Y-S330W
PCB Depaneling System

2018 Jan

Video
https://safesync.aurotek.com/app#folder/CRKJ/Standard/?a=YqsHeLGwSrs

Y-S330W PCB Depaneling System

www.aurotek.com.tw

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Feature Introduction

Graphical User Interface
The user interface is based on the Windows GUI operating system and is easy to use. A CCD camera is also used to display a 10X image of the PCB to improve training precision.
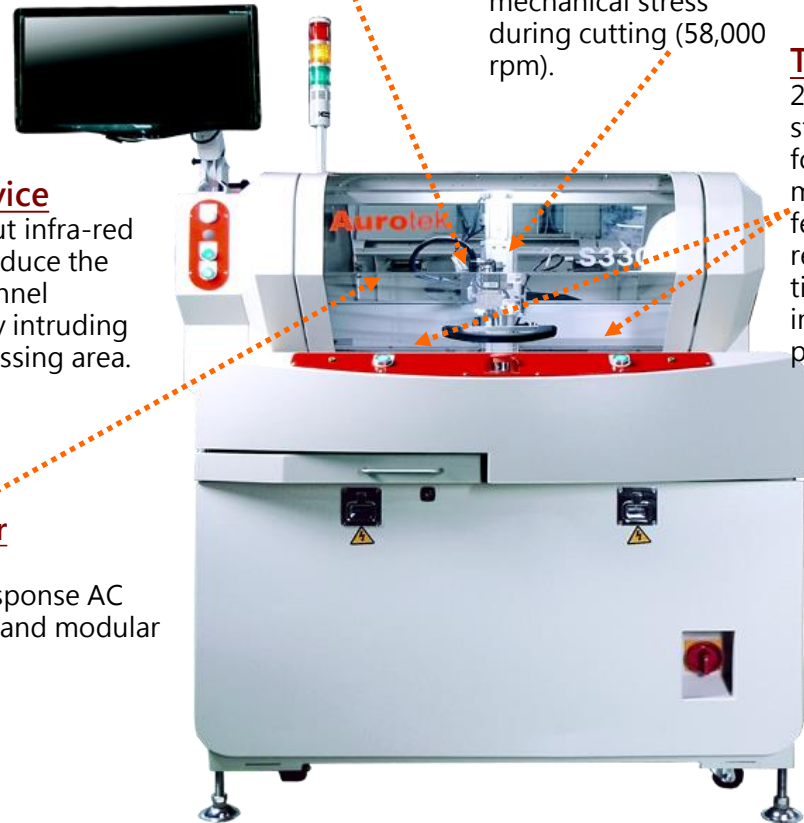
Tool Break Detection
During every routing task, this system will detect any variable change of bit, and notice the user with alarm system.

Spindle Motor
High-speed spindle motor to reduce mechanical stress during cutting (58,000 rpm).

Twin Slides
2 working stations allow for alternative material feeding, reducing idle time and improving productivity.

Safety Device
Use block-out infra-red sensors to reduce the risk of personnel inadvertently intruding on the processing area.

Axial Motor
Uses a high precision/response AC servo motor and modular actuator.

Controller
PC-based 4-axis motion controller.

Specification

Setting Fixture	2 stations
Working Area	X:330mm, Y:330mm, Z:60mm
Cutting Area	Max：X:330mm, Y:330mm
PCB Component Height	Top side：15mm Bottom side：35mm(with universal jig)、45mm(with specific jig)
PCB Thickness	0.5 to 5.0 mm
Router Bit Diameter	0.8 ~ 2.0 mm (Optional for more than 2.0mm)
Precision of Cutting	± 0.08mm
Positioning Accuracy	± 0.01mm
Positioning Repeatability	± 0.01mm
Number of Axis in use	4 Axes (X, YL, YR, Z).
Driving Speed (Max)	X, YL, YR : 1000mm/sec, Z: 750mm/sec
Cutting Speed (Max)	X, Y, Z: 100mm/sec
Spindle Motor	High speed variable frequency motor 265W (Max.58,000rpm) ; Option: 4025DC-T: 470W (Max:30,000rpm) ; 4033:500W (Max:100,000rpm)
Bit Change	Manual/ Automatic- Optional
Cutting Ability	Linear, Circular, U-curve, Arc, L-curve
Motor of Axis	4 Axes (200W Panasonic AC Servo motors)
Bit Shift Count	1~9 (Availability depends on PCB thickness)

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Specification

Route Planning	Direct coordinate input or manual guiding with × 10 CCD camera
Safety Area Sensor	Standard
Bit Break Detection	Standard
Program Storage	HDD
Program Backup	USB
Operating System	Windows 7
Man-Machine Interface	LCD Monitor + Keyboard + Mouse
PCB Loading/Unloading	Manual
Power Supply	3 Phase AC220V±3% 50Hz/60Hz, 2.5 kw
Air	0.5Mpa
Dimensions	(W)1347mm × (D)1039mm × (H)1403mm + 524mm Signal Light
Weight	approx. 390 Kg
Base Height	900mm Max : 930mm
Vacuum Cleaner	YSF-V553 3HP 2.2 kw

