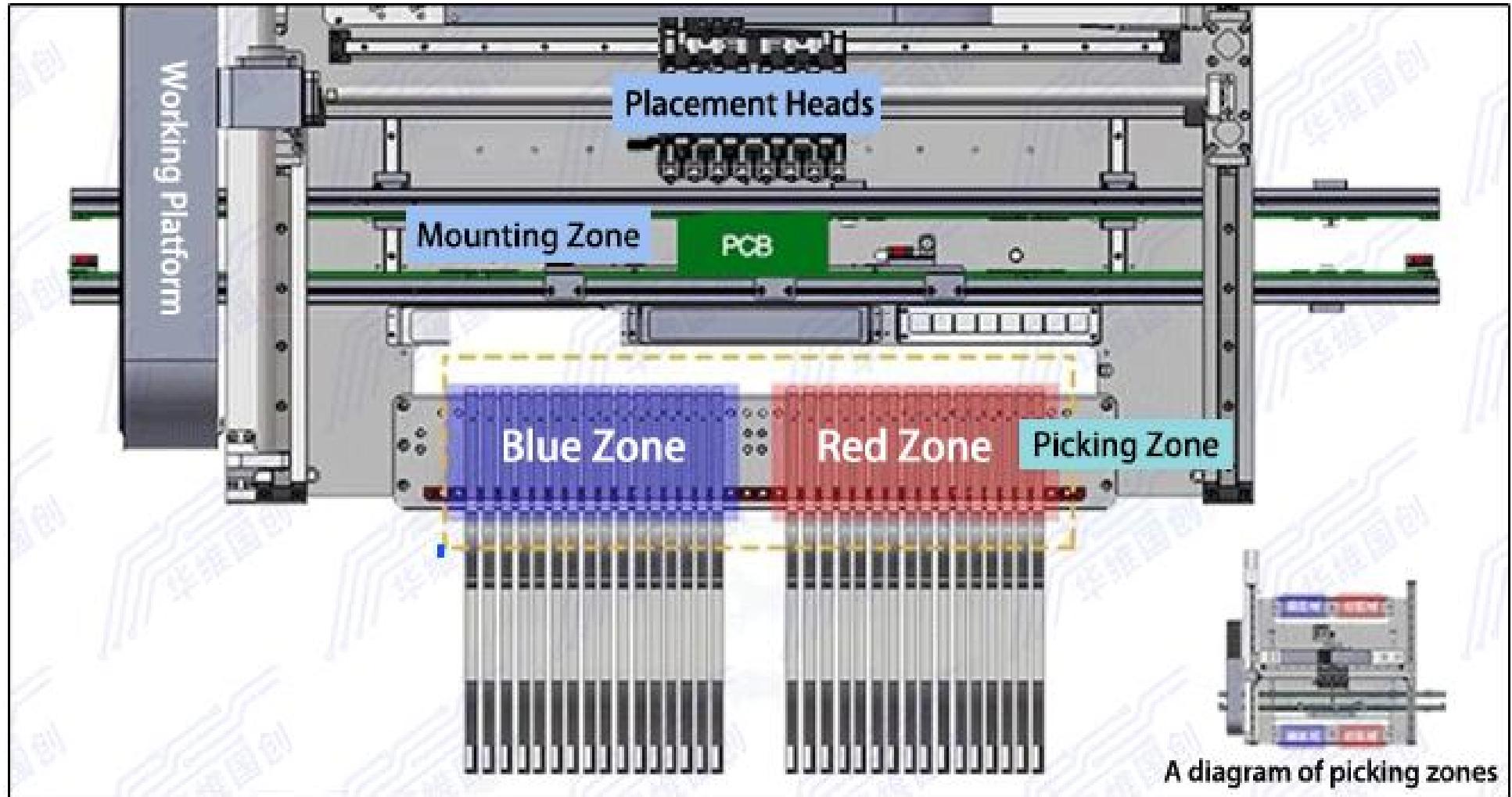
Automatic optimization of feeders' installation positions tackles the problem of tedious manual distribution perfectly

Select nozzle models intelligently according to BOM, and update the position number of corresponding nozzle in the program synchronously.



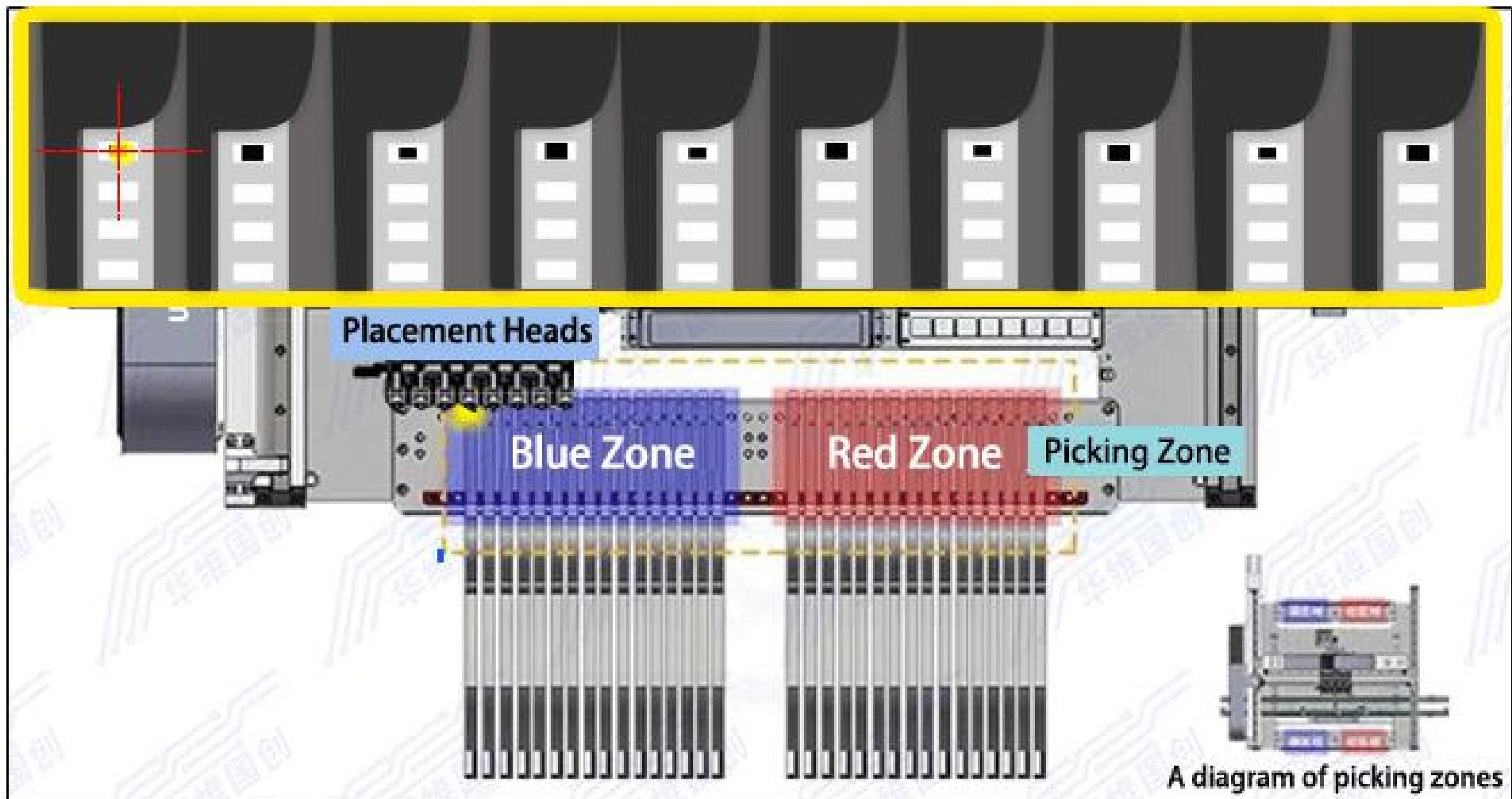
**Automatic optimization of nozzles' installation sequence**

