Product Introduction

Model : HW-M8-102F

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Contents

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

Contact with SMT equipment

It is the first time for us to make contact with SMT peripherals and set about production and sale, and continue to push forward under continuous pratice.

The advent of the first generation of pick and place machine

The first generation of simple desktop machine which can be used for market sale was successfully developed and at the same time was launched to the market in 2010. And guided by customers' real needs, we continue to press ahead.

The advent of multi-function pick and place machine

Multi-function pick and place machine is not only mountable but can precisely mount the sophisticated integrated circuit chips, the first generation of which was developed in 2015 and marked a groundbreaking one at home, building an excellent reputation of domestic machine from then on.

The invention of smart pick and place machine

The invention of smart pick and place machine innovates the way of programming . Both of the speed of the programming and the efficiency of mounting have been greatly improved, making it more userfriendly and intelligent.

The invention of smart high-speed pick and place machine

The emergence of the second generation of smart high-speed pick and place machine has largely improved the efficiency of programming and of mounting . Besides , the ability to mount ultrahigh electronic components within 20mm makes pick and place machine more widely used.

2004 **2010** **2015** **2018** **2020**

An Overview of Current Models

Universality,high-precision,high-efficiency and high-smartness
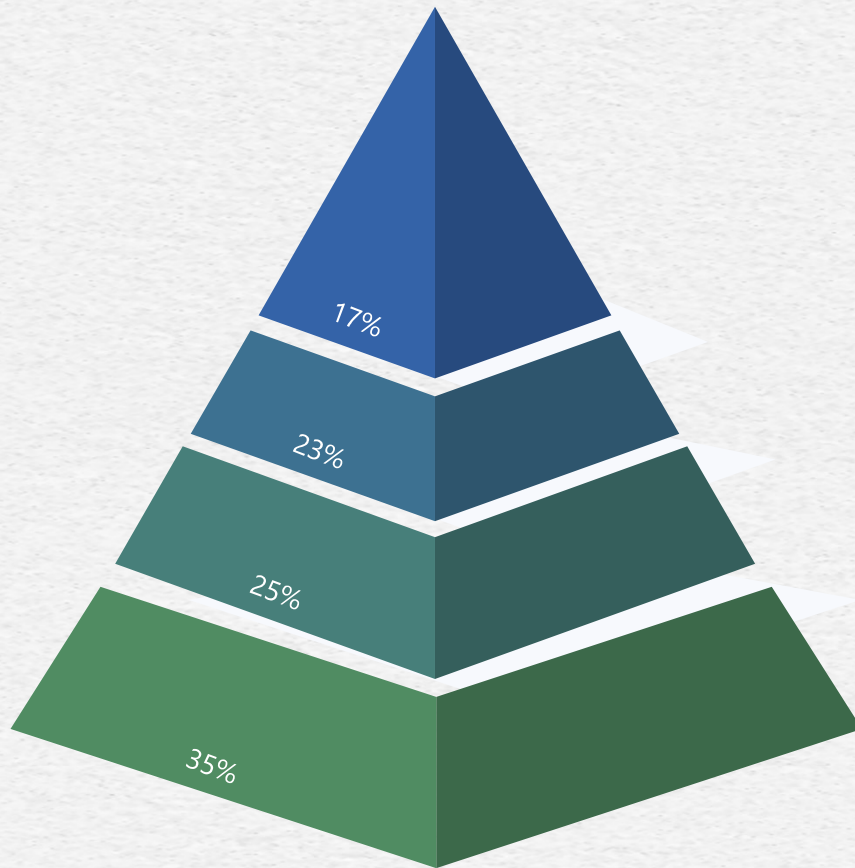
Pick and Place Machine with Four Heads

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.

17%

23%

25%

35%

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 himself. And it is very necessary for you to make full preparation before purchasing.

Then how can we choose a machine suitable for ourselves?

Basic elements
of pick and place machine

mounting accuracy

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.

mounting stability

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

mounting Intelligence

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.

mounting efficiency

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

DSQ800

Independent high-speed multi-function machine with eight heads which can hold102 feeders

The Real Shot from the
Front

External

Structure
of the Machine

Warning Light

Shield

Housing

Emergency stop knob
Power switch

Width Adjustable Tracks

Keyboard & Mouse

USB interfaces
Computer switch

Feeder Slots

Electric Control Box

Oil Water Filter

Heavy Load Anchor with Reinforced Piers

Dimension
of the Machine

华维国创 HWGC QIGN

1F

2F

1440mm

1360mm

1740mm

Internal

Structure

of the Machine

The Modular PNP divided into two working areas, which is controlled by only one computer and can mount components height up to 20mm
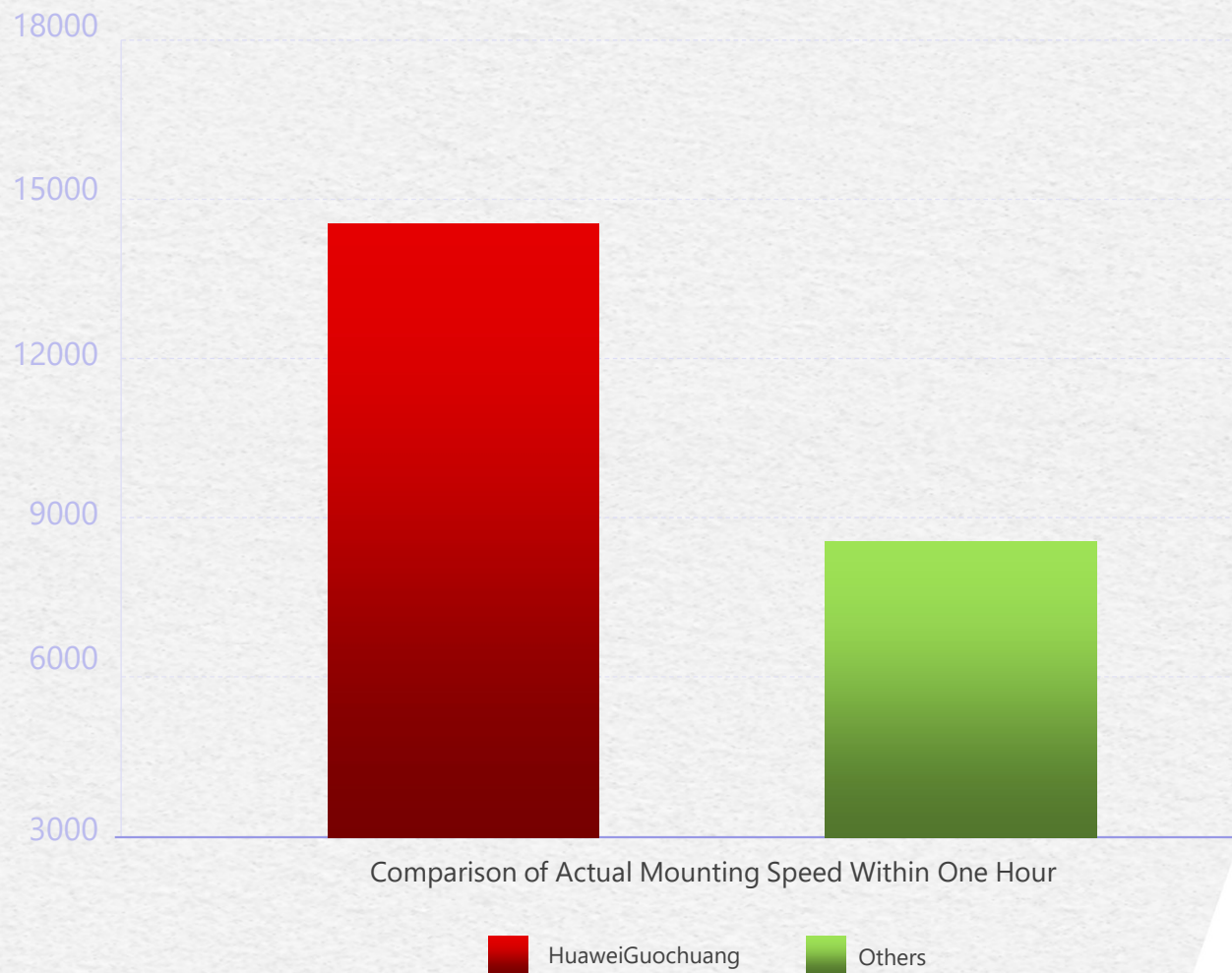
Internal