Specification
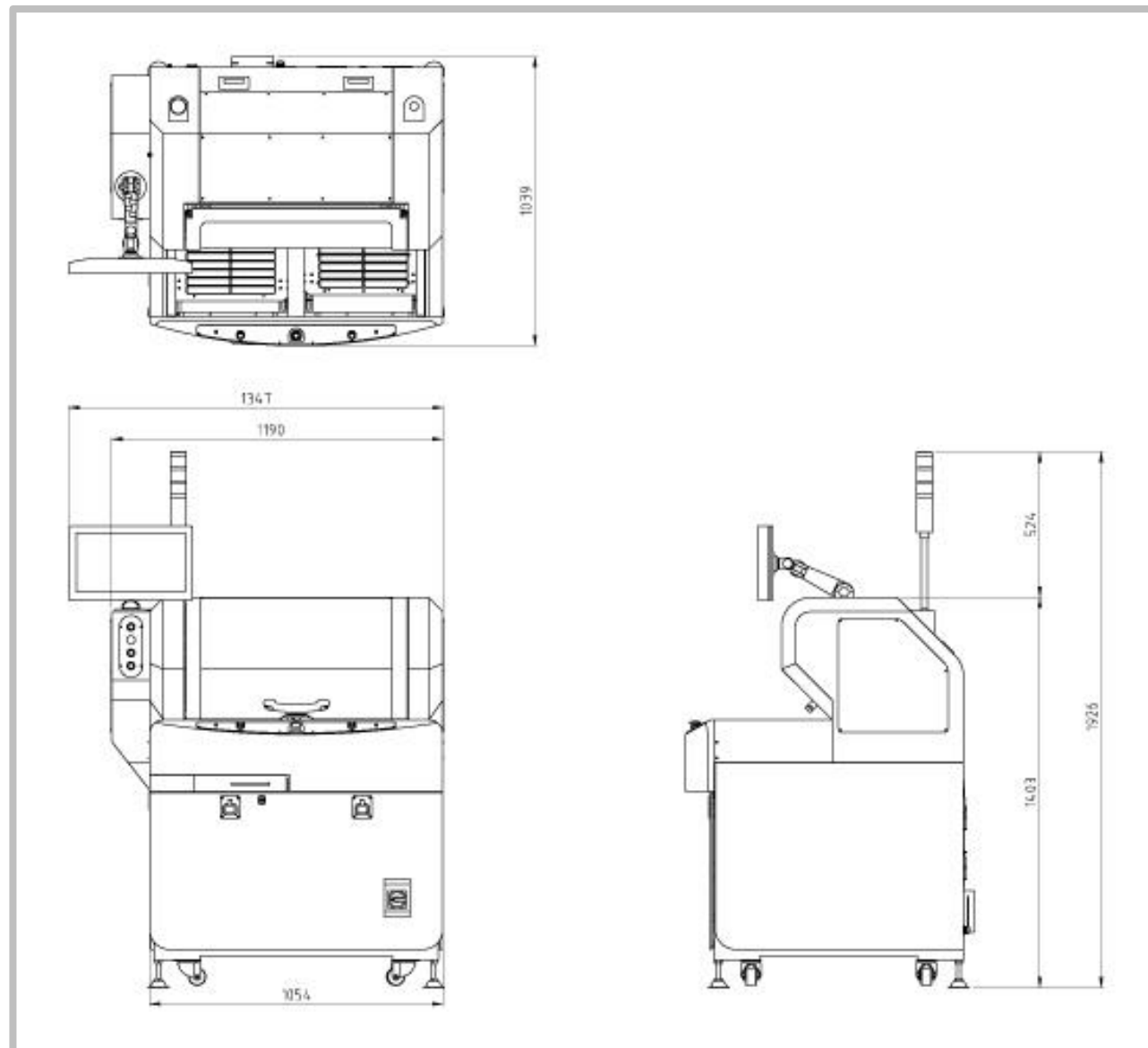
Advantages & Benefits

➢ High Speed & Precision

➢ Machine Customization Available

➢ 24Hr Service & Support Website

➢ Universal Jig & Customizable Jig

➢ Cost-Effective

➢ High C/P Values

➢ Start from at least 1 year warranty

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Advantageous Genes
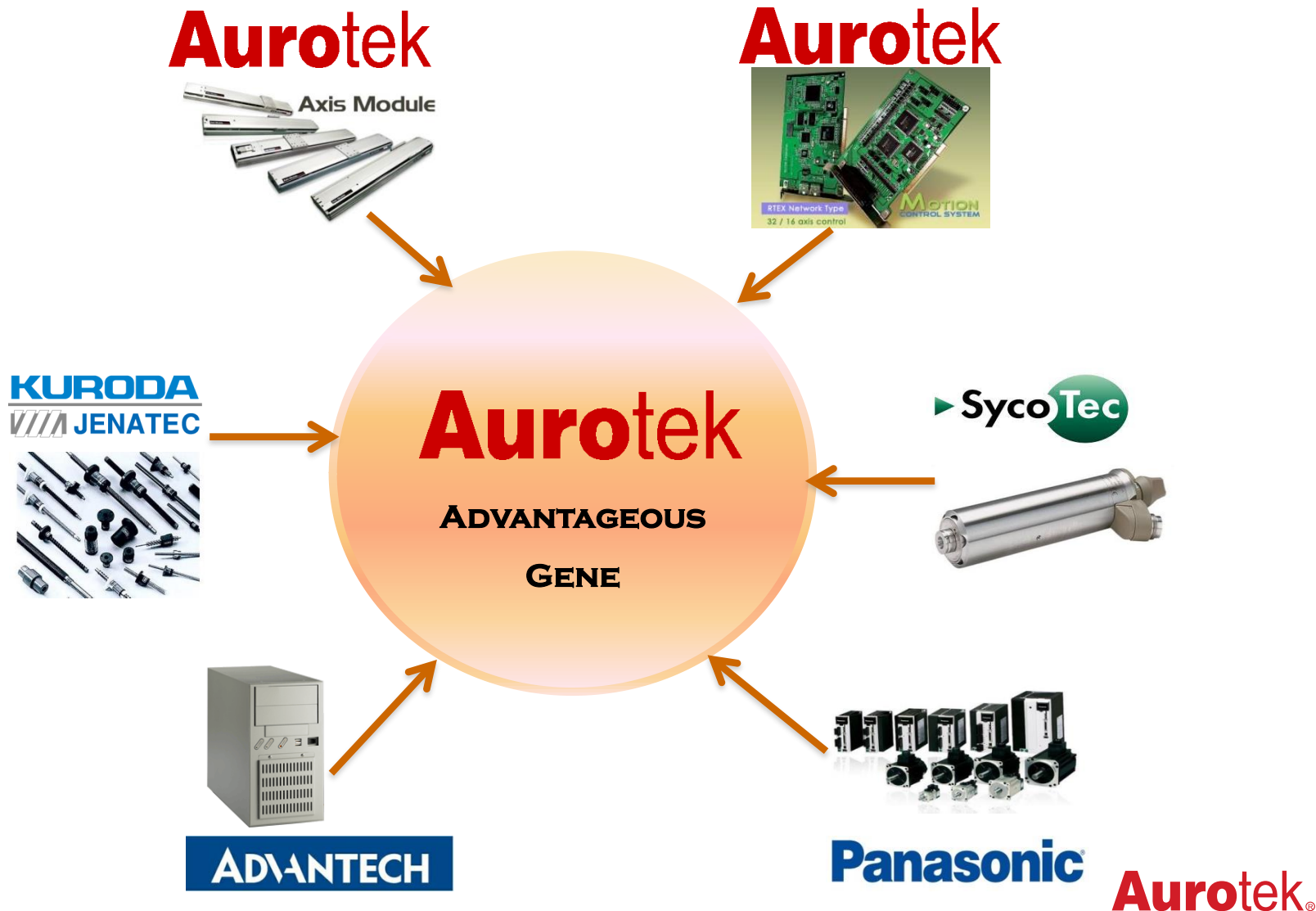
Product Overview

Strong inner / outer mechanical structure

Using Aurotek own brand high precision actuator module.
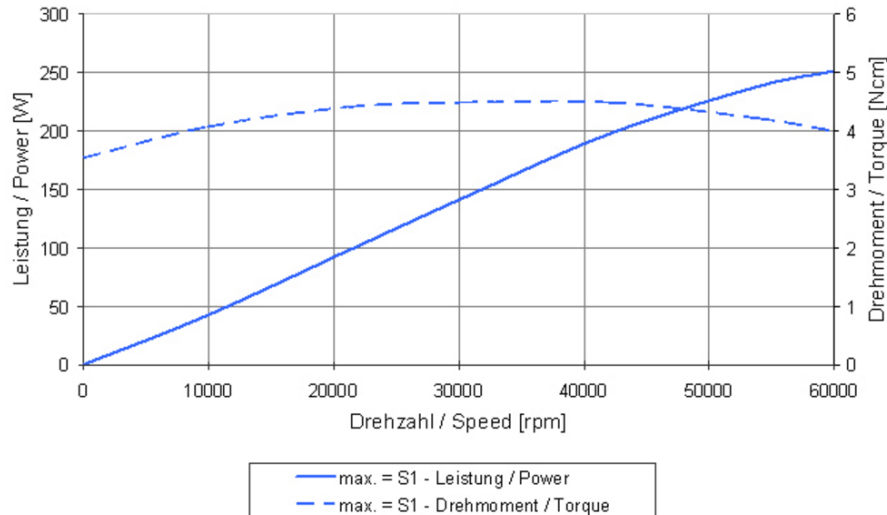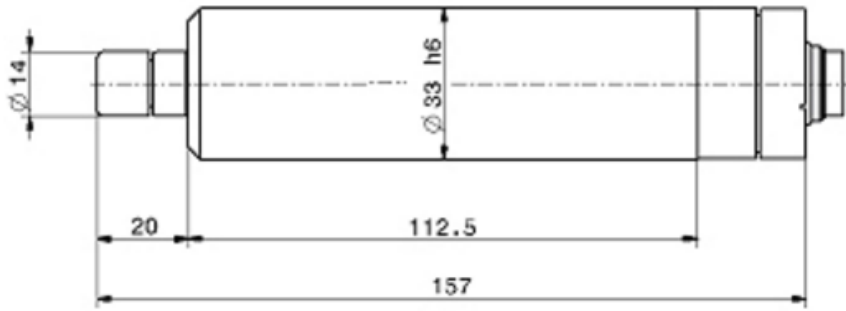X, YL, YR, Z are driven by individual Panasonic servo motor

