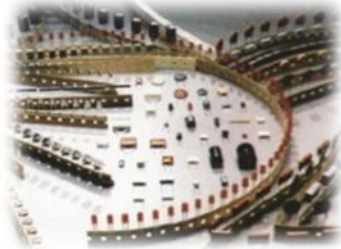
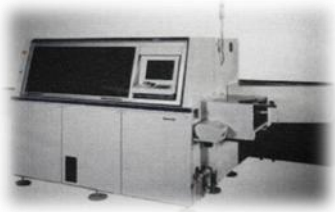


# Odd-form Component Mounter

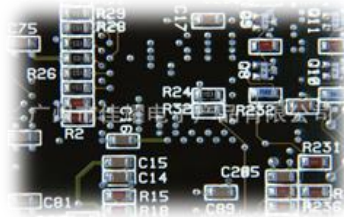


# The current PCBA's manufacturing mode

**Auto Insertion (AI)**



**Surface Mount Technology (SMT)**



**Manual Insertion (MI)**



**Automation / Mechanization**

**Manual Operation !!!**

## The problems of Manual Operation

- Labor costs are getting higher and higher;
- General labor force continued to decline;
- Lack of skilled workers, training costs have been rising;
- Quality is not stable and consistent;
- The problems of capacity and reliability;
- Take up a lot of production space ...etc.

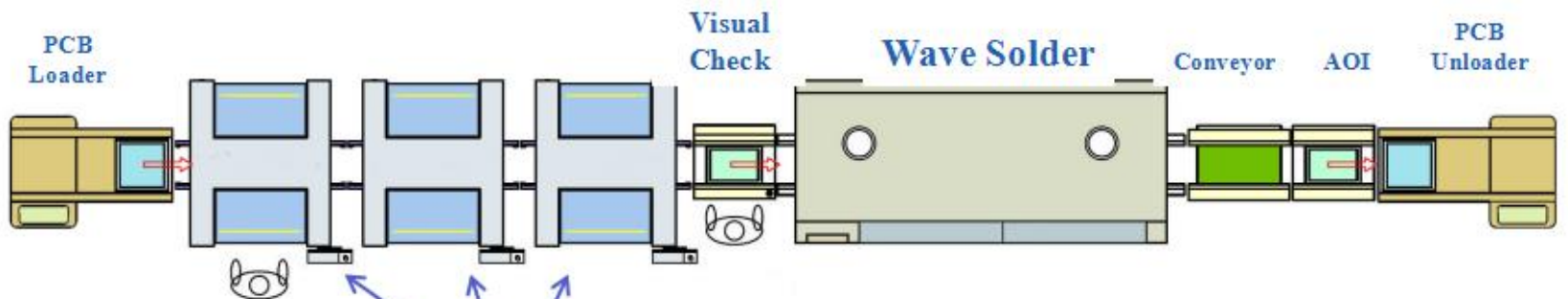
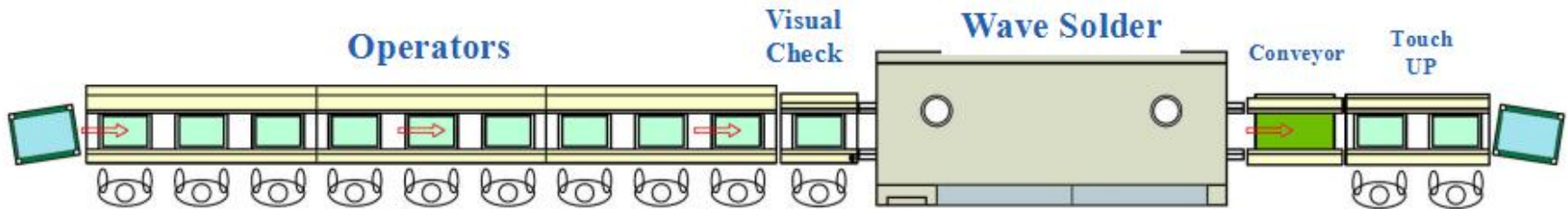