Structure

of the Machine
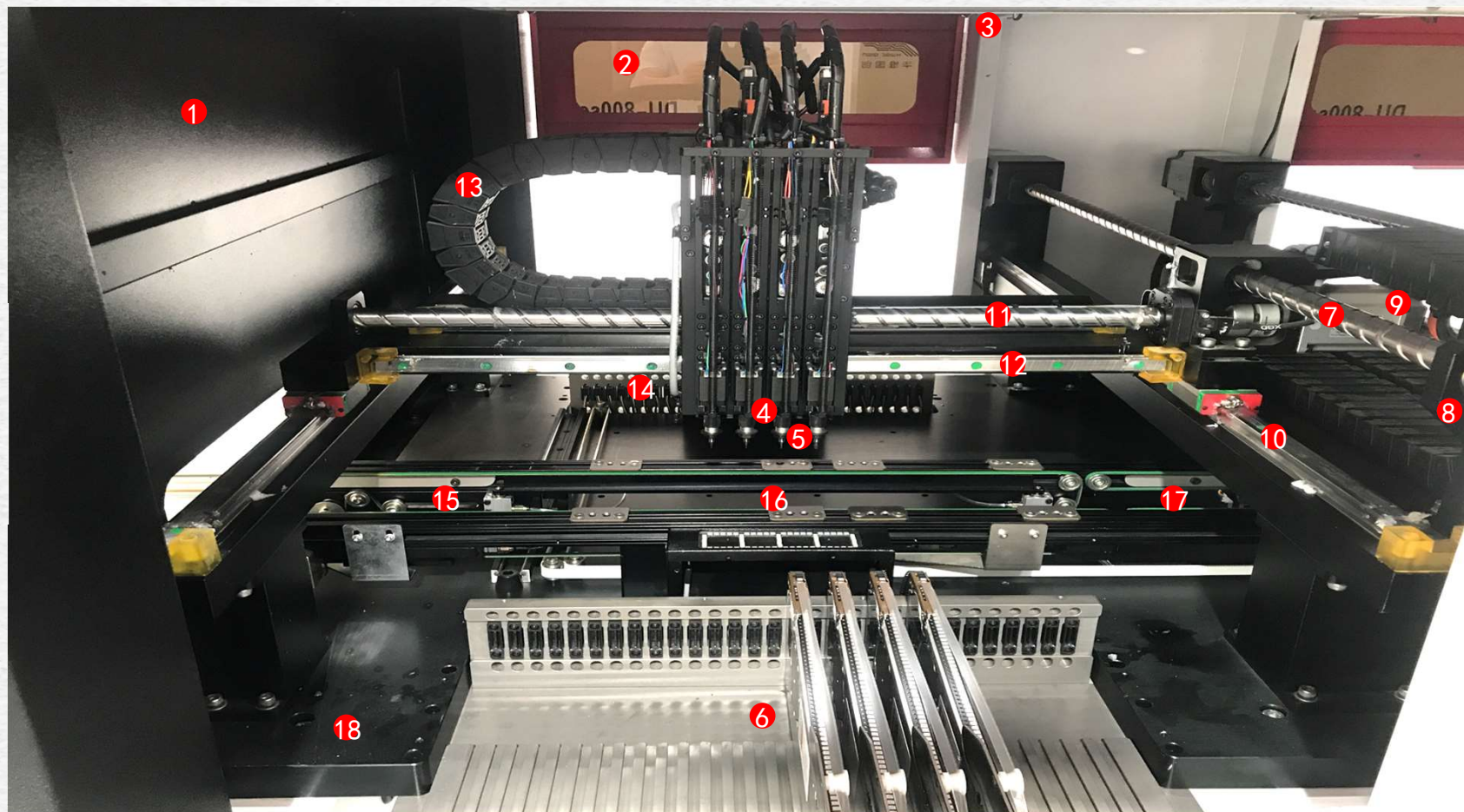
1.Housing   2.Shield   3.Pneumatic Support Bar   4.Placement Heads   5.1MP Fast HD Camera
6.Feeder Slots   7.Ground Ball Screw of Y Axis   8.Servo Motor of Y Axis   9.Servo Motor of X Axis
10.Linear Motion Guide of Y Axis   11.Ground ball screw of X axis   12.Linear Motion Guide of X Axis
13.Flexible Silent Cable Carrier   14.5MP HD Camera   15.Waiting Area   16.Mounting Area   17.
Exiting Area   18. Base

Mounting Project Optimization

System

Path Optimization Synchronous Picking

Shortest Path Majority Priority

Automatic Distribution of Nozzle Sequence

Global Optimization of PCB Path

Friendly Compatibility of Core Algorithms

Slow Down to Large Components
Lower Priority to Components Less Used

18000

15000

12000

9000

6000

3000

Comparison of Actual Mounting Speed Within One Hour

HuaweiGuochuang   Others

*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.