The seamless connection between feeding and picking is achieved by the one-click optimization implemented by intelligent algorithms.



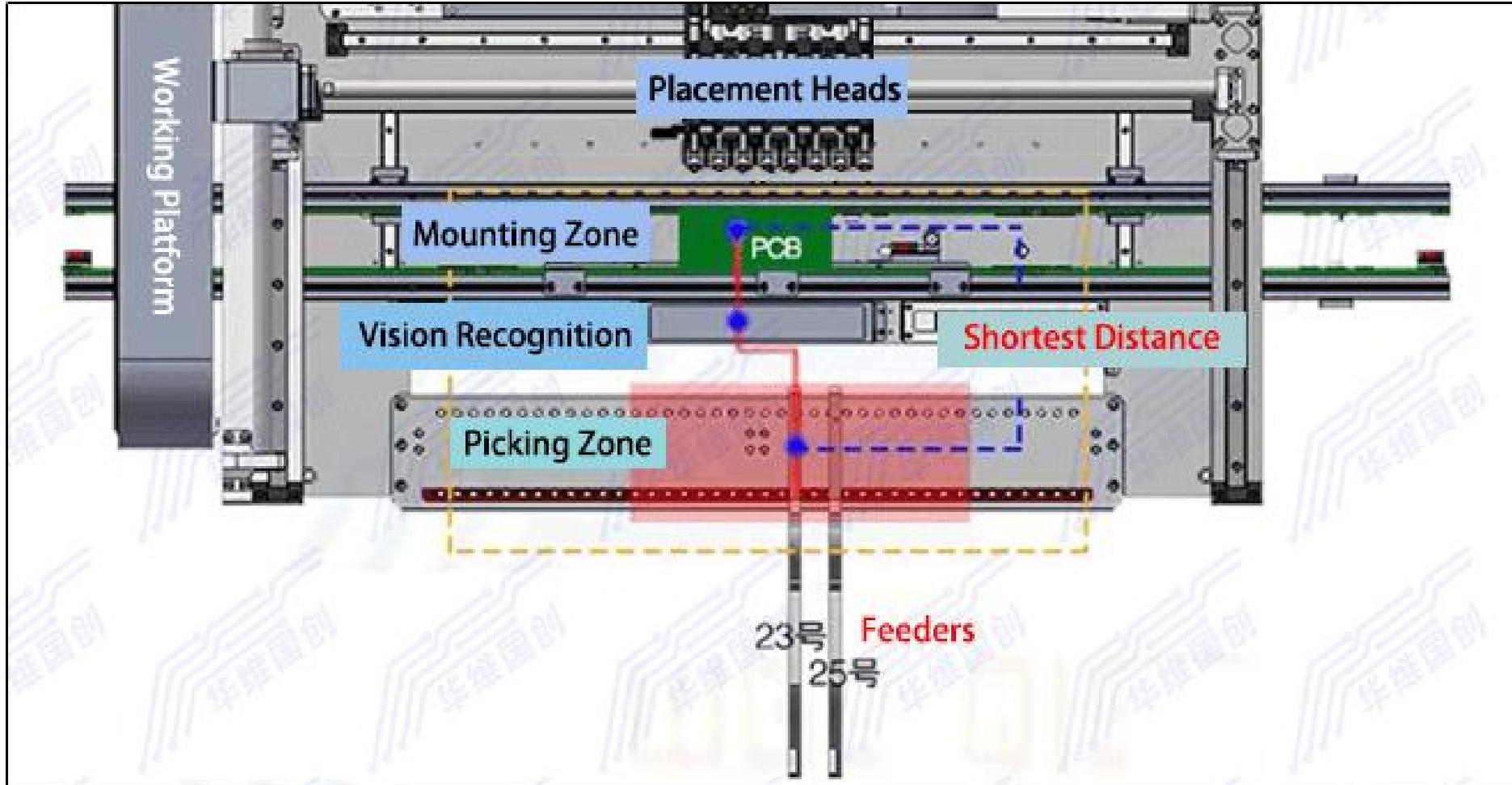
Concurrent picking with multiple heads, which maximize the efficiency of picking

The meaning of this function: It can save 30% programming time costs and greatly improve efficiency by fast, efficient and accurate one-click operation.