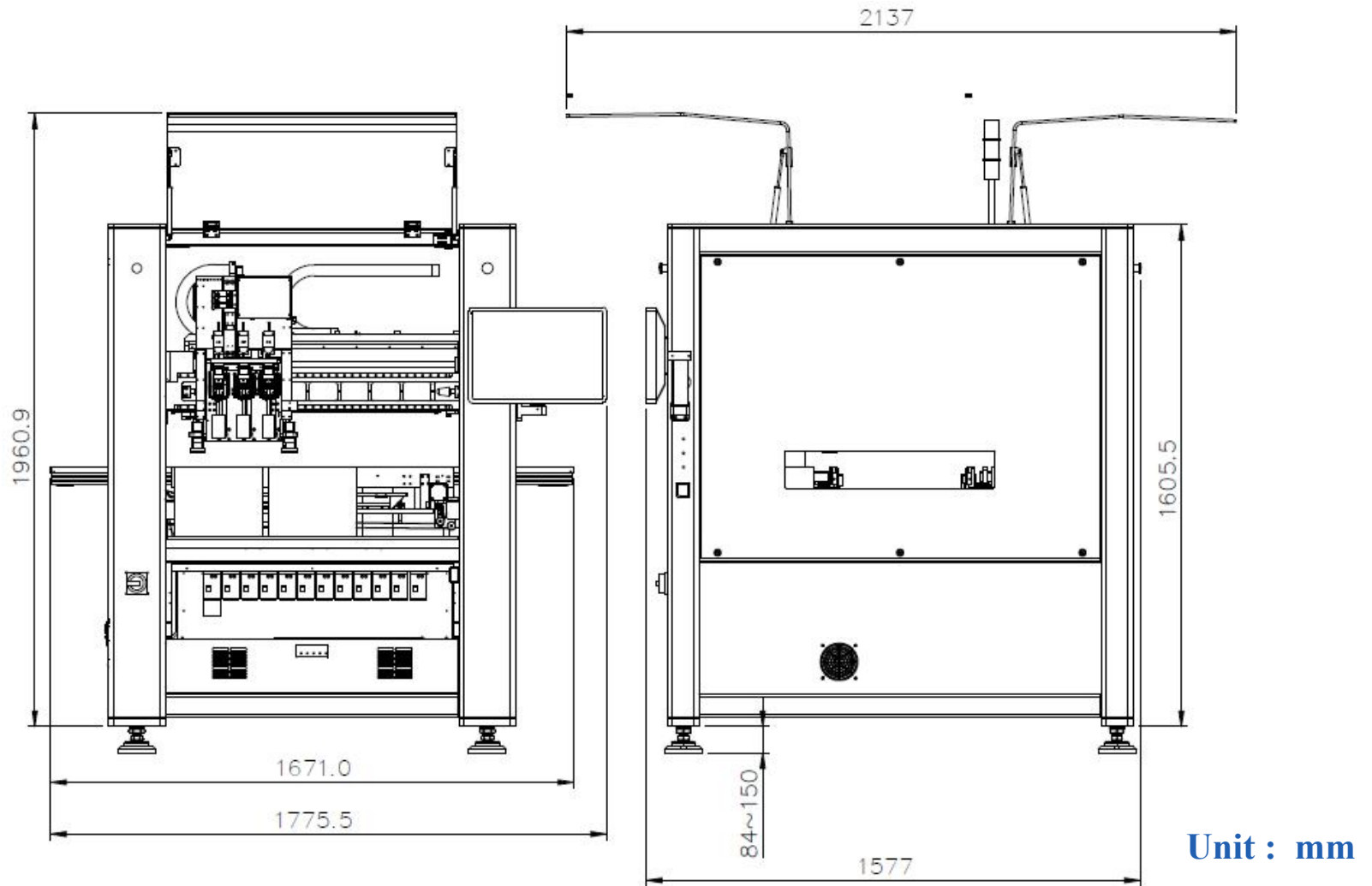
## The Manufacturing Solution

- ✓ High return of machines investment;
- ✓ Labour saving;
- ✓ Reduce the related labor costs;
- ✓ Keep workmanship consistent with quality;
- ✓ Improve the capacity and reliability;
- ✓ Space saving.

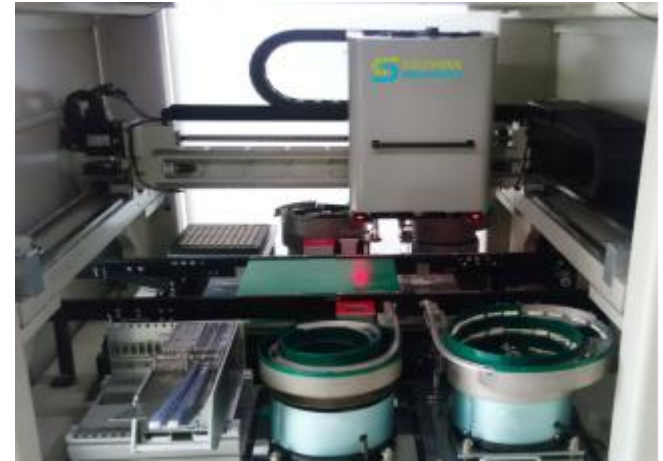


## The Machine Compare with Manual operation

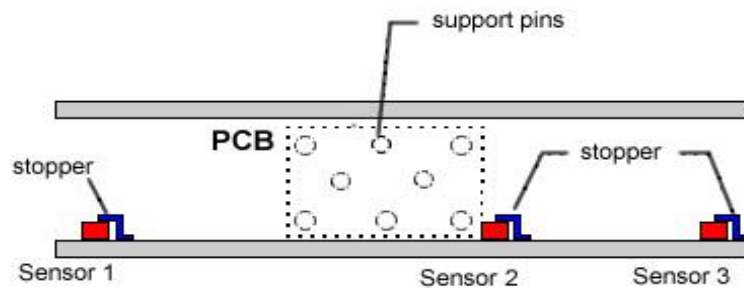
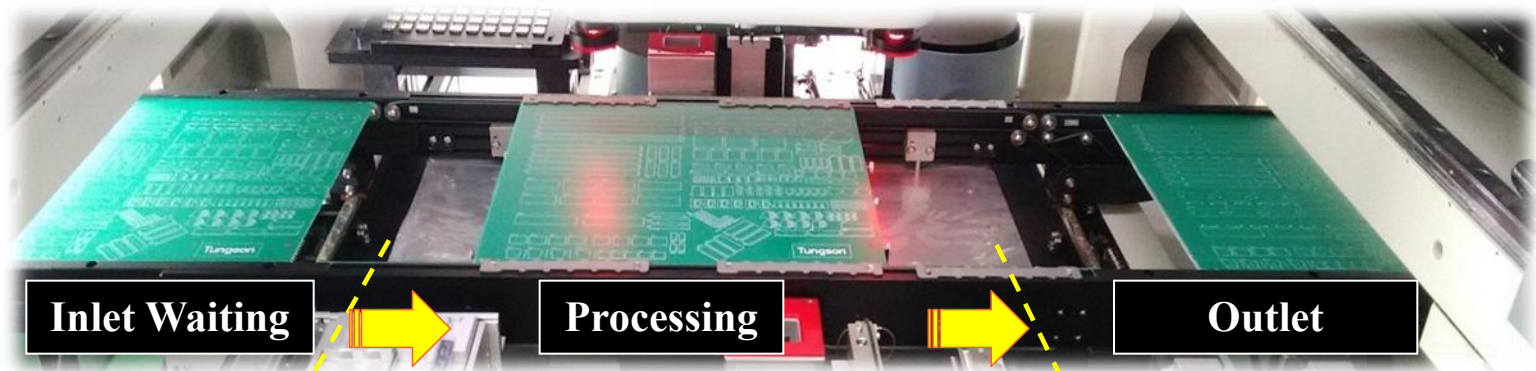




- Conveyor Height : 930mm  $\pm$  30 mm
- PCB Size: L50xW50~L490xW420 mm
- Max. Conveyor Loading: approx. 3.0kg
- SMEMA Port: x 2