Working Platform

Placement Heads

Mounting Zone

PCB

Blue Zone

Red Zone

Picking Zone
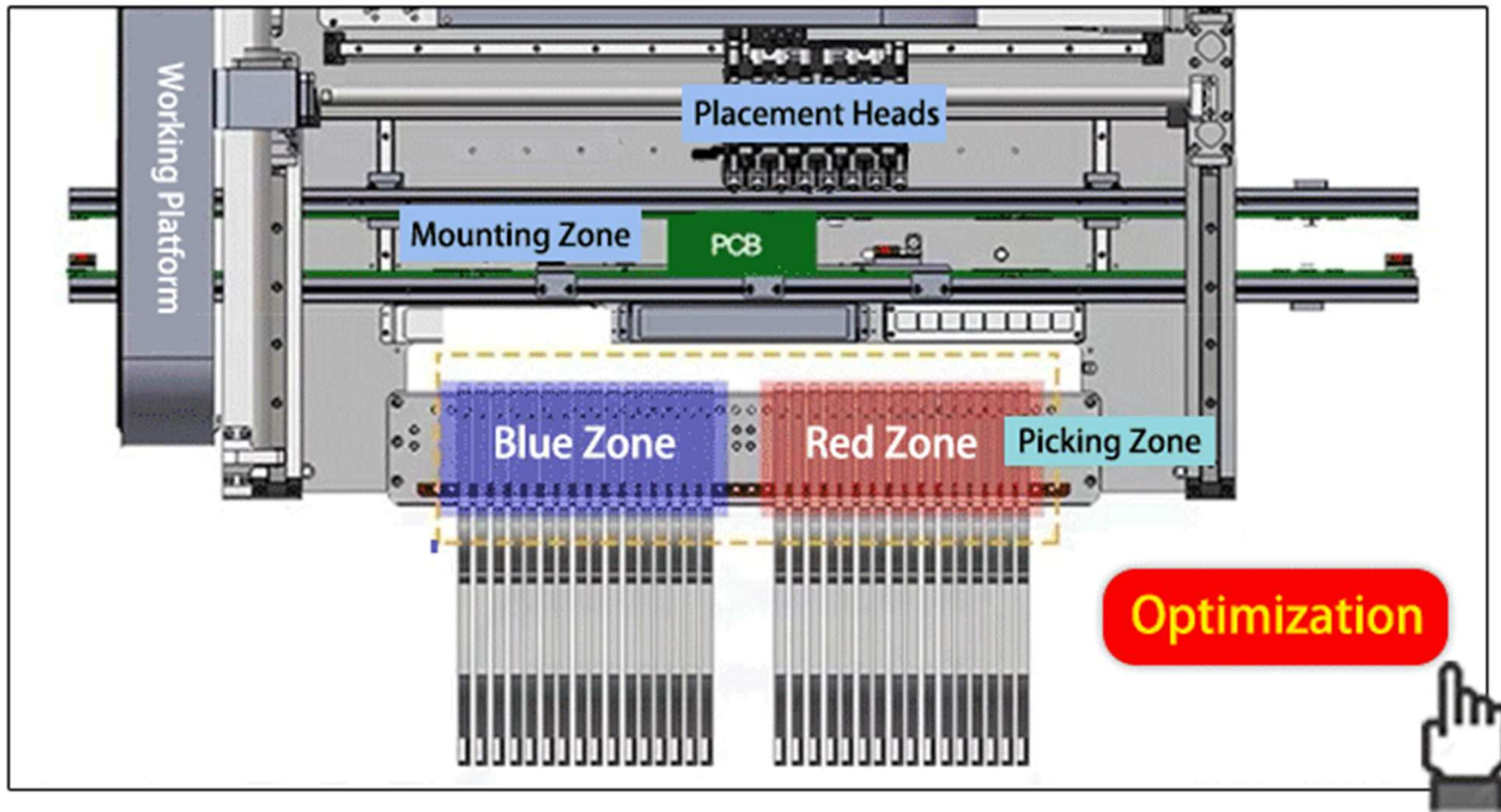
Optimization

Automatic optimization of feeders' installation positions tackles the problem of tedious mannual distribution perfectly
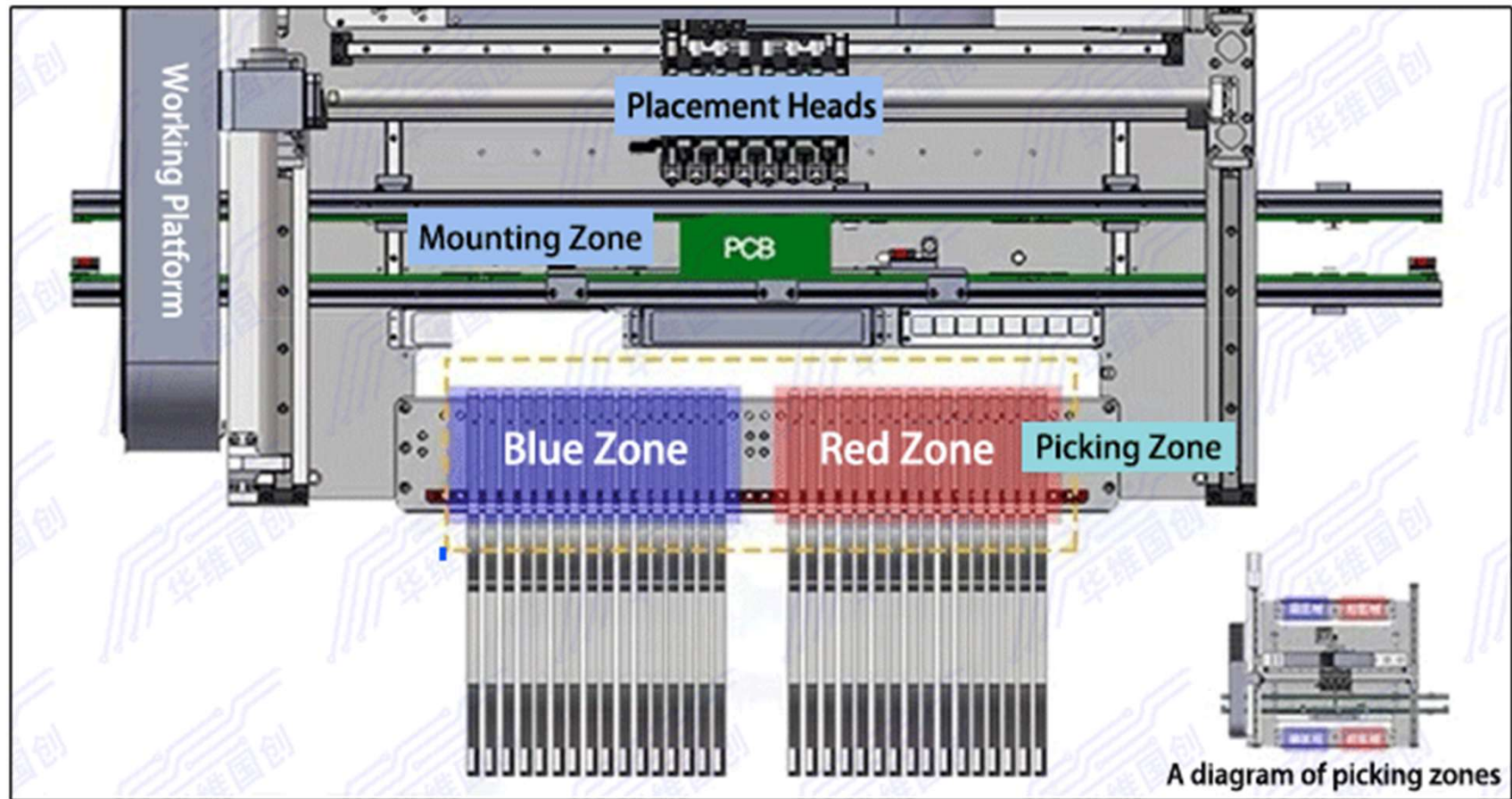
Select nozzle models intelligently according to BOM, and update the position number of corresponding nozzle in the program synchronously.
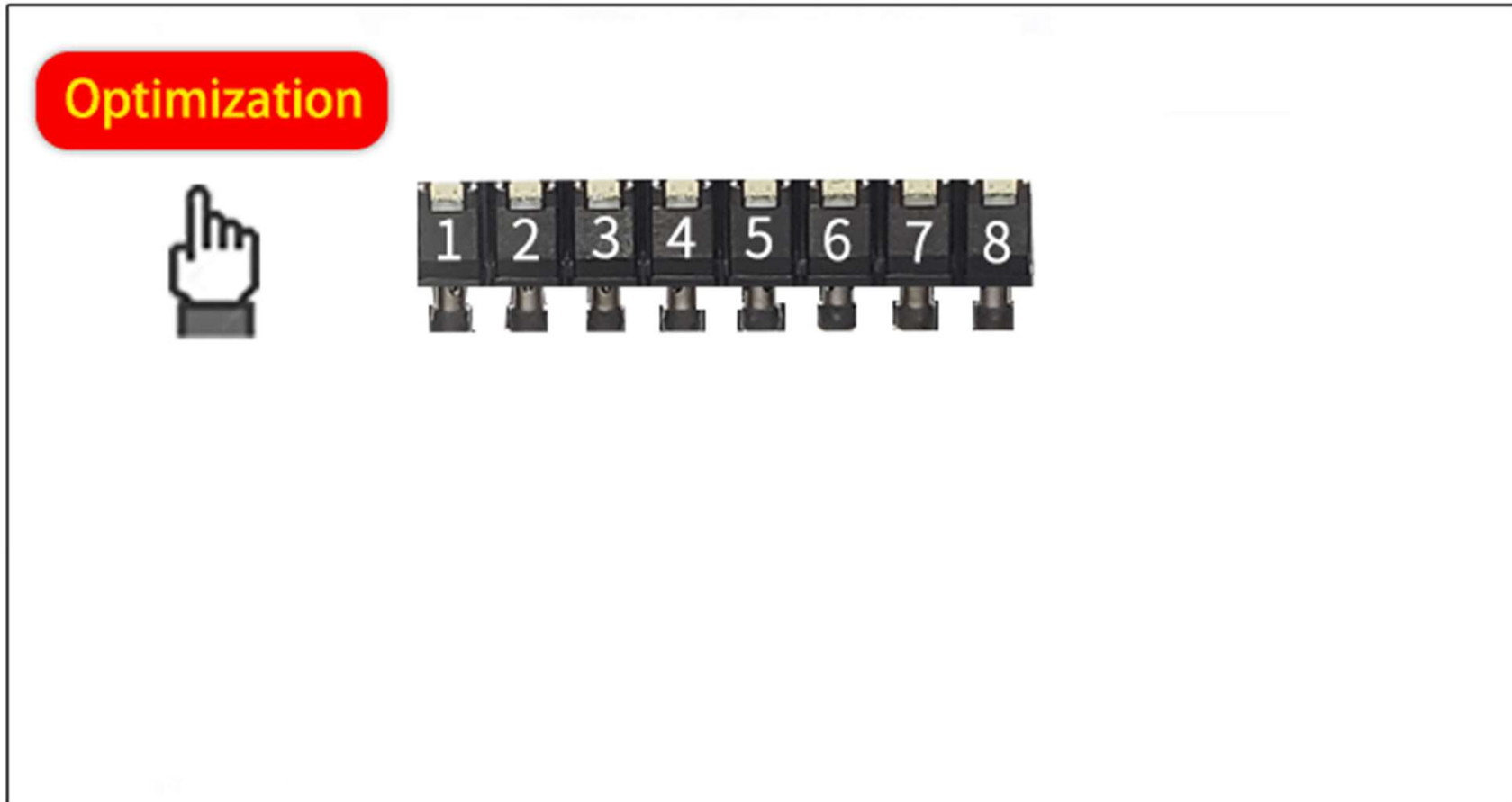
**A**utomatic optimization of nozzles' installation sequence