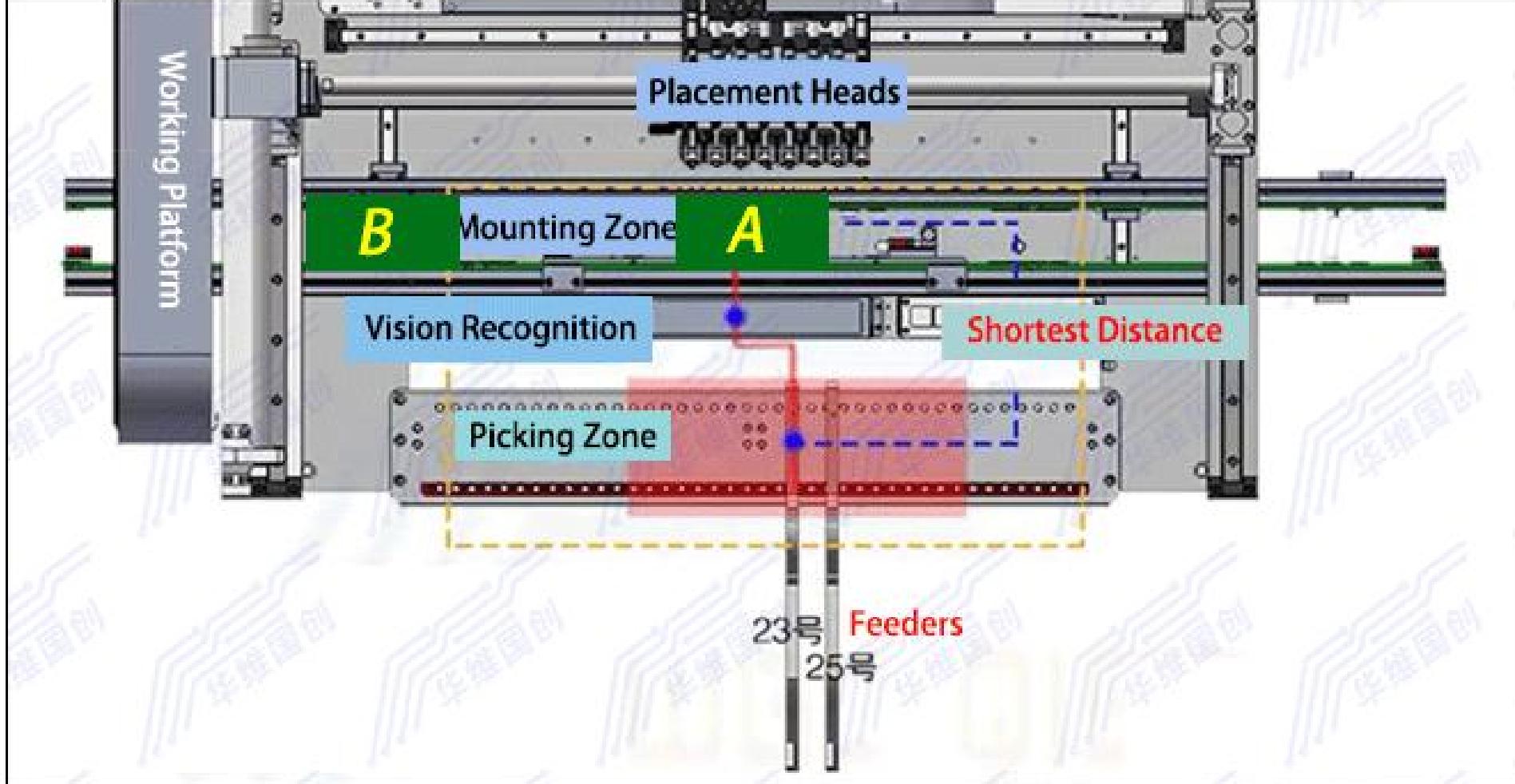
Automatic calibration of feeder picking coordinates

Using the system's intelligent algorithm, HuaweiGuochuang mounting system can help you make it with just one click instead of conducting tests and distributing the complex and massive layout by hand.



Full automatic layout of the shortest path for mounting

In order to save time costs as much as possible and realize high energy efficiency, we divide the entry process into three stages including waiting stage, mounting stage and exiting stage for finished products.



Three-stage entry

# Details of Products

True precision, true high-efficiency and true smartness

# Industrial Computer

17-inch display, keyboard and mouse.

User-friendly OS already installed, supports WinXP / Win7, vision programming and PCB file importing etc.



# Precision Ball Screw and Linear Motion Guide

The use of imported precision ball screw and linear motion guide, will bring long term maintenance-free operation, high accuracy and noise-free running, improves the machine performance effectively.

Guarantee the mounting accuracy of 0201-0402,QFN,QFP and BGA.

Achieve high stability of 24-hour continuous work without downtime, considerably improving the productivity.



# High Durable Cable Carrier and Flexible Cable

Use the same type of cable carriers bearing up to 10 million constant motions as imported machines.

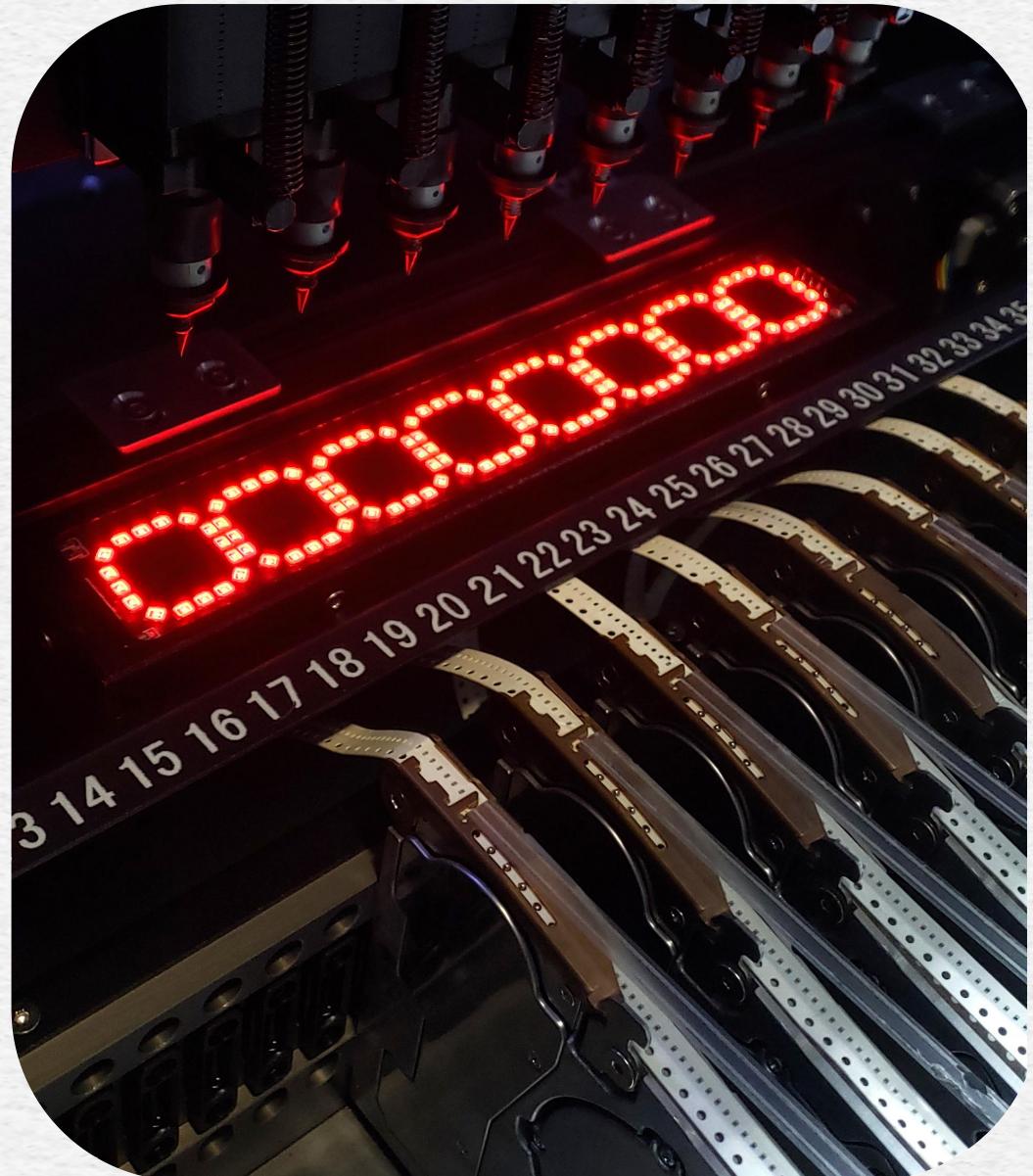
Igus flexible cables designed for industrial motion application, which can resist a range of dangerous conditions, like extreme temperatures and oil, and can handle any type of motion, including horizontal, torsional or high speed, ensure the reliable connection of the electrical circuit in high-speed reciprocating motion.