### 3 Phases Conveyor Line



SMEMA port

**Tray Feeder**

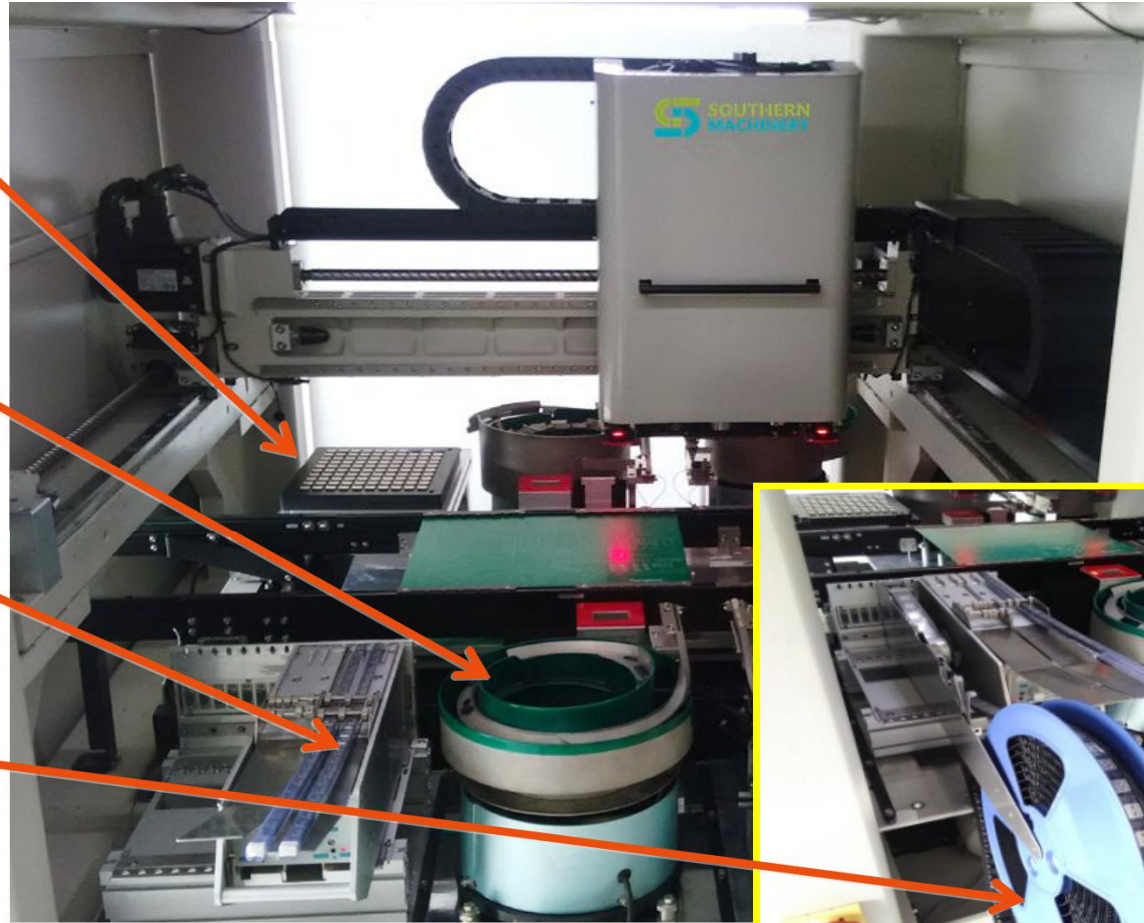
(Single Tray Unit)

**Bowl Feeder**

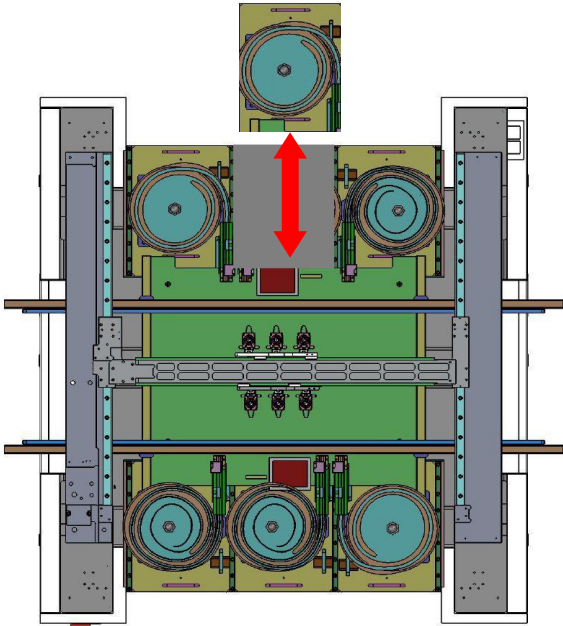
(for bulk pack material)

**Stick Feeder**

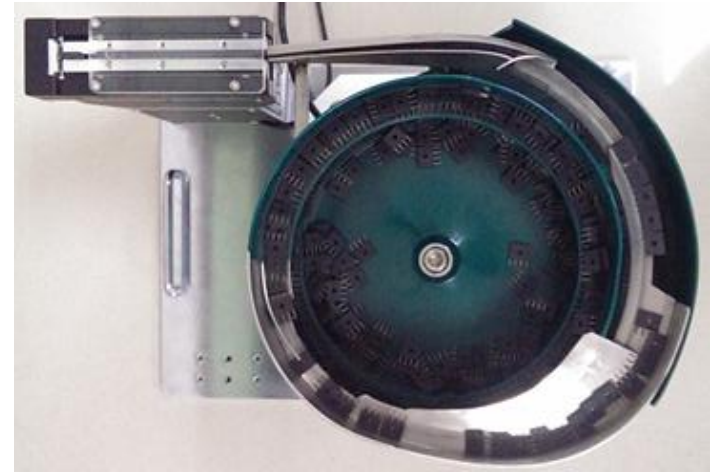
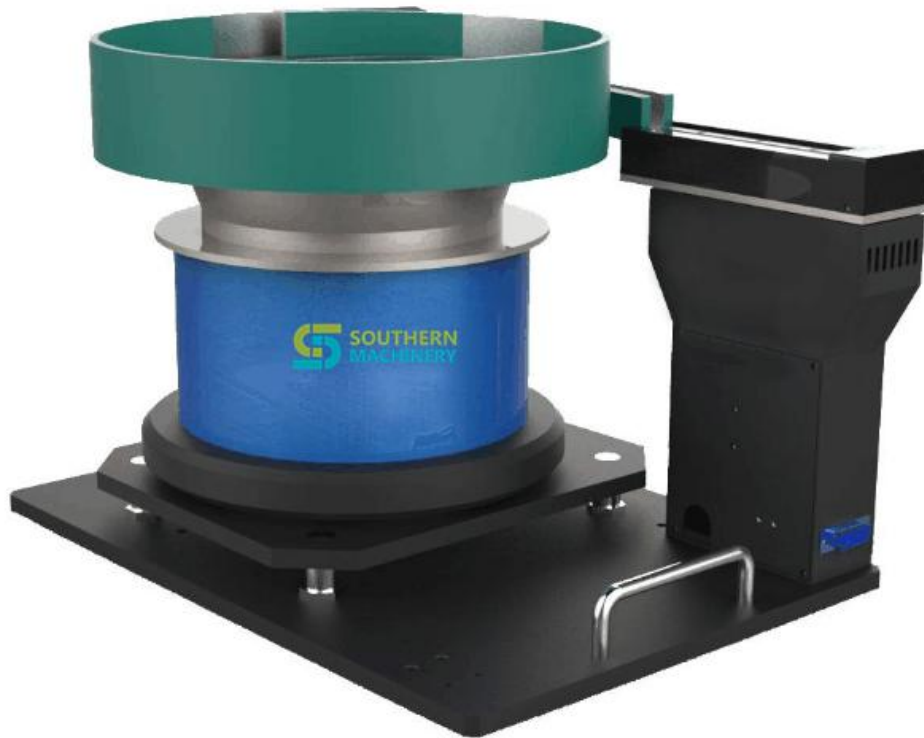
**Tape Feeder**



- 6 Feeder Stations, from 6 to 48 feeders.
- Feeder types :
  - Bowl Feeder (for bulk pack material);
  - Stick Feeder;
  - Tape Feeder;
  - Tray Feeder ( Single/Auto Tray).
- Plug and use design, no need to connect any wires.



## Bowl Feeder System



Applicable to all types of bulk materials:  
such as capacitance, inductance, connector.

# Tray Feeder System - Single



Applicable with all kinds of size 200 \* 220 blister tray materials: such as USB, HDMI socket, transformer etc.