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

Working Platform

Placement Heads

Mounting Zone

PCB

Blue Zone

Red Zone

Picking Zone

A diagram of picking zones

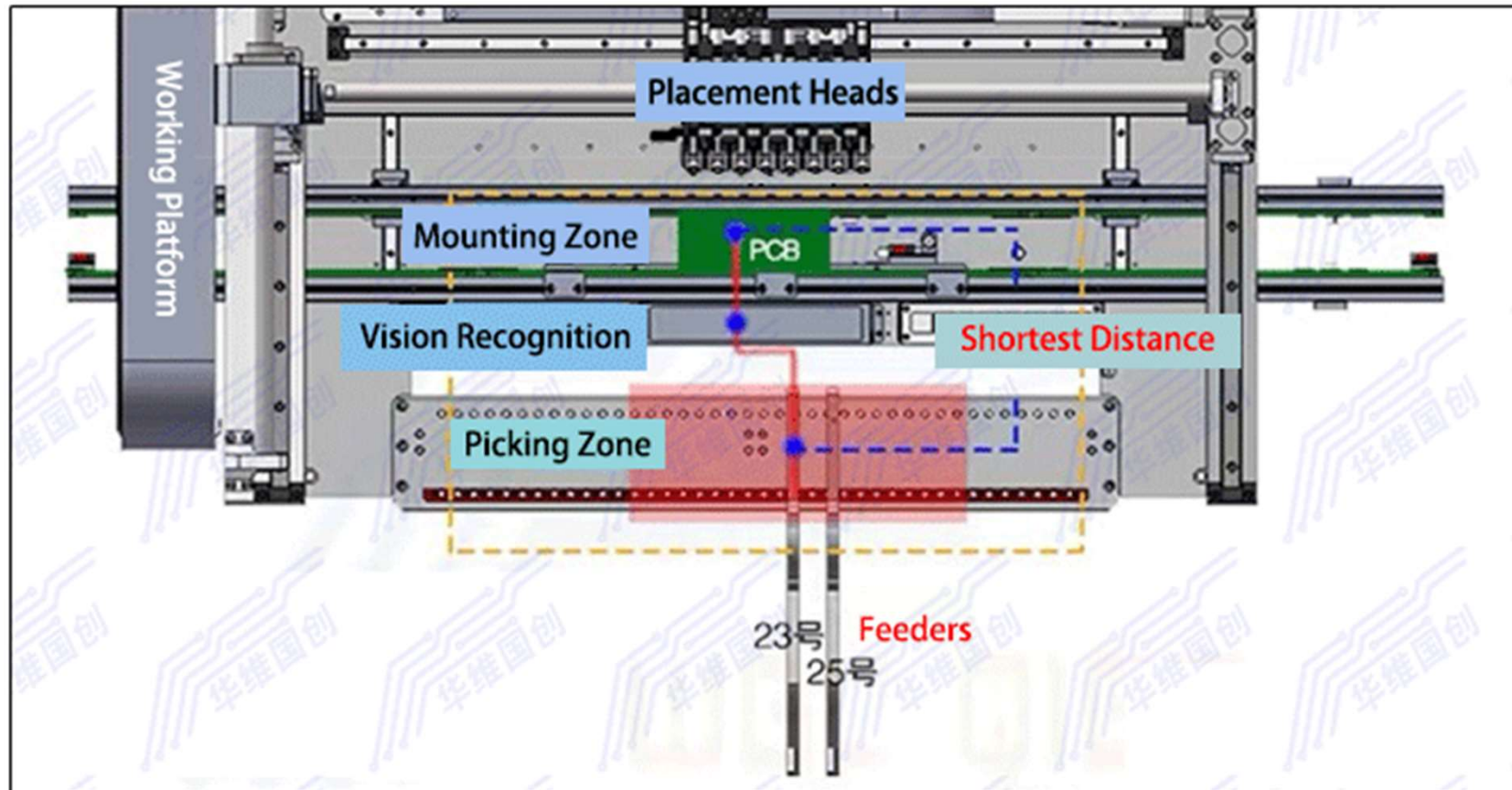**Concurrent picking with multiple heads,which maximize the efficiency of picking**