# HD Camera

Professional imported 5MP industrial calibration HD camera used for mounting chips and its supporting 5MP distortion-free industrial vision HD lens.

Eight 1MP industrial fast recognition cameras which can increase efficiency significantly by simultaneous recognition of eight placement heads.



# Product Specification

Software part

| Model                                   | HW-T8-68FX/80F   |
|---|--|
| Number of Placement Heads               | 8(high-accuracy)   |
| Number of IC Trays                      | 48   |
| Number of Feeders                       | 68/80(subject to 8mm feeder)   |
| Positioning Accuracy                    | 0.01mm   |
| Repeated Mounting Accuracy              | 0.02mm   |
| Range of Mounting Speed                 | 10000-12000Pcs/h   |
| Applicable Components                   | resistor, capacitor, chip, lamp bead etc.  |
| Supported Maximum Area of PCB           | (68FX)500*450mm / (80F)500*380mm   |
| Feeders                                 | electric feeder, pneumatic feeder, vibrating feeder, IC tray etc.  |
| Recognition Devices                     | mark camera x1, fast recognition camera x8, high-precision camera x1   |
| Maximum Height of Applicable Components | ≤7mm   |
| Recognition Methods                     | simultaneous recognition and picking with eight heads  |
| PCB Convey Mode                         | three-stage entry, automatic connection from left to right, automatic PCB positioning                              |
| Mark Positioning                        | manual / automatic   |
| Programming Method                      | automatic programming after manually importing files of PCB coordinates  |
| Control System                          | HuaweiGuochuang control system   |
| Maximum Step Length of XY Axis          | 629mm*679mm  |
| Tracks of XY Axis                       | double linear motion guide + double ground ball screw  |
| Motion Mode of XY Axis                  | intelligent linkage of acceleration and deceleration of curve and line, integrated linear interpolation algorithm. |

| Price                         |  |
|-------------------------------|--|
| Control Computer              | industrial control computer with Intel high-performance processor              |
| Adjusting Method of Tracks    | electric   |
| Range of Nozzle Buffer        | 4.5mm  |
| Maximum Step Length of Z Axis | 50mm   |
| Range of Angle for Components | ±180°  |
| Air Supply Requirements       | oil water filter,≥ 60L,dust filter and air pressure stabilizer etc.            |
| Vacuum Supply of Nozzle       | Japanese CKD vacuum generator integrating the high-speed vacuum burst function |
| Range of Air Supply Pressure  | 0.5-0.6mp  |
| OS                            | Independent research and development SMT intelligent OS based on Windows       |
| Vision Display                | 17-inch industrial control display   |
| Cable                         | German Igus durable flexible cable ( 10 million times )                        |
| Power Supply                  | 220V 50/60Hz   |
| Average Power                 | 800W   |
| Machine Dimensions            | 1410*1500*1540mm   |
| Weight                        | (68FX)750kg / (80F)850kg   |
|                               |  |
|                               |  |

# Software Operation

Reduction of errors caused by manual edit and achievement of intelligent programming

# Operating Manual

1

## Create production project and set mark points

Import the .CSV file exported from PCB files, generate project coordinates through four corner coordinate positioning, and automatically generate mark points. Through the packaging library, the layout of material station and nozzle can be generated intelligently, and the picking parameters and mounting parameters can be generated at the same time, greatly improving programming speed.

2

## Install feeder / nozzle

Install the corresponding feeders of electronic components and nozzles according to the assigned station of the system.

3

## Calibrate feeder picking coordinates intelligently

One-click operation without manual work. It can automatically calibrate installed feeder picking coordinates. Originally, it took an hour, but through the function of automatic scanning, it could be completed in a few minutes.

4

## Start mounting

After a short manual adjustment and efficient automatic programming, the process quickly enters the first board trial, then you can start mass production if it runs smoothly.



# Automatic Assignment of Mark Points

## **of Mark Points**

The screenshot displays the user interface of the Huwei Intelligent SMT System V2.0. The top navigation bar includes 'DISCONNECT', 'Project Create/Open', 'Project Close', 'DU800\_96F\_EE Registered', 'System Setting', 'Device Calibration', and a file icon labeled '64'. The main workspace is divided into several sections:

- Left Panel:** Shows a coordinate system grid and camera controls for 'MarkCam' (highlighted in red), 'FastCam', and 'HighCam'. Below these are buttons for 'Noz 1' through 'Noz 8' and various control functions like 'Mark Para', 'Mark Light', 'Mark Led', 'Fcams Led', 'Hcam Led', 'Zoom x2', 'Visual Debug', 'Throw', and directional keys for 'Back', 'Up', 'Down', 'Left', 'Rst', 'Right', 'Fwd'.
- Middle Panel:** A table titled 'Import PCB' lists component data. The columns include 'Label', 'Chip Value', 'Footprint', 'X', 'Y', 'Angle', 'Re-Write', 'Hidden Current Column', and 'Show All Columns'. A context menu is open over the first row, showing options like 'Optional'.
- Bottom Panel:** Shows 'Sign in PCB XY (mm)' coordinates for four signs (Sign 1 to Sign 4) and their corresponding 'Sign in Machine XY (step)' coordinates. It also includes a 'Save' and 'goto' button for each sign. A 'PCB' diagram is shown with colored regions and labels X50000, Y50000, X50411, Y70245, X41416, Y73360, X46001, Y81981, and 'PCB'.