## Stick Feeder System



Suitable for all kinds of standard tubes of IC, optical coupling, amplifier etc.

## Tape Feeder System

Elect. Tape Feeder :  
12mm Up

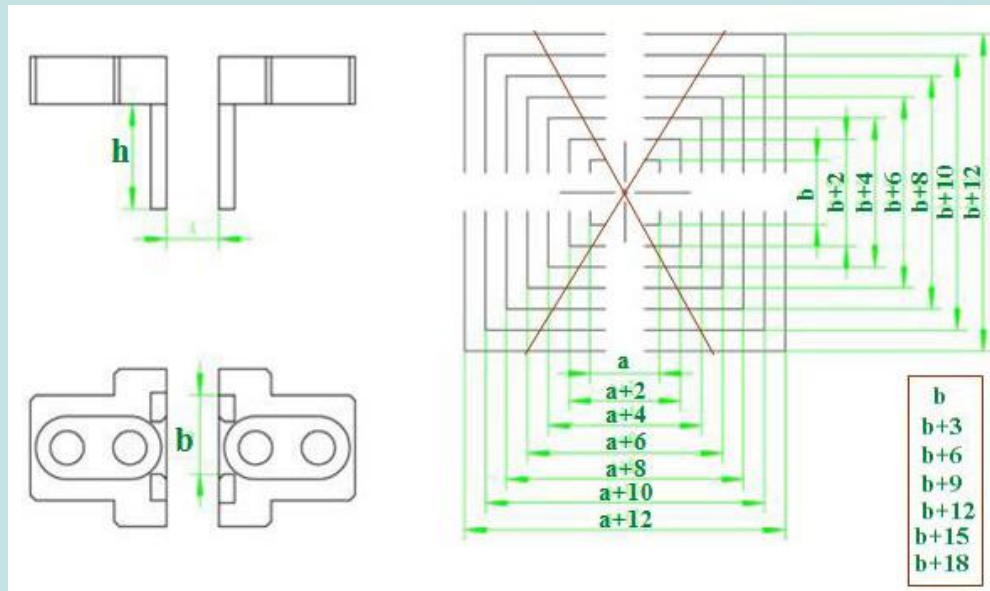
Applicable to the standard tape material  
packing THT components, : such as  
USB, IC, etc.



## Vacuum Nozzle Unit



## Air Gripper Unit

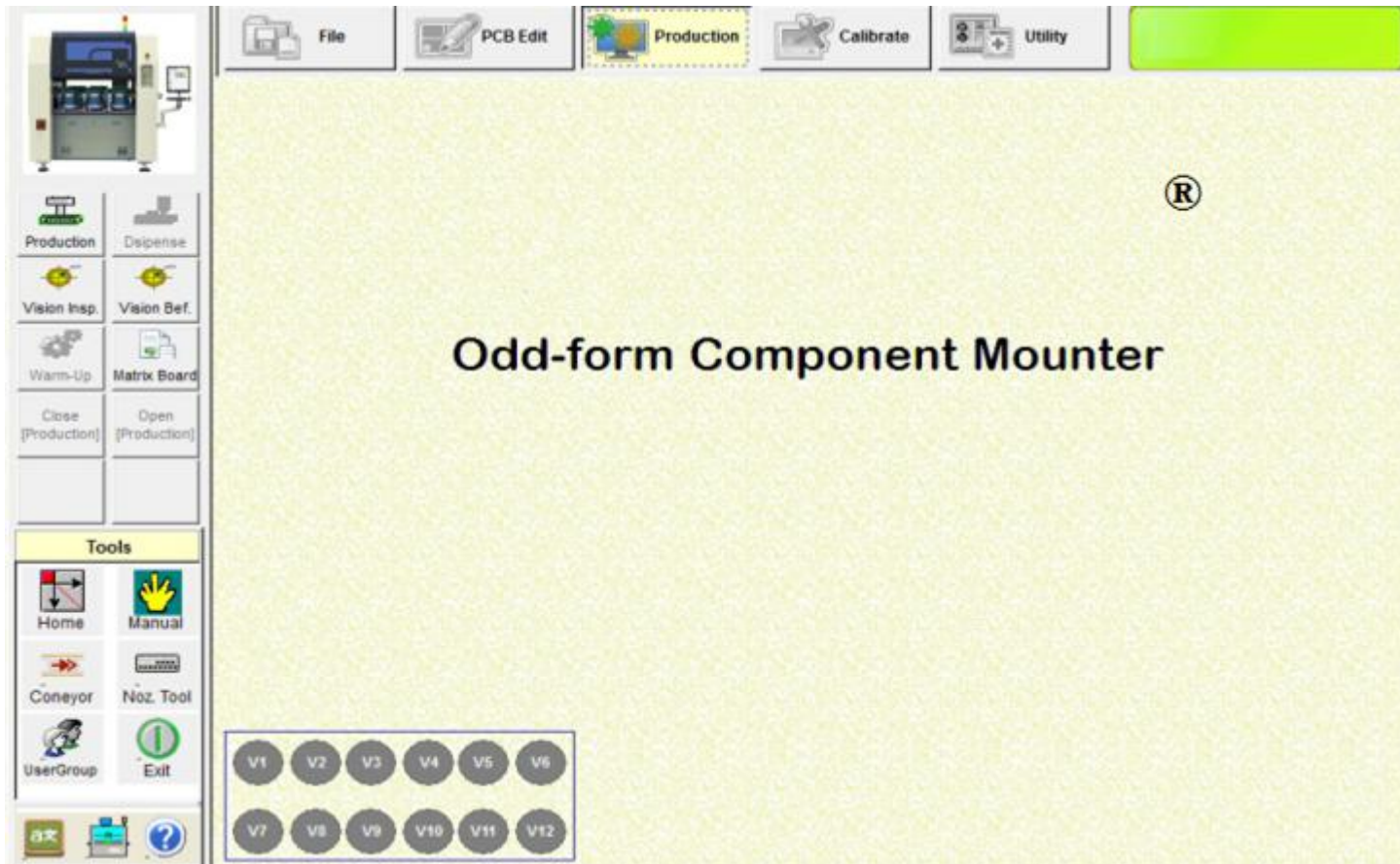


# Accurate recognition by high resolution CCD camera system.

- Polarity recognition;
- Fiducial Mark;
- Lead fail detection....