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

Placement Heads

Blue Zone   Red Zone   Picking Zone

A diagram of picking zones
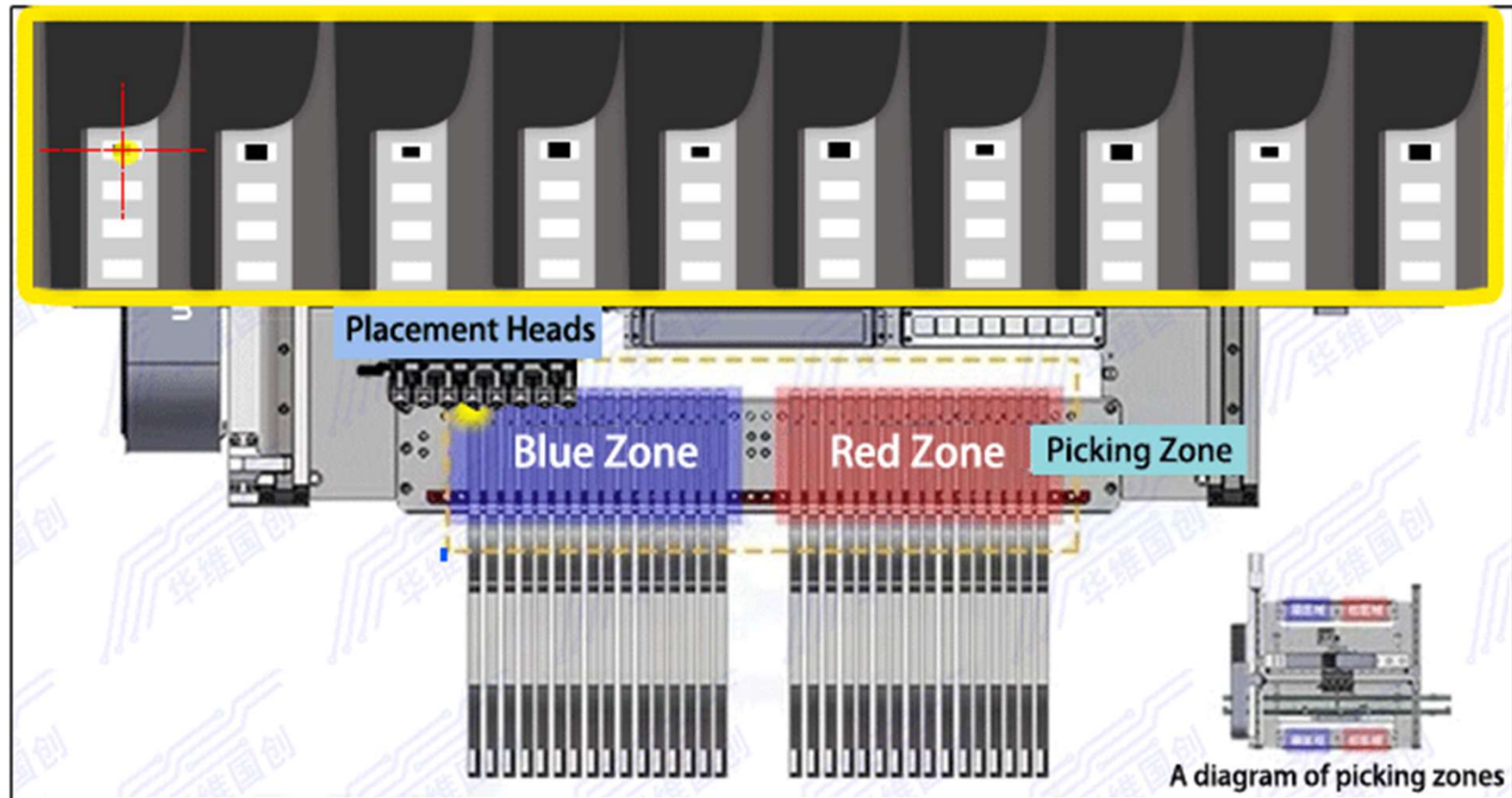
**Automatic calibration of feeder picking coordinates**

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.