# Automatic Creation

## of Mounting Program After Manually Importing the File of Coordinates

PCB Edit → Optimize → Feeder Plug → Feeder Para → Diagnosis → SMT Run

PCB Edit

Import PCB Import Coord Import BOM 0/41 Search PCB Check Angle X

| n   | n     | n      | n      | n   | n     | n | n | n | n | n | n | n | n | n |
|-----|-------|--------|--------|-----|-------|---|---|---|---|---|---|---|---|---|
| R17 | a0603 | 3.4    | 32.7   | 90  | 100K  |   |   |   |   |   |   |   |   |   |
| R20 | a0603 | 21.3   | 45.2   | 180 | 100K  |   |   |   |   |   |   |   |   |   |
| R3  | a0603 | 29.... | 49.... | 360 | 100K  |   |   |   |   |   |   |   |   |   |
| R25 | a0603 | 21.... | 38.... | 180 | 100K  |   |   |   |   |   |   |   |   |   |
| R26 | a0603 | 21.... | 40.... | 180 | 100K  |   |   |   |   |   |   |   |   |   |
| R27 | a0603 | 21.... | 36.... | 360 | 100K  |   |   |   |   |   |   |   |   |   |
| R28 | a0603 | 21.... | 41.... | 360 | 100K  |   |   |   |   |   |   |   |   |   |
| R32 | a0603 | 26.... | 43.... | 270 | 100K  |   |   |   |   |   |   |   |   |   |
| R10 | a0603 | 1.9244 | 46.... | 90  | 100K  |   |   |   |   |   |   |   |   |   |
| C5  | a0603 | 18.... | 91.... | 0   | 100nF |   |   |   |   |   |   |   |   |   |
| C7  | a0603 | 28.... | 91.... | 0   | 100nF |   |   |   |   |   |   |   |   |   |
| C12 | a0603 | 5.3    | 32.73  | 90  | 100nF |   |   |   |   |   |   |   |   |   |
| C13 | a0603 | 6.8554 | 32.... | 90  | 100nF |   |   |   |   |   |   |   |   |   |
| C14 | a0603 | 8.4    | 47.3   | 270 | 100nF |   |   |   |   |   |   |   |   |   |
| C17 | a0603 | 23.... | 36.... | 90  | 100nF |   |   |   |   |   |   |   |   |   |
| C20 | a0603 | 22.319 | 32.... | 270 | 100nF |   |   |   |   |   |   |   |   |   |
| C23 | a0603 | 18.... | 32.... | 90  | 100nF |   |   |   |   |   |   |   |   |   |
| C24 | a0603 | 18     | 47.3   | 270 | 100nF |   |   |   |   |   |   |   |   |   |
| C21 | a0603 | 21.... | 35.... | 180 | 100nF |   |   |   |   |   |   |   |   |   |

Sign in PCB XY (mm)

Sign in Machine XY (step)

旋转180放置

Auto Get Sign  Precise Mode

|        |           |           |                  |              |              |                  |
|--------|-----------|-----------|------------------|--------------|--------------|------------------|
| Sign 1 | X 31.4757 | Y 113.698 | X50000<br>Y50000 | Save<br>goto | Save<br>goto | X50411<br>Y70245 |
| Sign 2 | X 17.606  | Y 2.8071  | Sign 1           | Sign 3       | Sign 4       | Sign 2           |
| Sign 3 | X 32.9    | Y 43.5    | X41416<br>Y73360 | Save<br>goto | Save<br>goto | X46001<br>Y81981 |
| Sign 4 | X 1.7     | Y 32.7    | PCB              | PCB          | PCB          | PCB              |

Generate PCB data



# One-click

Intelligent Optimization of  
Mounting Program

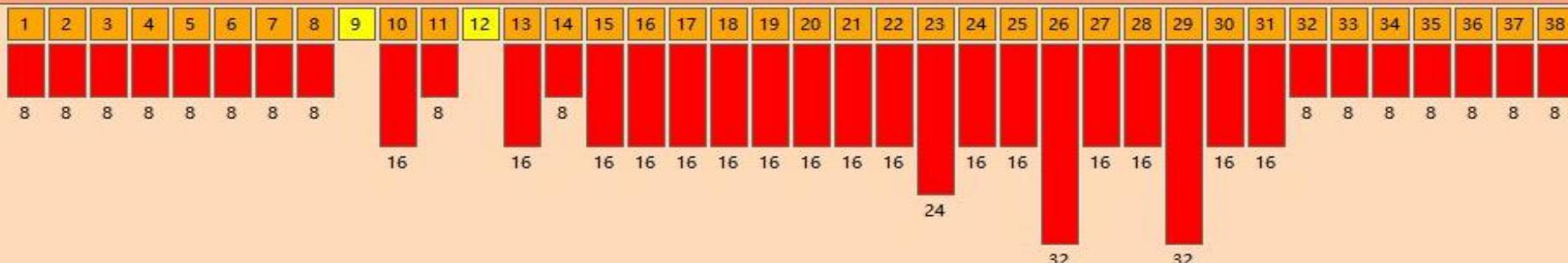
## 分类设置 优化生成贴装列表

| 来自封装库 |    | 料槽吸嘴禁用设置   |    | <input type="checkbox"/> 开启备用吸嘴 |     | 一键生成 |     | 本地料站库    |      |      |      |                                     |        |
|-------|----|------------|----|---------------------------------|-----|------|-----|----------|------|------|------|-------------------------------------|--------|
| 删除选定  |    | 从其他工程导入料站号 |    | 2/2                             |     |      |     | 优化结果     |      |      |      |                                     |        |
|       | 型号 | 封装         | 数量 | 供料                              | 料站号 | 多组供料 | 吸嘴  | 同取容差(毫米) | 相机   | 视觉算法 | 识别模式 | 降速搬运                                | 高度(毫米) |
|       | 2  | 402        | 48 | CL8-4                           | 自动  | 1    | 502 | 0        | 快速相机 | 标准视觉 | 二... | <input type="checkbox"/>            | 0      |
| ▶     | 5  | LQFP1...   | 1  | 料盒                              | 自动  | 1    | 505 | 0        | 高清相机 | 标准视觉 | 精... | <input checked="" type="checkbox"/> | 0      |