**Builds in a window base operating system, with English and Chinese language selectable.**





**Statistic**

Production Start Time: 01/31/2015 10:21:49

Total Time: 04:24:06

Production Time: 02:53:12

Pause Time: 00:01:01

Error Stop Time: 00:00:22

Idle Time: 01:29:31

Current Place Count: 14

Production Cycle: 172

Total component: 5471

Successful: 5405 [98.79%]

Search failed: 20 [0.37%]

Pick failed: 46 [0.84%]

**Feeder**

Feeder	Component	Enabled	Picked	Placed	Failed
D06	567	Yes	15	15	0

**Head**

Head	Index	Feeder	Library	Location	Component	Nozzle	Failed	Search Score
1#	*	*	*	*	*	1# White	0	
2#	*	*	*	*	*	1# White	0	
3#	*	*	*	*	*	1# White	0	
4#	*	*	*	*	*	4# White	0	
5#	*	*	*	*	*	5# White	0	
6#	*	*	*	*	*	Claw-JA06	0	

Status: Running

15/30 2015年3月26日 星期四

## Real Time Production Monitoring

Learn PCB

**Reference Points**

Use Fiducial  
 Use Board Offset Pts.  
 ALL Board Offset Pts.

1-Ref.Pt.  
 2-Ref.Pts.

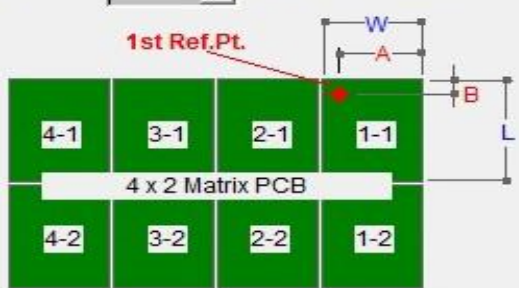
**Learn Ref.Pts. before Production**  
 Enable  Disable

**Learn Bad Mark before Production**  
 Enable  Disable

**PCB size**

W: 350.0 mm L: 131.3 mm  
A: 11.76 mm B: 125.8 mm  
X: 82.9600 mm Y: 291.0500 mm  
UPPER-RIGHT of Board 1-1 X: 71.9400 mm Y: 416.3800 mm  
Rail Width: 300.0 mm  
Conveyor Gap: 0.50 mm  
Current Width: 300.0 mm

**4 x 2 Matrix PCB**



**PCB Matrix**

No. of boards in X direction: 1  
No. of boards in Y direction: 1

**PCB Height(Conveyor)** OFF

Auto Detect Load Default

PCB Height (from bottom): 16.00 mm  
PCB Height Offset: 0.00 mm  
PCB Height (from home sensor): 83.99 mm

Set Default PCB Height

Horizontal Line  
Angle: -0.0260 deg

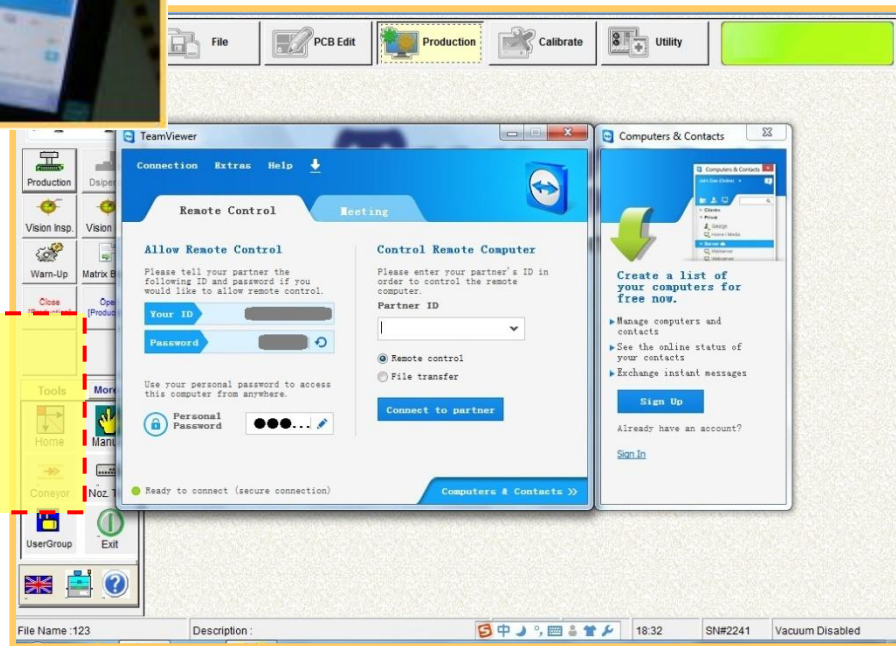
CANCEL  
OK

**Intelligent Programming,  
support off-line operation.**

**Control and Monitoring  
by mobile phone Apps.**



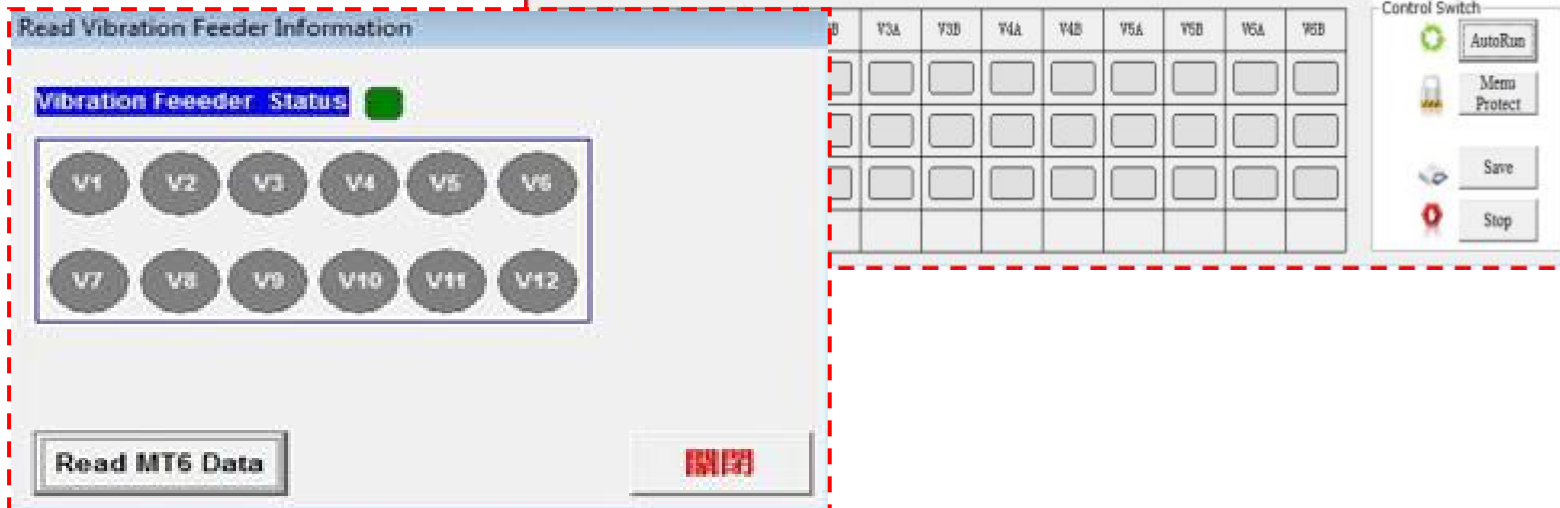
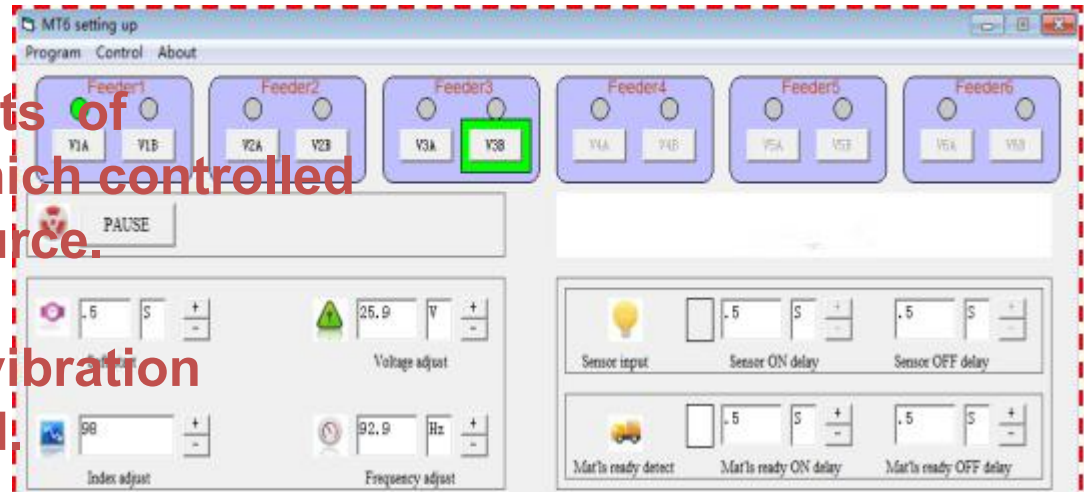
**Support  
Remote Control**