Spindle & Motor

SycoTec Spindle 4026

Motor system: 3 phase asynchronous motor
Speed range: 5,000~60,000 rpm
Voltage: 30V
Current: max. 8A
Torque: 4.5 Ncm
Frequency: 83~1,000 Hz
Power: 265W
Weight: 700g
Bearing system: 2x Hybrid, 1 x Steel, lifetime lubricant
Protection category: IP 20
Working position:
Load direction: axial + radial
Run-out (taper): ≤ 1.5 μm
Cooling system: Self-ventilation fan
                Cooling via clamping bracket
Housing material: Stainless steel

Product Overview
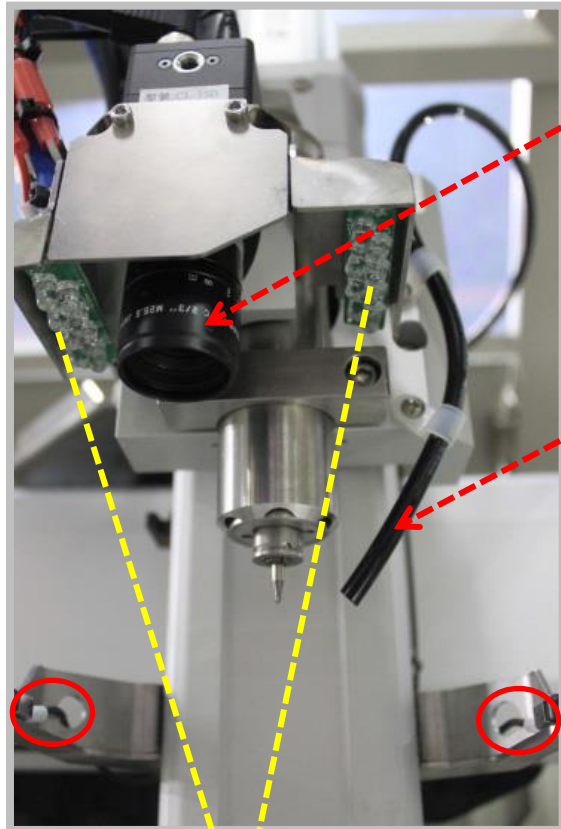
CCD camera with LED light

CCD Supports coordinate setting. It checks fiducial marks and simulate cutting routes before actual cutting.
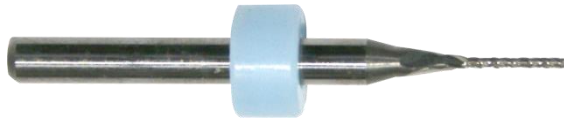
Ionizer

Ionizer focuses on cutting point during cutting process. It reduces electrostatic discharge effectively.
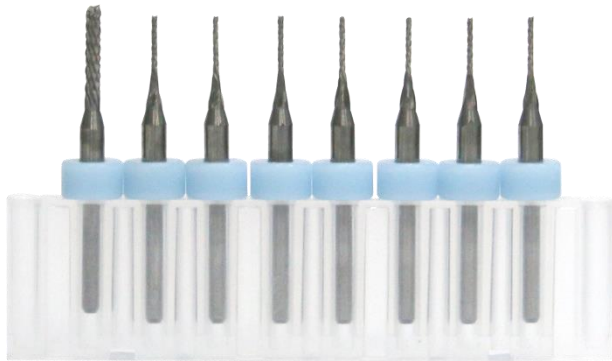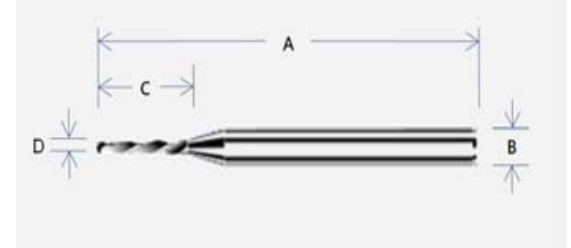
Bit break check sensor

A standard item in r-S330 series. Sensor detects bit breakage after every cutting movement.
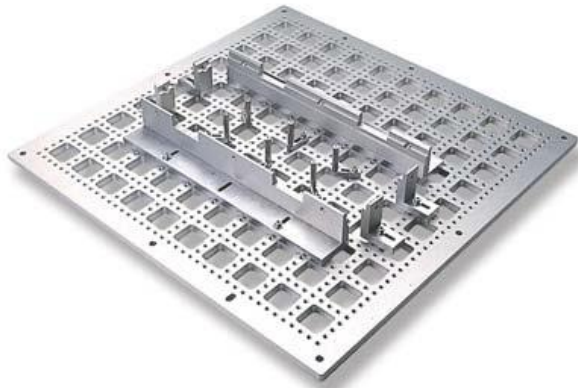
LED lights
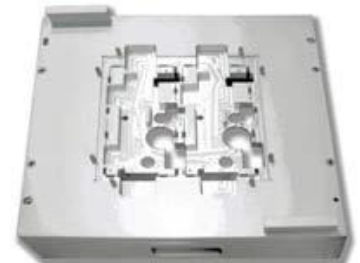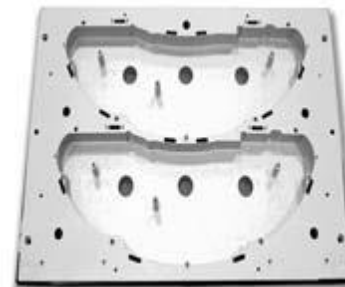
Routing Bit & Specific/Universal Jig

Bit Size
Ø 1 ~ Ø2 mm

LCF; Down Cut; Carbide end mills
Overall Length (A): 38.2 ±0.30 mm
Shank Diameter (B): 3.175 mm
Cutting Length (C): 6 ±0.50 mm
Cutting Diameter (D): 1.00 1.20 1.50 1.60 2.00 mm

Universal Jig
Supports variable PCB cutting

Specific Jig
provide a more stable and
accurate routing environment

Dust Collector

YSF Series Vacuum Cleaner

YSF vacuum cleaner is designed for PCB Separator Series to collect the dust & scrap generated by router cutting. High horse power motor & high efficiency fan ensure the suction with excellent efficiency.