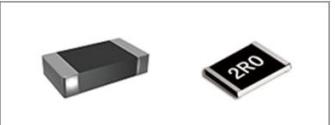
# Automatic Optimization for the Layout of Nozzles and Feeders

Feeder Installation Chat



# Applicable Components

Resistor and capacitor



Resisto      capacito

Lamp bead



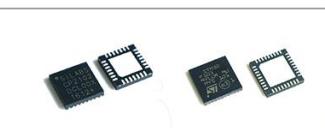
Lamp bead      Lamp bead      Lamp bead

SOP TO



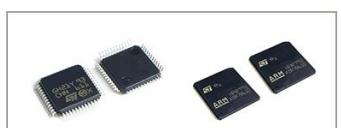
SOP      SOP      TO

QFN



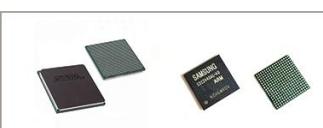
QFN28      QFN36

LQFP



LQFP48      LQFP144

BGA



BGA      BGA

Pin header connector



Pin header connector      Pin header connector

\*0201 , 0402 , 0603 , 0805 , 1206 , diode , triode, SOT and QFP , BGA with lead pitch  $\geq 0.3\text{mm}$  (subject to dimension of 40\*40 mm and lead center distance 0.5mm) etc.

# Honors

With the development of intelligent motion control system, visual recognition system, image processing system and other core technologies, our patch technology is becoming more and more mature.

In terms of hardware manufacturing, the core parts are imported brands to ensure more stable, reliable and long-term product performance. After winning a variety of invention patents, utility model patents and software copyright, the current mounting standard has reached the international level.

We not only have a stable customer base in China, but also get more and more favor overseas.





## Installation Requirements

- Air Pressure: range of 0.55Mpa-0.65Mpa  
Air Quantity: according to the scale of production line  
Air Condition: oil water removal  
Voltage: 220V for pick and place machine  
380V for reflow oven  
Temperature: 17°C ~ 28°C  
Humidity: 45% ~ 70%RH



**Customers in North of China**



**Customers in East of China**



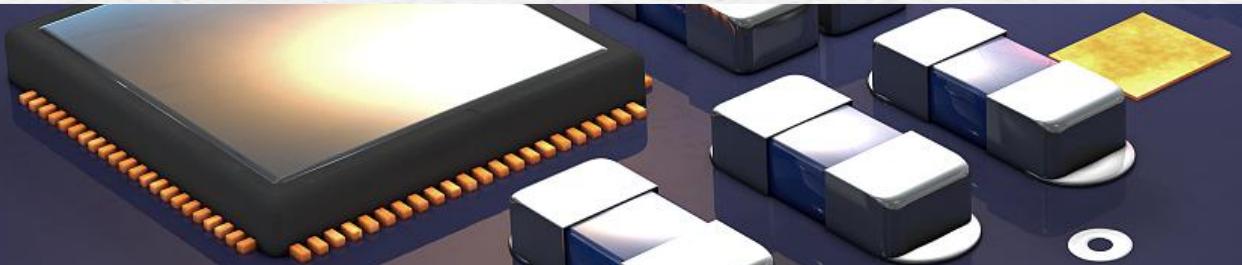


**Customers in South of China & Overseas**



# Common Production Line Configuration

The production line will be different according to different mounting needs, the following is for reference only



北京华维国创电子科技有限公司

Beijing Huaveiguochuang electronic science and technology Co., LTD.

## 八头贴片机生产线方案

Scheme of 8-nozzles mounter producline

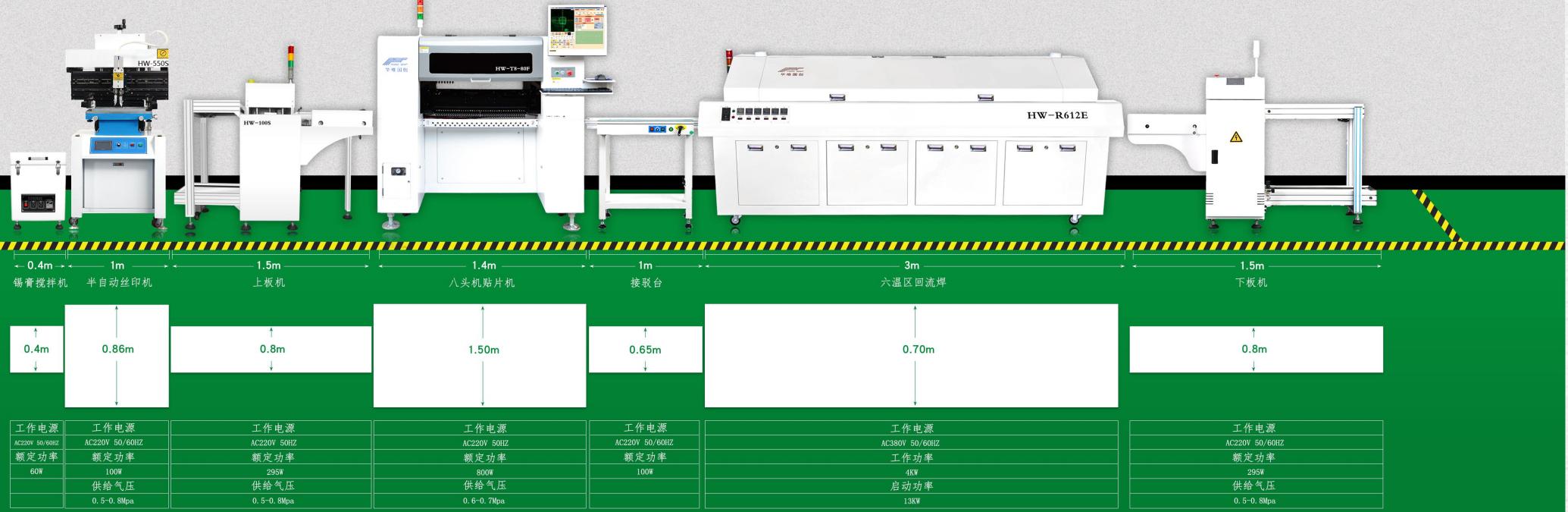
贴装速度区间

Interval of mounting speed

9600-12000Pcs/H

生产线总长度（9.8）米

建议配备生产人员1-2名



A production line plan which combines an eight-head machine and a reflow oven with six heating zones

北京华维国创电子科技有限公司

Beijing Huaveiguochuang electronic science and technology Co., LTD.