# Patent Bowl Feeder Control System

1. Patent **MT-6D** unit consists of hardware and software which controlled maximum 12 vibration source.

1. DC power supply for all vibration units to fit for CE standard.



## Plug, Socket & Connector

### A. Holder Connector



### B. Plug & Socket



### C. Pin Connector



# Radial types

## D. Capacitors



## E. LED



## F. Transistors

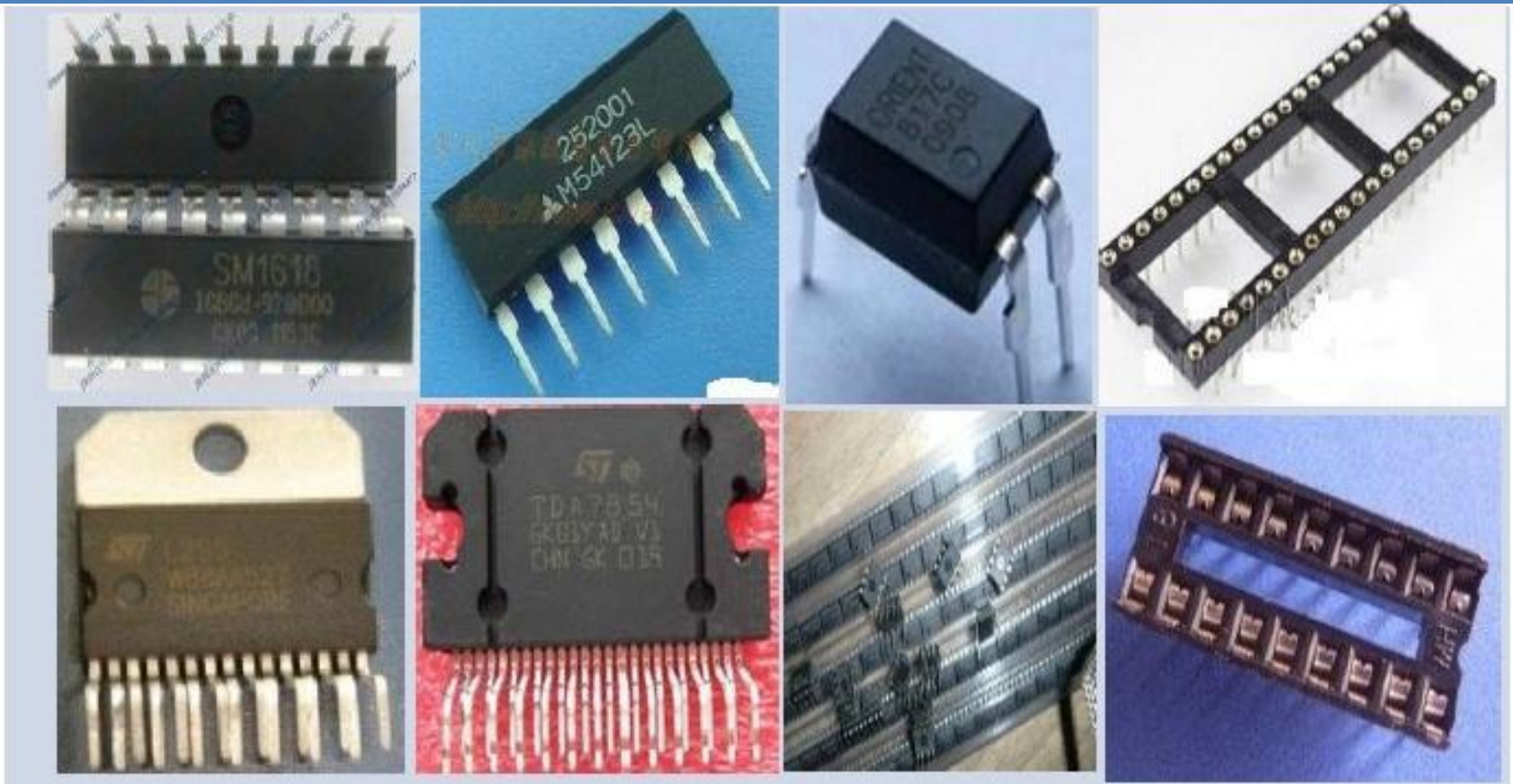


## G. Switches & Buzzers



# IC types

## H. IC & IC Socket



# Transformer & Coils

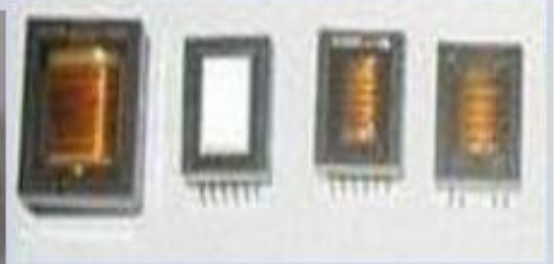
## I. Coils



## J. Inductors

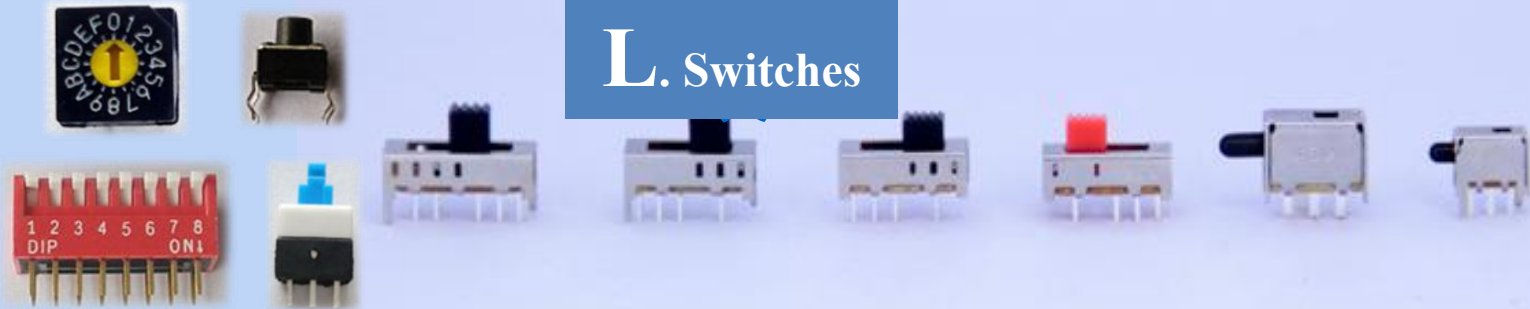


## K. Transformer



# Special types

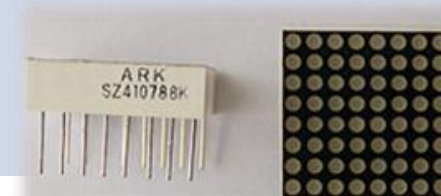
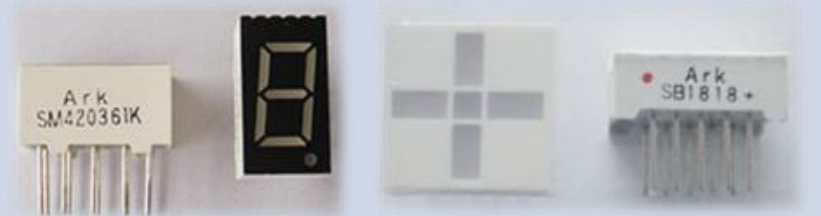
## L. Switches



## M. Terminals



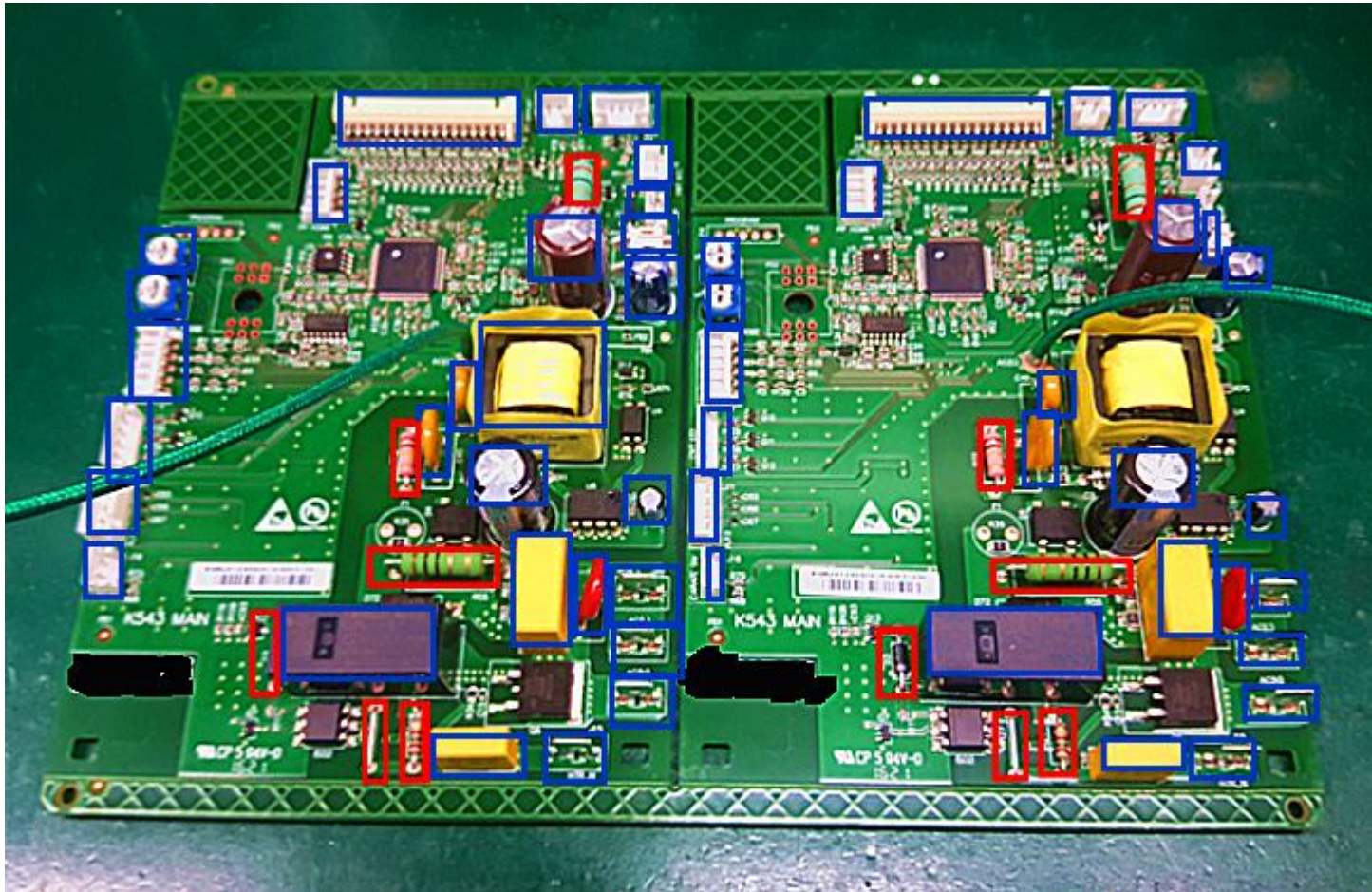
## Special socket









## N. Complex LED

Items	Parameter
Insertion Heads	6 heads (3+3 layout)
Head Types	Vacuum Nozzle or Air Gripper
Head Mounting	Standard fast joint system, interchangeable.
Tact Speed	2400cph ( conditional )
Insertion Orientation	0 ~ 360°, ±0.1° adjustable
Max. PCB Size	L60 x W60 ~ L490 x W420 mm
Max. PCB Loading	3kg
Conveyor Height / Direction	930 ± 30 mm
Conveyor	3 Phases ESD belt
Vibration Power supply	DC power supply for all Vibration Feeders with programmable control
Max. Component Size	L5 x W5 x H6 ~ L40 x W40 x H45 mm (H : included the lead)
Power Supply	Single phase, AC 200~220V, 50/60Hz ( 2KW )
Machine Dimension	W1670 x D1620 x H1690 mm (without signal tower)
Machine Weight	Approx. 1300kg (not included feeders)
Vision System	Standard Vision System with 4 x CCD Cameras ( Upper x 2 + Bottom x 2 )
Control Software	OCM Version (support off-line program by input CAD/TXT data)
Operation System	Licensed MS Windows (Chi / Eng)