Placement Heads

Mounting Zone

PCB

Vision Recognition

Shortest Distance

Picking Zone

23号
25号

Feeders

Working Platform

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.
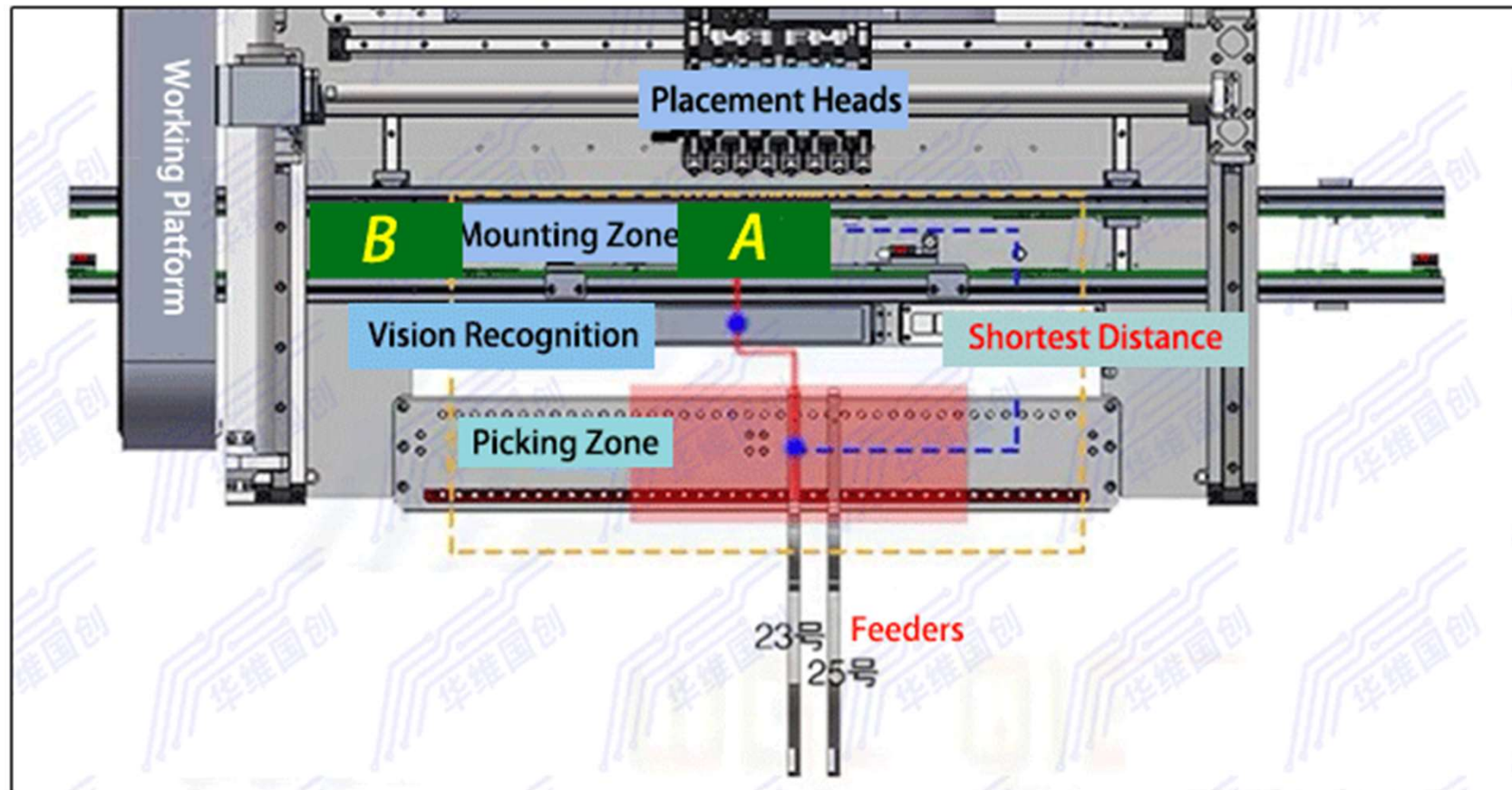
Three-stage entry

Details of Products

True precision, true high-efficiency and true smartness

Industrial Computer

17-inch display,keyboard amd 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 runnning ,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 induatrial 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-DSQ800-102F
Number of Placement Heads	8(high-accuracy)
Number of IC Trays	2
Number of Feeders	102(subject to 8mm feeder)
Positioning Accuracy	0.01mm
Repeated Mounting Accuracy	0.02mm
Range of Mounting Speed	25000-26000Pcs/h
Applicable Components	resistor,capacitor,chip,lamp bead etc.
Supported Maximum Area of PCB	340*360mm
Feeders	NXTelectric feeder,vibrating feeder, IC tray etc.
Recognition Devices	mark camera x1,fast recognition camera x12, high-precision camera x1
Maximum Height of Applicable Components	≤20mm
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 2021 control system
Maximum Step Length of XY Axis	423mm*734mm*2
Tracks of XY Axis	four linear motion guide + four 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	1500W
Machine Dimensions	1740*1360*1440mm
Weight	1100Kg

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

Automatic Creation

of Mounting Program After Manually Importing the File of Coordinates

華维国创 HWGC QIGN

| PCB Edit | ➠ | Optimize | ➠ | Feeder Plug | ➠ | Feeder Para | ➠ | Diagnosis | ➠ | SMT Run |

PCB Edit

Import PCB | Import Coord | Import BOM | 0/41 | [   ] | Search | PCB | Check | Angle | ✕

⌐	⌐	⌐	⌐	⌐	⌐	⌐	⌐	⌐	⌐	⌐	⌐
▶ 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)

Auto Get Sign | ☑ Pricise Mode

Sign 1	X 31.4757	Y 113.698
Sign 2	X 17.606	Y 2.8071
Sign 3	X 32.9	Y 43.5
Sign 4	X 1.7	Y 32.7

Sign in Machine XY (step)   ☐ 旋转180放置

X50000 Y50000 | Save | goto | Save | goto | X50411 Y70245

■ Sign 1   **PCB**   Sign 3 ■
■ Sign 4   Sign 2 ■

X41416 Y73360 | Save | goto | Save | goto | X46001 Y81981

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 | ☐ 开启备用吸嘴 | | 本地料站库 |
| 删除选定 | 从其他工程导入料站号 | 2/2 | 一键生成 | 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...	☐	0
▶	5	LQFP1...	1	料盘	自动	1	505	0	高清相机	标准视觉	精...	☑	0

Automatic Optimization for the Layout of Nozzles and Feeders

Feeder Installation Chat
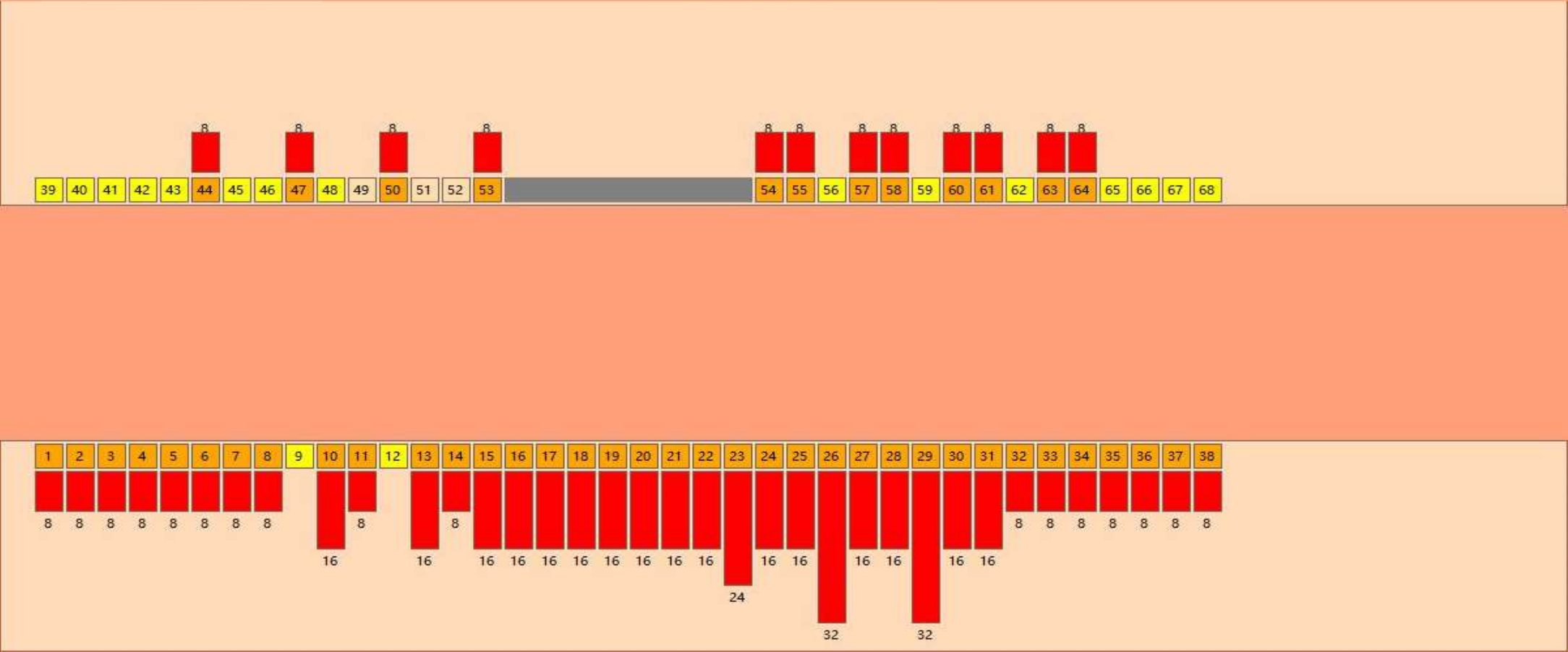
Applicable Components