Type	YSF-V553
Dimensions (WxDxH)	665x635x1610mm
Weight	195 kg
Power Supply	3 phase 50Hz / 60Hz 220V
	2.2 kw
Motor Power	3 HP
Inlet Wind Speed	26 m/sec
Inlet Wind Capacity	28 m³/min
Inlet Wind Pressure	300 mm-Ag
Inlet Diameter	150mm
Outlet Diameter	203mm

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Superb Product Features

1. Dual Sliding Working Stations

This provides an alternatively in-and-out working space to limit idle time, which in turn reaches the utmost output value.
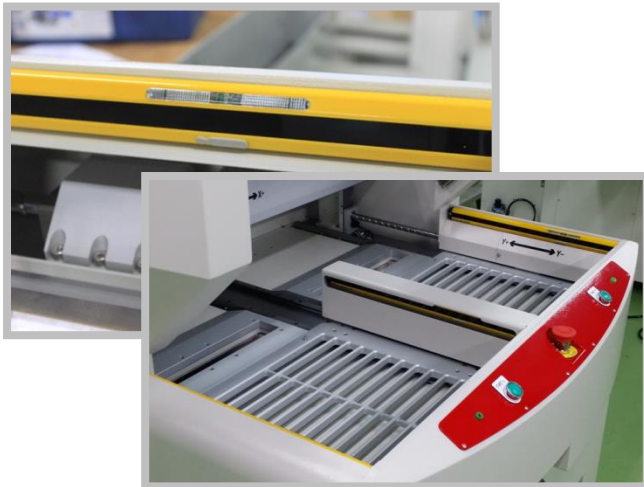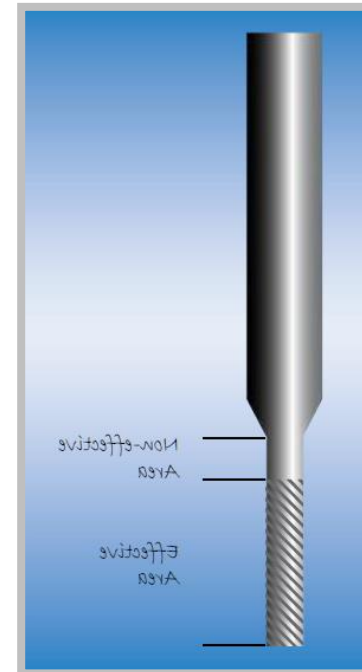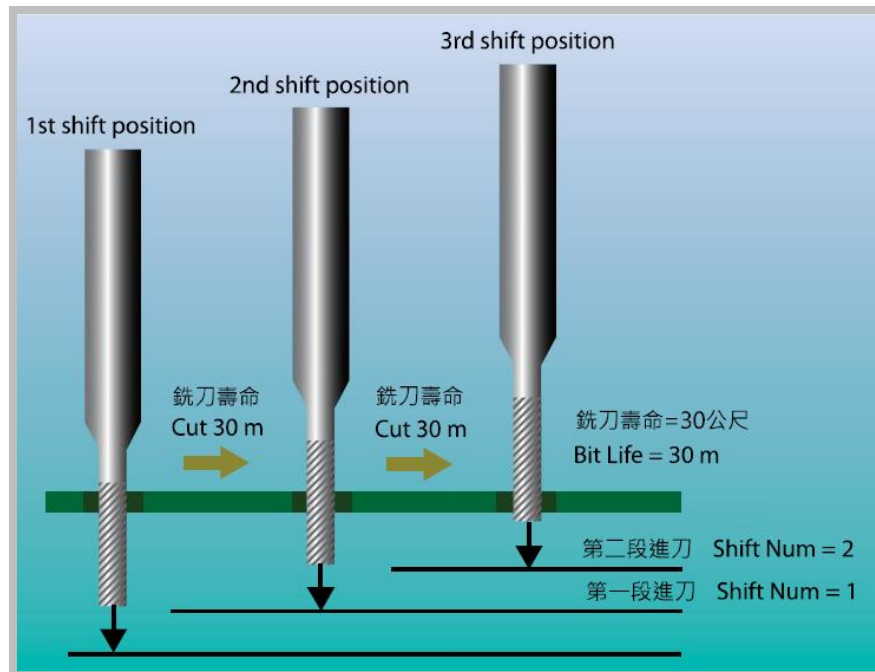

2. Safety Area Sensor

Aurotek always pays our best attention to prevent any accident during operation. With immediate stop function, it abides by CE standard.
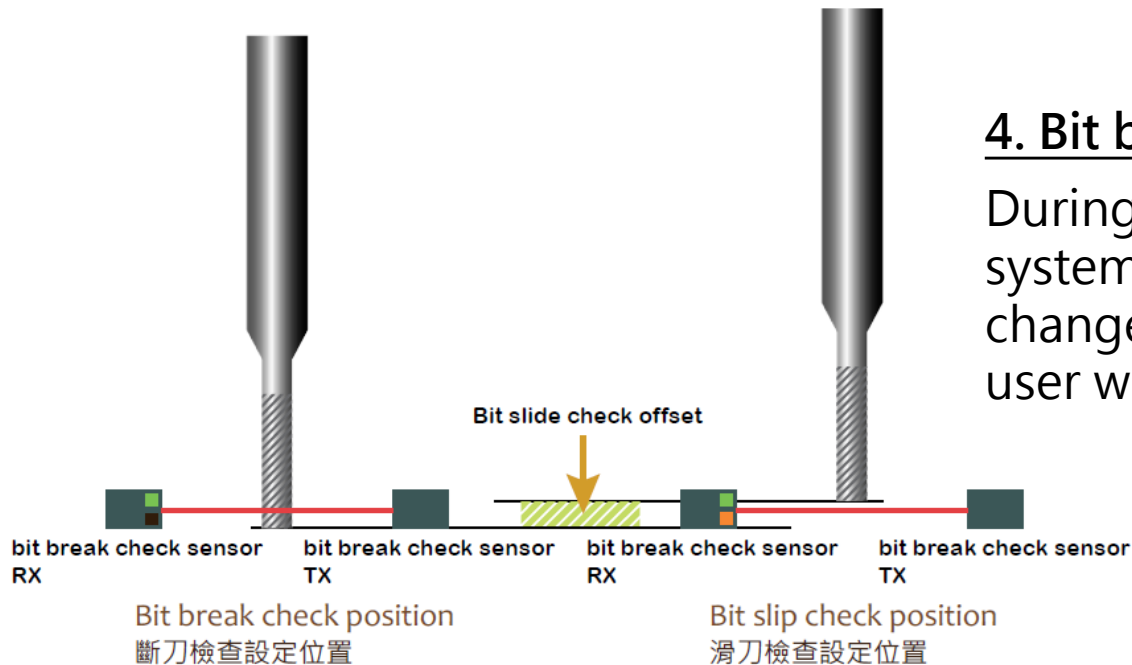
Superb Product Features

3. Maximum 9 Routing Bit Sectioning

User may set a designated distance, and have the routing bit shift down in order to make a new section of touting bit to cut boards. It multiplies the life of the routing bit.
Note: **The viable number of section depends on PCB thickness and bit length**.

Superb Product Features

Bit slide check offset

bit break check sensor RX | bit break check sensor TX | bit break check sensor RX | bit break check sensor TX

Bit break check position
斷刀檢查設定位置

Bit slip check position
滑刀檢查設定位置

4. Bit break detection Sensor

During every routing task, the system detects any variable change of bit, and notices the user with alarm system.

5. Bit Slip Detection Sensor

The condition of routing bit directly influences the cutting performance. Thus, we equipped with bit drop sensor to monitor whether the bit is clipped properly and its using condition.

Superb Product Features
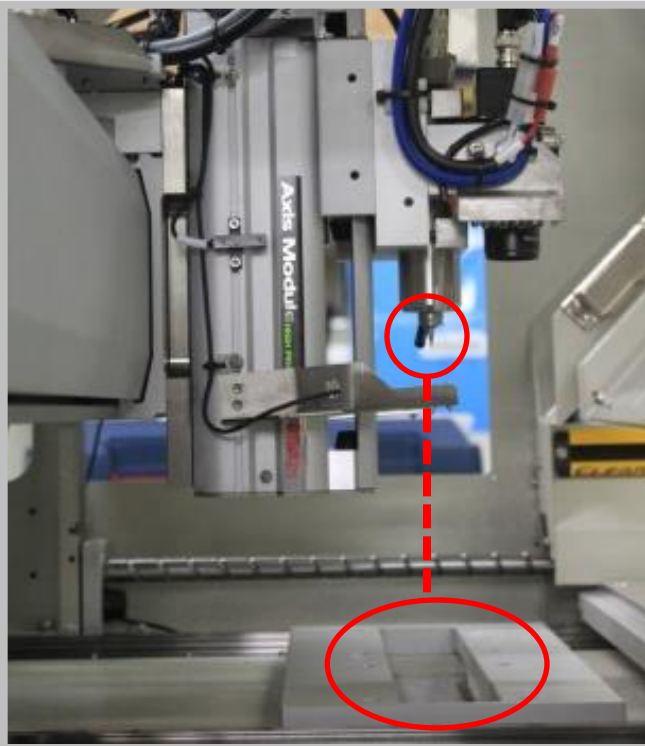
6. Small Dust Orifice

The vacuum suction is just under bit cutting position, which focuses on the actual cutting area. Together with the use of ionizer that remove ESD during bit cutting, these enhance dust collection efficiency significantly.