1. Axial Auto Insertion Machine
2. Odd Form Insertion Machine









No.	Part Number	Description		Packaging	Picture	Solutions
1	ECMP000003	CAP ALUM 68UF 20% 250V RADIAL	C9	tape		<b>Odd From Insertion Machine</b>
2	ECMP000009	CAP CER 3300PF 1KV 10% RADIAL	C45	tape		<b>Odd From Insertion Machine</b>
3	ECMP000010	CAP CER 2200PF 440VAC 20% RADIAL	C46	tape		<b>Odd From Insertion Machine</b>
4	ECMP000155	CAP ALUM 330UF 20% 25V RADIAL	C47	Bulk		<b>Odd From Insertion Machine</b>
5	ECMP000156	CAP ALUM 2200UF 20% 25V RADIAL	C48	Bulk		<b>Odd From Insertion Machine</b>
6	ECMP000169	CAP ALUM 10UF 20% 25V RA DIAL	C50	Tape		<b>Odd From Insertion Machine</b>

No.	Part Number	Description		Packaging	Picture	Solutions
7	ECMP000015	Noise Supression Cap 0.22uF 275Vac 10% P=15.0mm	C63	Bulk		<b>Odd From Insertion Machine</b>
8	ECMP000017	Noise Supression Cap 0.01uF 275Vac 10% P=10.0mm	C98	Bulk		<b>Odd From Insertion Machine</b>
9	ECMP000018	DIODE GEN PURP 400V 1A DO204AL	D1 D2 D3	Amo		<b>Axial Auto Insertion Machine</b>
10	ECMP000020	DIODE SCHOTTKY 80V 5A DO201AD	D10	Amo		<b>Axial Auto Insertion Machine</b>
11	ECMP000021	DIODE GEN PURP 1KV 1A DO41	D11	Amo		<b>Axial Auto Insertion Machine</b>
12	ECMP000025	TVS DIODE AXIAL	D72	Amo		<b>Axial Auto Insertion Machine</b>

No.	Part Number	Description		Packaging	Picture	Solutions
13	ECMP000028	Connector,P=2.5mm 2 pin 1 Row Vertical unshrouded	J12 J18	Bulk		Odd From Insertion Machine
14	ECMP000029	Connector,P=2.5mm 4 pin 1 Row RA unshrouded	J3	Bulk		Odd From Insertion Machine
15	ECMP000030	Connector,P=2.5mm 5 pin 1 Row RA unshrouded	J6	Bulk		Odd From Insertion Machine
16	ECMP000031	Connector,P=2.5mm 4 pin 1 Row Vertical unshrouded	J8	Bulk		Odd From Insertion Machine
17	ECMP000033	Spade Terminal	J15 J20 AC(L) AC(N)	Bulk		Odd From Insertion Machine
18	ECMP000034	Connector P=2.5mm 2pin 1Row Right Angle Hook Ivory	J19	Bulk		Odd From Insertion Machine

No.	Part Number	Description		Packaging	Picture	Solutions
19	ECMP000159	Connector P=2.0mm 34pin 2Row Right Angle Latch Type	J22	tray		<b>Odd From Insertion Machine</b>
20	ECMP000036	Connector P=2.0mm 5pin 1Row Vertical White	J27	Bulk		<b>Odd From Insertion Machine</b>
21	ECMP000037	Relay 12Vdc SPDT 16A Flux Protection	K2	tube		<b>Odd From Insertion Machine</b>
22	ECMP000168	VARISTOR 212V 2.5KA DISC 10MM	MOV1	tape		<b>Odd From Insertion Machine</b>
23	ECMP000040	Sensing Gauge	PS1	tray		<b>Odd From Insertion Machine</b>
24	ECMP000057	RES AXIAL 100 OHM 5% 1/4W	R21 	Amo 		<b>Axial Auto Insertion Machine</b>

No.	Part Number	Description	Figure	Packaging	Picture	Solutions
25	ECMP000202	RES RADIAL 2 OHM 5% 3W	R26	Amo		<b>Axial Auto Insertion Machine</b>
26	ECMP000157	RES 0.0 OHM 3A JUMP AXIAL	R27	Amo		<b>Axial Auto Insertion Machine</b>
27	ECMP000196		R55	Amo		<b>Axial Auto Insertion Machine</b>
28	ECMP000072	RES AXIAL 100K 5% 1W	R72	Amo		<b>Axial Auto Insertion Machine</b>
29	ECMP000081	TRANSFORMER	T1	Tray		<b>Odd From Insertion Machine</b>
30	ECMP000087	IC OFF-LINE SWITCH PWM 8DIP	U6	Tube		<b>Odd From Insertion Machine</b>

No.	Part Number	Description		Packaging	Picture	Solutions
31	ECMP000090	Trimmer Potentiometer 500R 30% 0.1W	VR1	Bulk		Odd From Insertion Machine
32	ECMP000091	Trimmer Potentiometer 100R 30% 0.1W	VR2	Bulk		Odd From Insertion Machine
33	AS000000014 1	HARNESS, GROUND CRIMP, PCBA	AC(G)	Bulk		
34	ECMP000095	2.5mm Vertical Header 2 Pin	J7	Bulk		Odd From Insertion Machine
35	ECMP000096	2.5mm Vertical Header 4 Pin	J11	Bulk		Odd From Insertion Machine
36	ECMP000158	Connector P=2.5mm 2 pin 1 Row RA shrouded	J2	Bulk		Odd From Insertion Machine

# PCBA#2

Case	No.of MC (sets)	Tact Time (sec)	No. of Cavity	No.of Insert Var/Qty (pcs)	1st MC Var/Qty (pcs)	2nd MC Var/Qty (pcs)	3rd MC Var/Qty (pcs)	4th MC Var/Qty (pcs)	Cycle Time (sec)	Output (pcs/hr)	Remarks
<b>I</b>	<b>1</b>	$\leq 1.6$	<b>2</b>	<b>1 / 4</b>	<b>1 / 4</b>	---	---	---	<b>~11</b>	<b>~650</b>	

# Welcome inquiry

1, Please visit : [www.smthelp.com](http://www.smthelp.com)

2, Welcome to our factory in Shenzhen China

3, Google: Auto+Insertion

4, Looking forward to your email: [shaoyong@smthelp.com](mailto:shaoyong@smthelp.com)