## 八头贴片机生产线方案

Scheme of 6-nozzles chip mounter production line

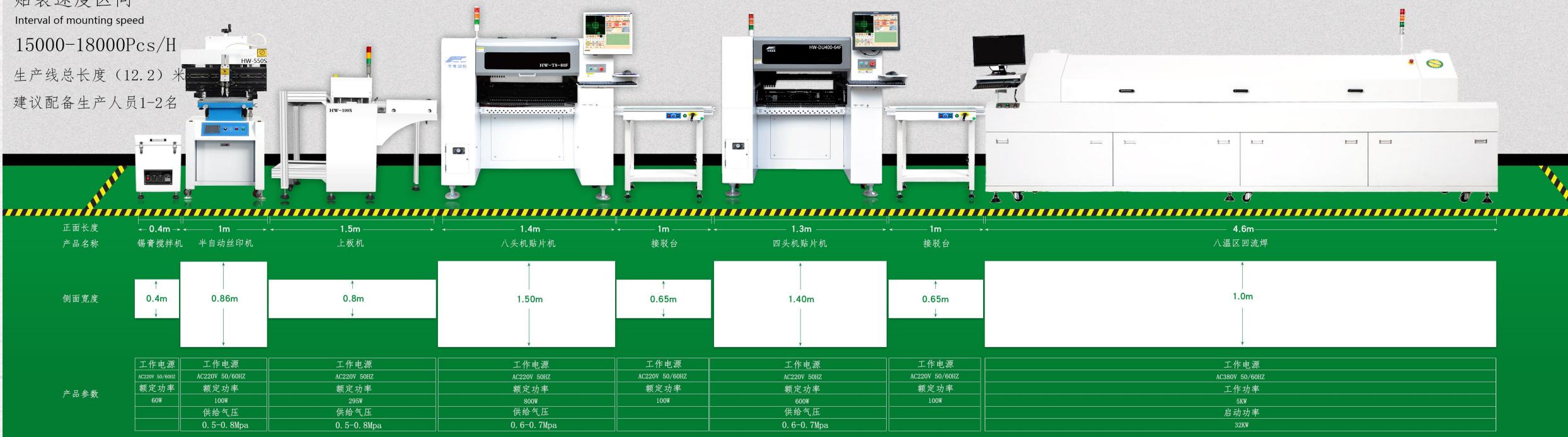
### 贴装速度区间

Interval of mounting speed

15000-18000Pcs/H

生产线总长度 (12.2) 米

建议配备生产人员1-2名



A production line plan which combines an eight-head machine, an independent four-head machine and a reflow oven with eight heating zones

北京华维国创电子科技有限公司

Beijing Huaveiguochuang electronic science and technology Co., LTD.

## 八头贴片机生产线方案

Scheme of 6-nozzles chip mounter production line

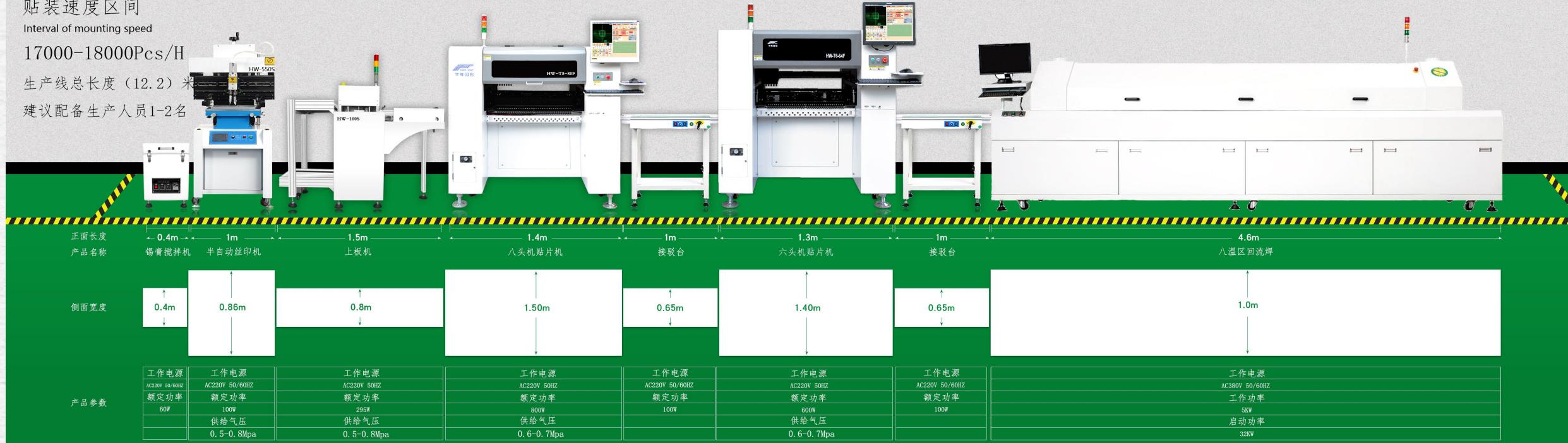
贴装速度区间

Interval of mounting speed

17000–18000Pcs/H

生产线总长度 (12.2) 米

建议配备生产人员1-2名



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## 八头贴片机生产线方案

Scheme of 6-nozzles chip mounter production line

### 贴装速度区间

Interval of mounting speed

19000-20000Pcs/H

生产线总长度 (12.3) 米

建议配备生产人员 1-2 名



正面长度  
Product name

0.4m 1m 1.5m 1.4m 1m 1.4m 1m 4.6m 八温区回流焊

侧面宽度

0.4m 0.86m 0.8m 1.50m 0.65m 1.50m 0.65m 1.0m 八温区回流焊

产品参数

|                |                |             |             |                |             |                |                |                |
|----------------|----------------|-------------|-------------|----------------|-------------|----------------|----------------|----------------|
| 工作电源           | 工作电源           | 工作电源        | 工作电源        | 工作电源           | 工作电源        | 工作电源           | 工作电源           | 工作电源           |
| AC220V 50/60Hz | AC220V 50/60Hz | AC220V 50Hz | AC220V 50Hz | AC220V 50/60Hz | AC220V 50Hz | AC220V 50/60Hz | AC220V 50/60Hz | AC380V 50/60Hz |
| 额定功率           | 额定功率           | 额定功率        | 额定功率        | 额定功率           | 额定功率        | 额定功率           | 额定功率           | 工作功率           |
| 60W            | 100W           | 295W        | 800W        | 100W           | 800W        | 100W           | 100W           | 5KW            |
| 供给气压           | 供给气压           | 供给气压        | 供给气压        | 供给气压           | 供给气压        | 供给气压           | 供给气压           | 启动功率           |
| 0.5-0.8Mpa     | 0.5-0.8Mpa     | 0.6-0.7Mpa  | 0.6-0.7Mpa  | 0.6-0.7Mpa     | 0.6-0.7Mpa  | 0.6-0.7Mpa     | 0.6-0.7Mpa     | 32KW           |

A production line plan which combines two eight-head machines and a reflow oven with eight heating zones

# Order Process

Understand customers' demand, quotation, negotiation and contract signing

# Order Process



## Visit the Exhibition Hall

Carry materials for actual mounting test.