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
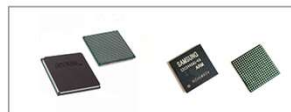
BGA   BGA

Pin header connector
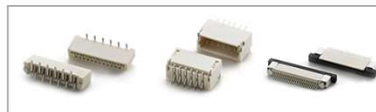
Pin header connector   Pin header connector

*0201 , 0402 , 0603 , 0805 , 1206 , diode , triode, SOT and QFP , BGA with lead pitch ≥ 0.3mm (subject to dimension of 40*40 mm and lead center distance 0.5mm) etc.
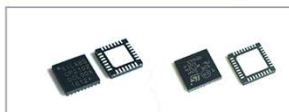
Honors

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.
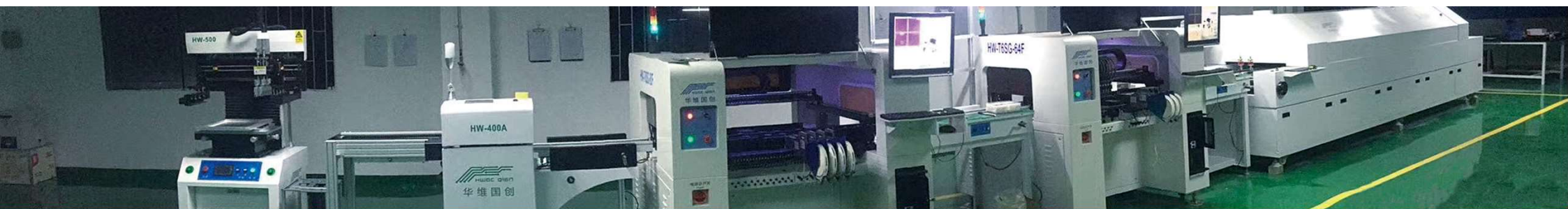
Installation Requirements

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℃～28℃
Humidity:	45%～70%RH

Customers in East of China

Customers in North 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 Huaweiguochuang 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

HW-550S
HW-100S
HW-T8-40F
HW-R612E

正面长度	0.4m	1m	1.5m	1.4m	1m	3m	1.5m
产品名称	锡膏搅拌机	半自动丝印机	上板机	八头机贴片机	接驳台	六温区回流焊	下板机
侧面宽度	0.4m	0.86m	0.8m	1.50m	0.65m	0.70m	0.8m

产品参数	工作电源 AC220V 50/60HZ	工作电源 AC220V 50/60HZ	工作电源 AC220V 50HZ	工作电源 AC220V 50HZ	工作电源 AC220V 50/60HZ	工作电源 AC380V 50/60HZ	工作电源 AC220V 50/60HZ
	额定功率 60W	额定功率 100W	额定功率 295W	额定功率 800W	额定功率 100W	工作功率 4KW	额定功率 295W
		供给气压 0.5-0.8Mpa	供给气压 0.5-0.8Mpa	供给气压 0.6-0.7Mpa		启动功率 13KW	供给气压 0.5-0.8Mpa
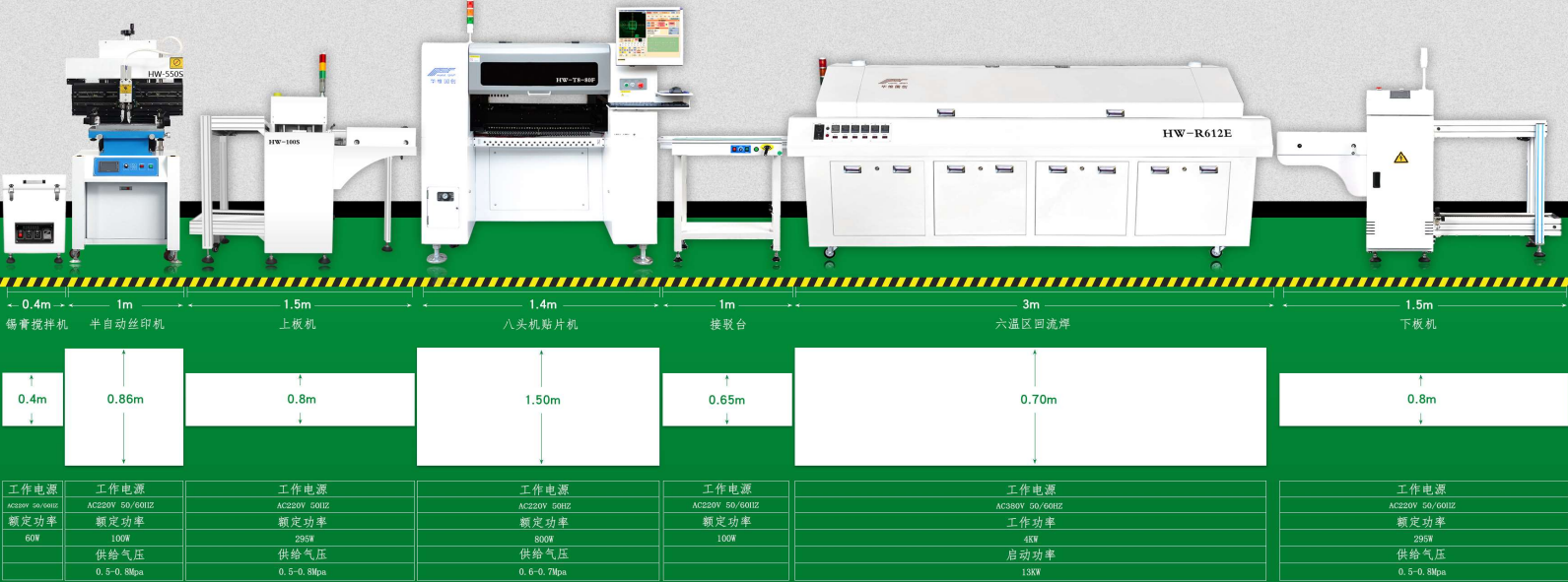
A production line plan which combines an eight-head machine and a reflow oven with six heating zones

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

正面长度	0.4m	1m	1.5m	1.4m	1m	1.3m	1m	4.6m
产品名称	锡膏搅拌机	半自动丝印机	上板机	八头机贴片机	接驳台	四头机贴片机	接驳台	八温区回流焊
侧面宽度	0.4m	0.86m	0.8m	1.50m	0.65m	1.40m	0.65m	1.0m