Downward Cut Dust Drops

PCB

Down side Vacuum Cleaner

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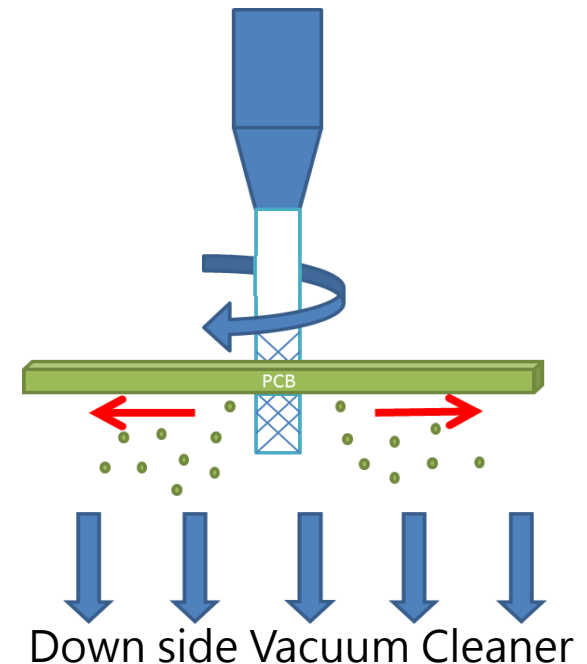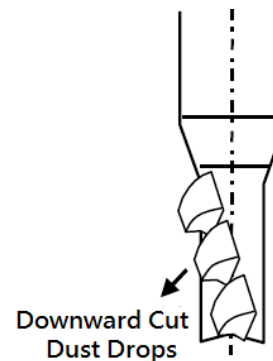
Superb Product Features

7. Graphical User Interface

Window 7 IPC with CCD X10 zoom-in image makes programming easier & increases the accuracy of cutting point setting.

8. CCD Image Pathway Simulation

CCD image can check & simulate the path of routing to reduce unnecessary mistakes before actual cutting.
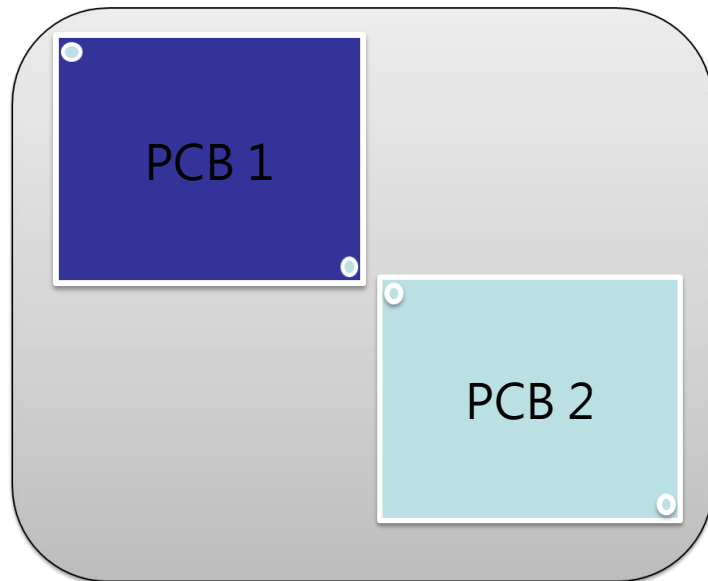
Superb Product Features

## 9. Multiple Fiducial Mark Alignment

Fiducial marks are automatically checked before every cutting process. Should misalignment happen caused by any reason, cutting process will be stopped immediately with a machine alarm.
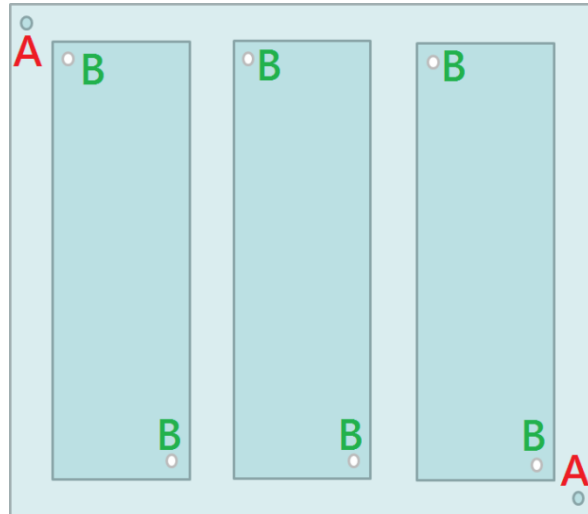
PCB panel
A: Main Fiducial Mark
B: Local Fiducial Mark

PCB 1

PCB 2

10. Cutting Path Translation

By aligning the fiducial marks, our program enables cutting path translation to other identical PCBs. This means save time when setting up cutting path.

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Superb Product Features
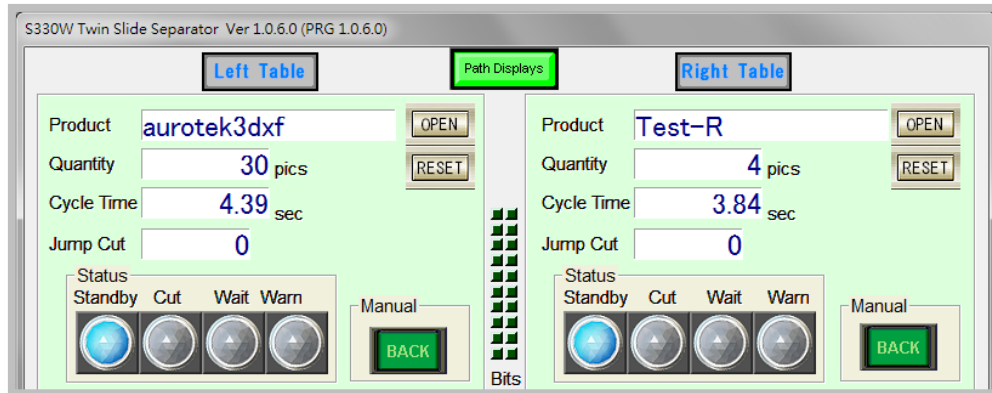
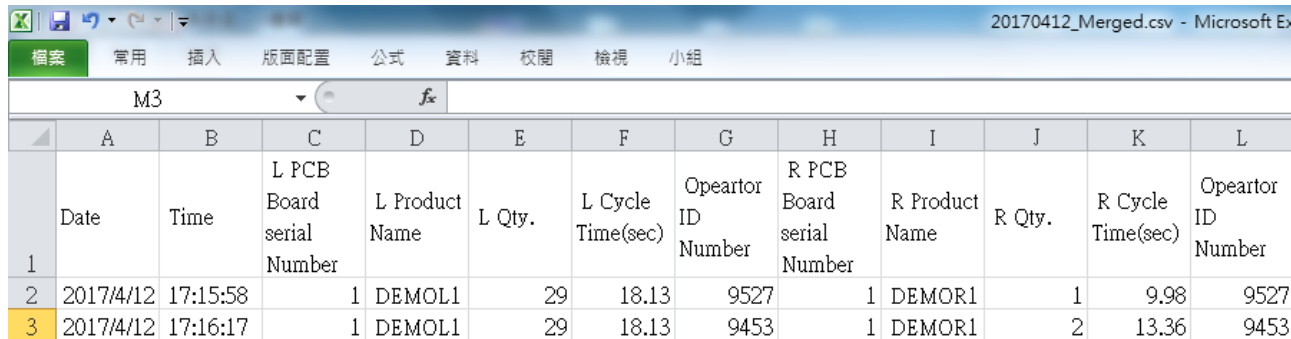## 11. Production Information