## Make a Plan

According to each customer's mounting needs, make a corresponding plan to the mounting production line.



## Sign the Contract

Finalize the plan and sign the order agreement.



## Product Delivery

Door to door installation training service.

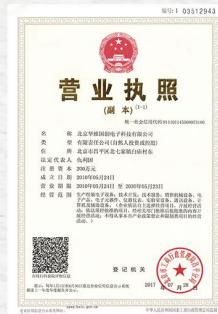
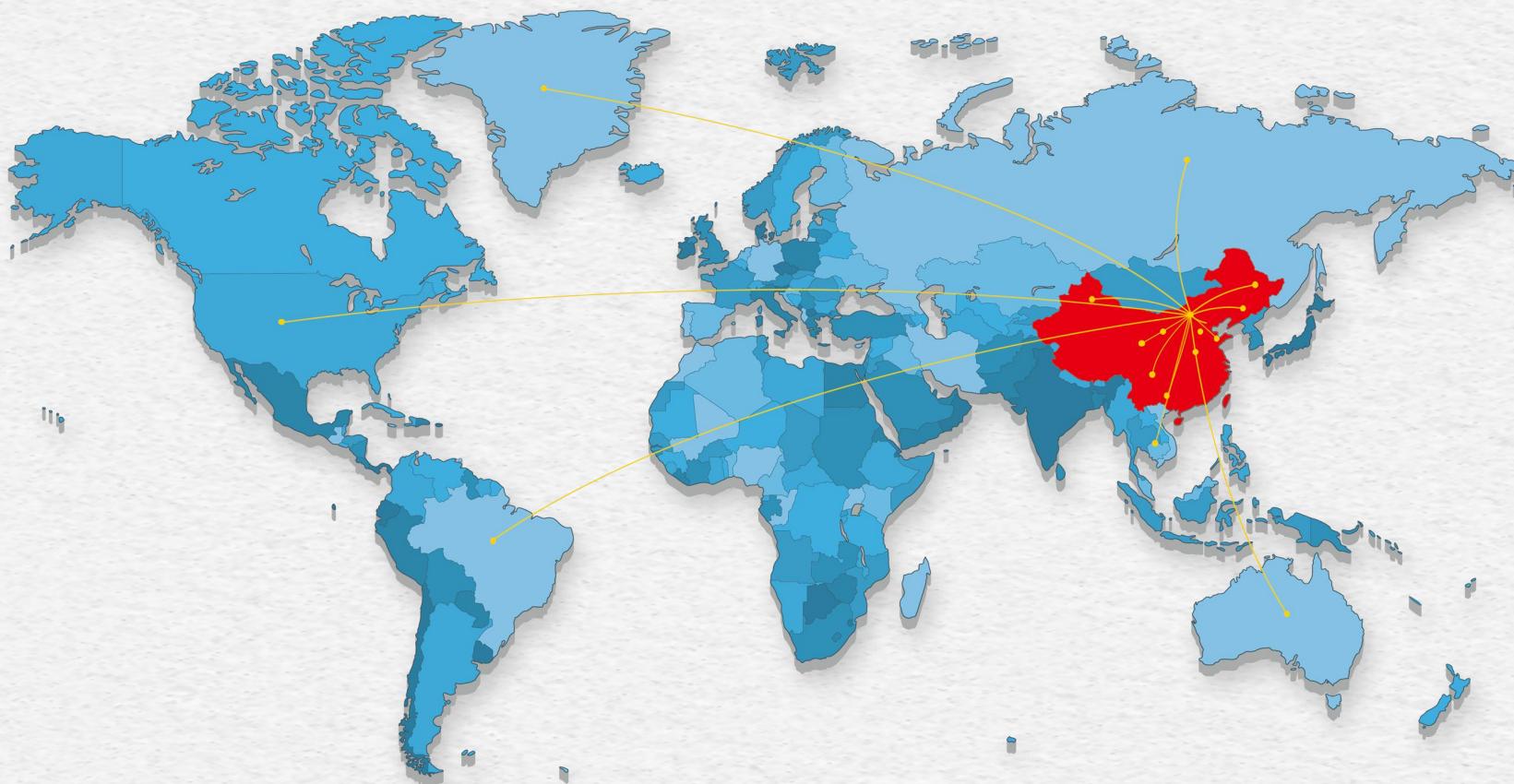
The R & D Department of the company is in Beijing with offices in Hangzhou and Shenzhen. In addition, we have a wide range of domestic users, and Based on the international market, we have a professional foreign trade sales team, our international market share is growing year by year.

Facing the market, we do not inflate parameters, and do not exaggerate the publicity; Facing the customers, we are practical and responsible for the products.

The pick and place machine produced by HuaweiGuochuang is high-end equipment used in electronic processing industry, and is mechatronics equipment which integrates motion system and software control system. Its main function is to mount the components on the circuit board. Product design is aimed at user groups who are in need of batch processing, and in order to achieve 24-hour non-stop work and continuous profitability of products, we consider the long-term non-stop work demand from the material selection, life, durability and other aspects.

HuaweiGuochuang is one of the few domestic manufacturers with R & D capability. We have been engaged in SMT equipment manufacturing for ten years.

Company R & D team: Software Engineer, architect, algorithm engineer, with more than 10 years of SMT R & D experience under master's degree.



# Thank you

for your attention to HuaweiGuochuang

HuaweiGuochuang takes scientific and technological innovation as its core competitiveness, aiming to realize the full intelligence of SMT production line and "zero" interval line change which means the maximum reduction of PCB switching time.

We have strict requirements on products, and will continue to follow up, develop and upgrade SMT equipment more suitable for industrial production, so as to meet different production needs and help each partner's long-term development.

Our contact information: +86-15931673319 Mr. liu