产品参数	工作电源 AC220V 50/60HZ	工作电源 AC220V 50/60HZ	工作电源 AC220V 60HZ	工作电源 AC220V 60HZ	工作电源 AC220V 50/60HZ	工作电源 AC220V 60HZ	工作电源 AC220V 50/60HZ	工作电源 AC380V 50/60HZ
	额定功率 60W	额定功率 100W	额定功率 295W	额定功率 800W	额定功率 100W	额定功率 600W	额定功率 100W	工作功率 5KW
		供给气压 0.5-0.8Mpa	供给气压 0.5-0.8Mpa	供给气压 0.6-0.7Mpa		供给气压 0.6-0.7Mpa		启动功率 32KW
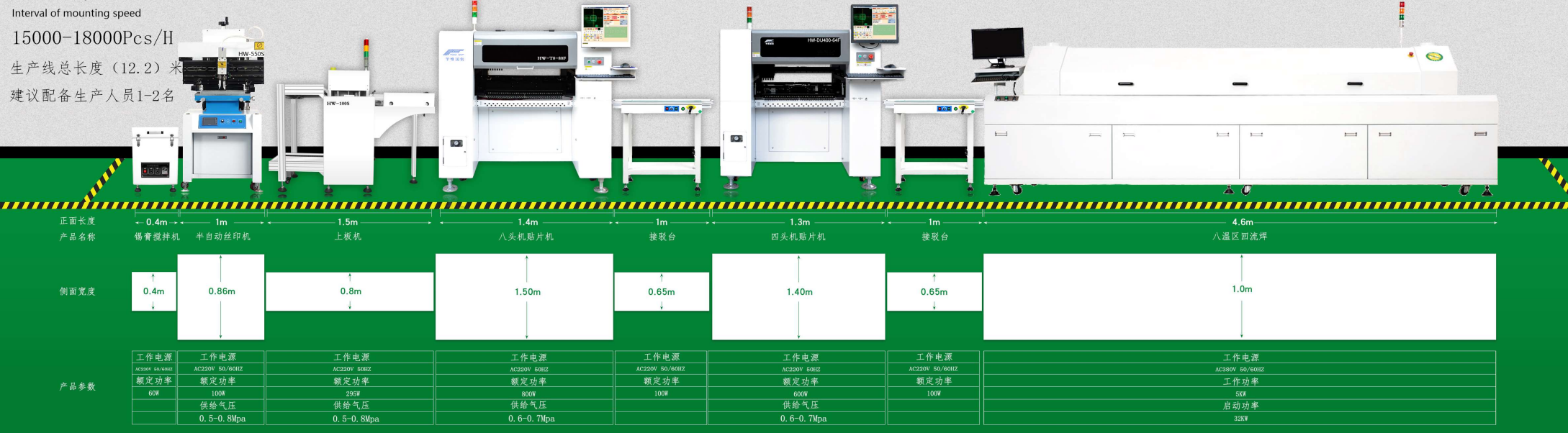
A production line plan which combines an eight-head machine, an independent four-head machine and a reflow oven with eight heating zones

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

正面长度	0.4m	1m	1.5m	1.4m	1m	1.3m	1m	4.6m
产品名称	锡膏搅拌机	半自动丝印机	上板机	八头机贴片机	接驳台	六头机贴片机	接驳台	八温区回流焊
侧面宽度	0.4m	0.86m	0.8m	1.50m	0.65m	1.40m	0.65m	1.0m

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
	AC220Y 50/60HZ	AC220Y 50/60HZ	AC220Y 50HZ	AC220Y 50HZ	AC220Y 50/60HZ	AC220Y 50HZ	AC220Y 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	工作功率	工作功率
	60W	100W	295W	800W	100W	600W	100W	5KW
		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		32KW

A production line plan which combines an eight-head machine, an six-head machine and a reflow oven with eight heating zones
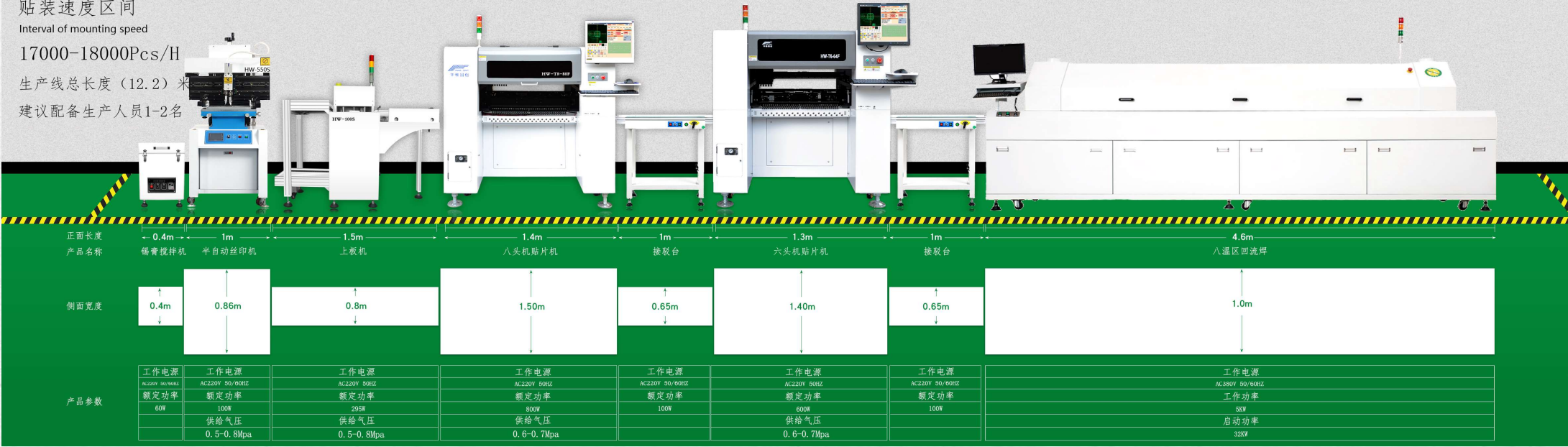
八头贴片机生产线方案
Scheme of 6-nozzles chip mounter production line

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	0.4m	1m	1.5m	1.4m	1m	1.4m	1m	4.6m
产品名称	锡膏搅拌机	半自动丝印机	上板机	八头机贴片机	接驳台	八头机贴片机	接驳台	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
产品参数	工作电源 AC220V 50/60HZ 额定功率 60W	工作电源 AC220V 50HZ 额定功率 100W 供给气压 0.5-0.8Mpa	工作电源 AC220V 50HZ 额定功率 295W 供给气压 0.5-0.8Mpa	工作电源 AC220V 50HZ 额定功率 800W 供给气压 0.6-0.7Mpa	工作电源 AC220V 50/60HZ 额定功率 100W	工作电源 AC220V 50HZ 额定功率 800W 供给气压 0.6-0.7Mpa	工作电源 AC220V 50/60HZ 额定功率 100W	工作电源 AC380V 50/60HZ 工作功率 5KW 启动功率 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 custo -mer'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 continues 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.

Sales manager: +86-13076782589

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