Showing product name, produced quantity, cycle time, and etc.
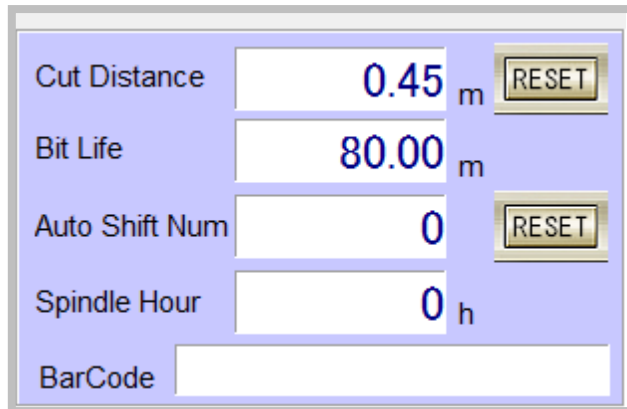

12. Bit & Spindle Lifespan Management

When cumulated cut distance reaches pre-set bit life, the program will give alert for bit change notification.

Superb Product Features

	A	B	C	D	E	F	G	H	I	J	K	L
1	Date	Time	L PCB Board serial Number	L Product Name	L Qty.	L Cycle Time(sec)	Opeartor ID Number	R PCB Board serial Number	R Product Name	R Qty.	R Cycle Time(sec)	Opeartor ID Number
2	2017/4/12	17:15:58	1	DEMOL1	29	18.13	9527	1	DEMOR1	1	9.98	9527
3	2017/4/12	17:16:17	1	DEMOL1	29	18.13	9453	1	DEMOR1	2	13.36	9453
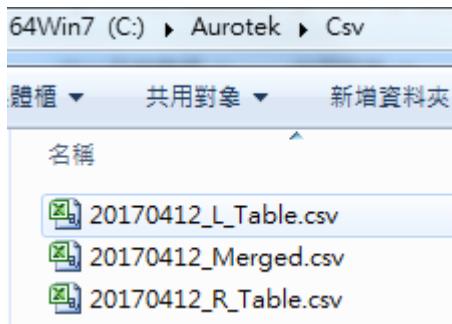
13. Production Traceability

Production data would be automatically recorded and stored in the IPC. Information such as Date, Time, Product Serial Number, Product Name, Production Quantity, Production Cycle time & Operator ID will be kept for future tracking.
(An optional barcode reader is required to enable this function)

Optional Features
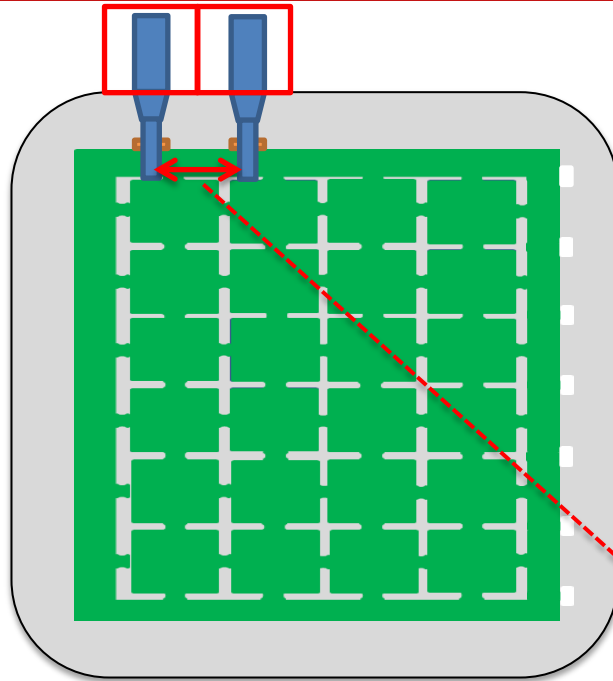
A. Dual Spindle System

Aurotek knows that production efficiency matters. With dual spindle system, it cuts off work cycle time while double up the overall output.

Min. distance is 43mm
Max. distance is 113mm

Spindles:
SycoTec Spindle 4026 * 2
265W Max.58,000rpm (Torque Max.4.5Ncm)

▶SycoTec
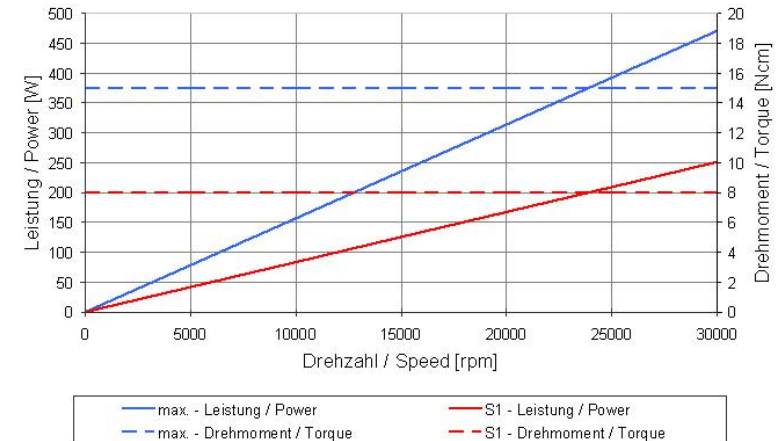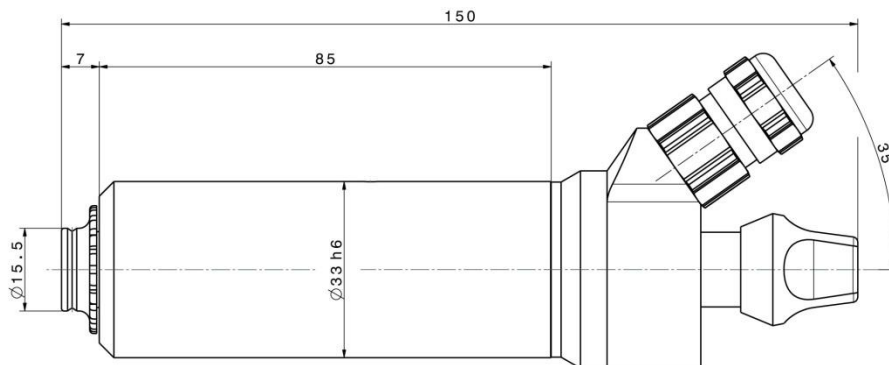
Optional Features

B. Aluminum Board Cut System

For cutting aluminum PCB panels, Aurotek suggests to use higher power, lower rpm, and higher torque spindles.

Spindle for Aluminum Board Cut System:
**SycoTec 4025DC-T** 470W Max. 30,000rpm (Torque Max.15Ncm)

Routing Bit & Cast Alloys:
The Aluminum Association (AA) has adopted a nomenclature standard to wrought alloys. Please inform Aurotek aluminum alloy codes of MCPCB panel in order to get best cutting performance.

Optional Features

C. Automatic Bit Changer System

When the cutting blade reaches its limit, the system will replace with a new blade and resume production automatically, it dramatically reduce configuration time and maintenance related personnel costs.
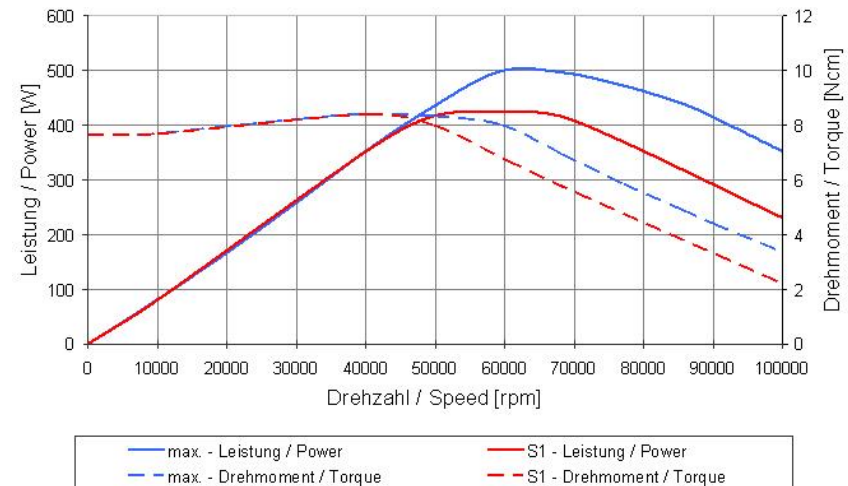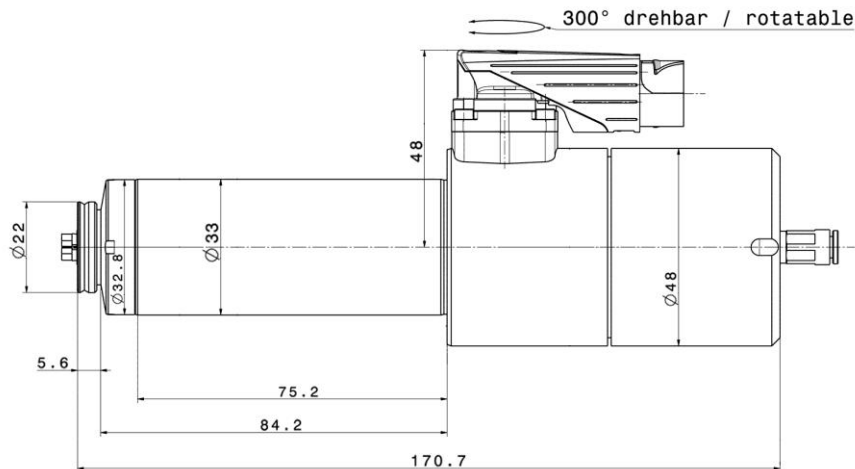
Automatically drops disused bit and takes a new bit

Left Table

Right Table
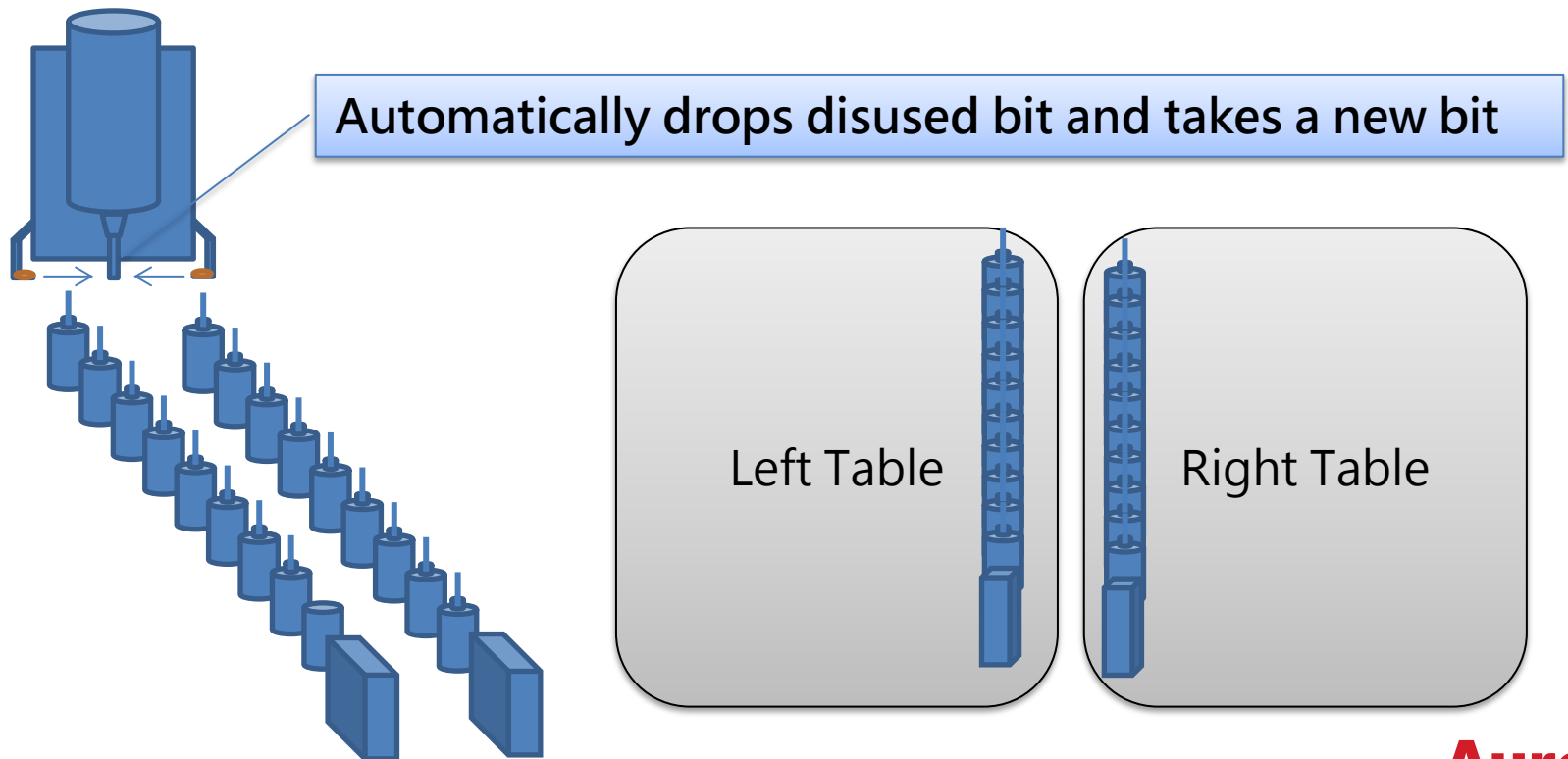
Optional Features

Spindles for Automatic Bit Changer System

To automatically change routing bit, SycoTec 4033 pneumatic spindle is required.

SycoTec 4033 AC Spindle:
500W Max. 100,000rpm (Torque Max.8.4Ncm)

Optional Features

D. Linking Barcode Module & CIM / MES Function

In response to Industry 4.0 era, the new complete data integration function can be easily setup and collects massive real-time production information and uploads it to the central terminal server instantly.

Automatic Barcode Reader

L Table

R Table
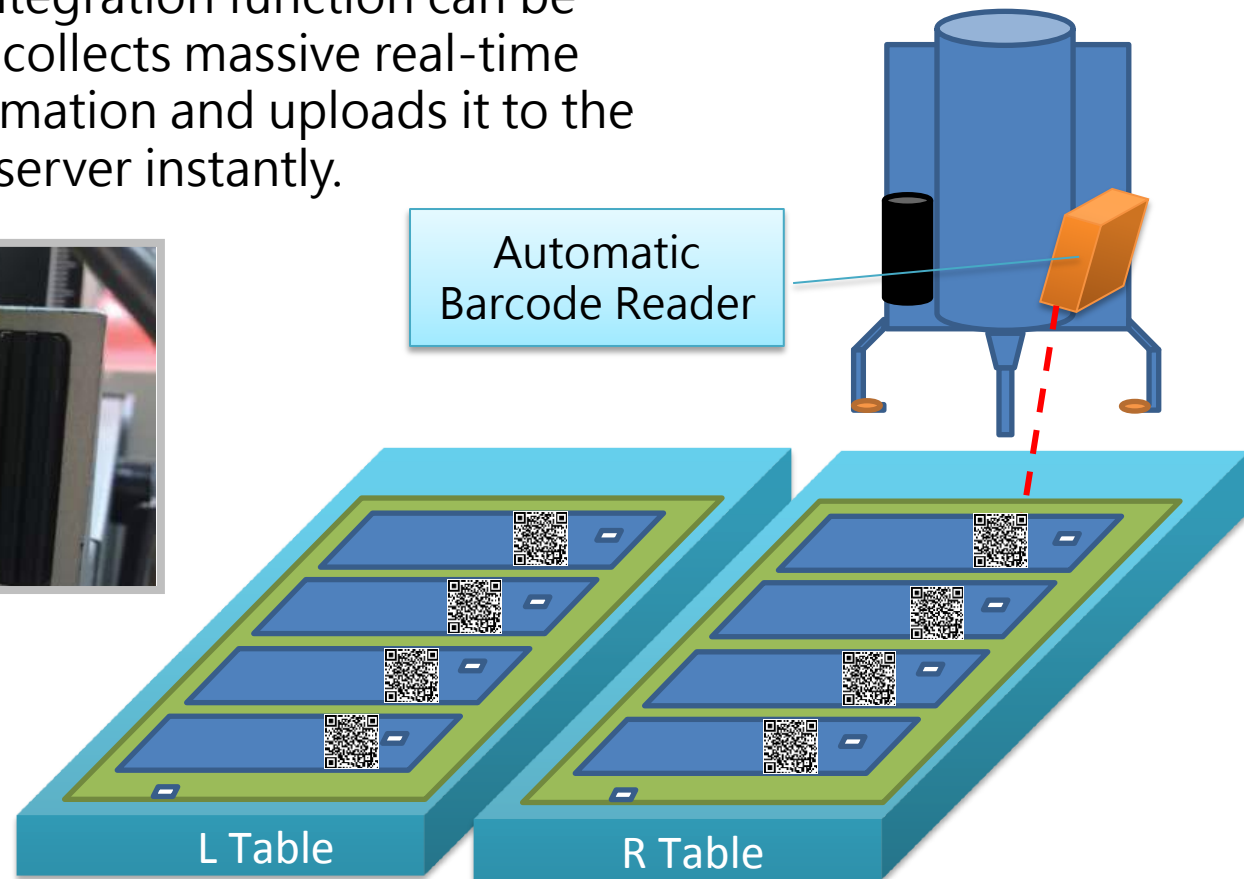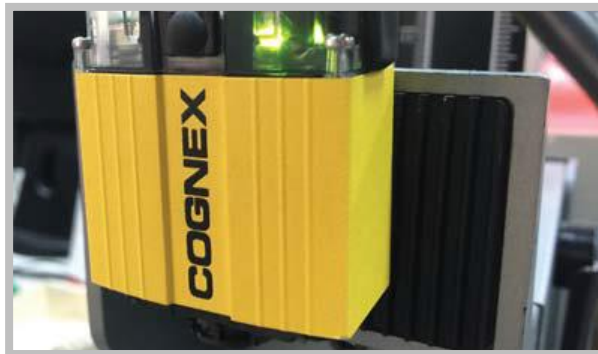
Optional Features

E. Off-line Editing Program

In response to Industry 4.0 era, users only need to upload AUTO CAD DXF to OFF-LINE EDITING PROGRAM, and use mouse to simply create cutting program. Then use USB storage device to save the edited program and upload to machine USB port. It is simple and efficient.
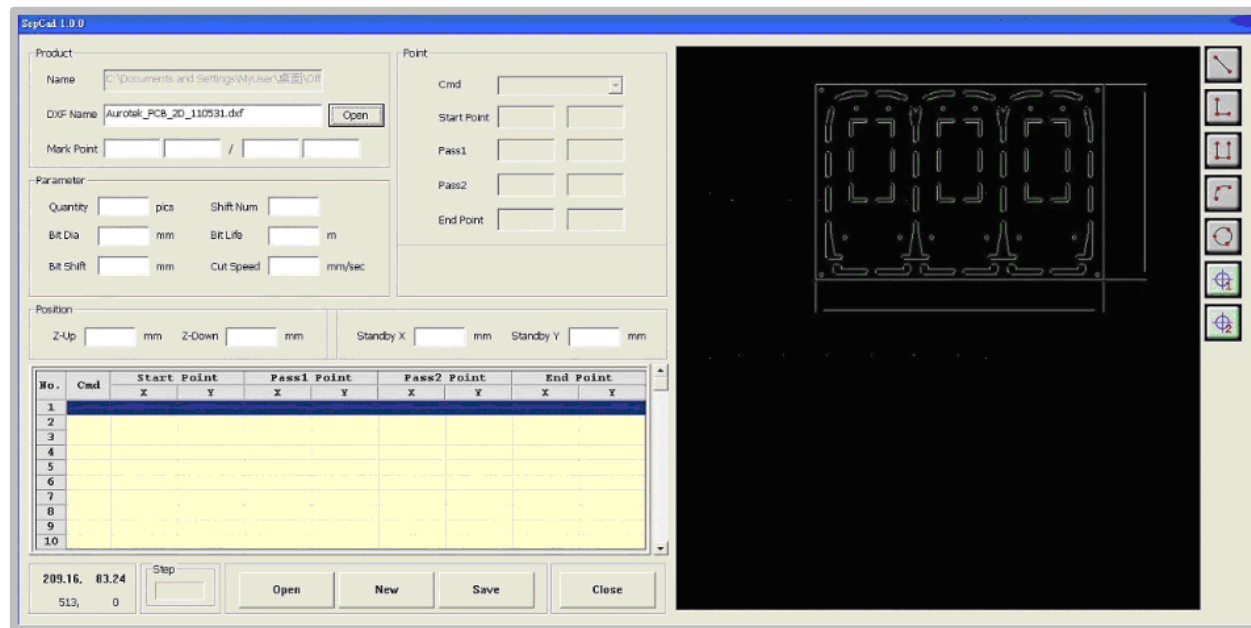
Other Flexible Options

F. Routing Bit Diameter Detection System

G. UPS Support System

H. Spindle Speed Adjustment System

I. USB Backup System

TAIWAN EXCELLENCE

Aurotek is well-experienced to cooperate with our global clients and never let down our client trust. We sincerely welcome you to join us developing your own customized system.

Global Service Support Platform

▸ Complete machine training program

▸ Global In-time technical support

▸ 24 hours professional after service

Global Customers
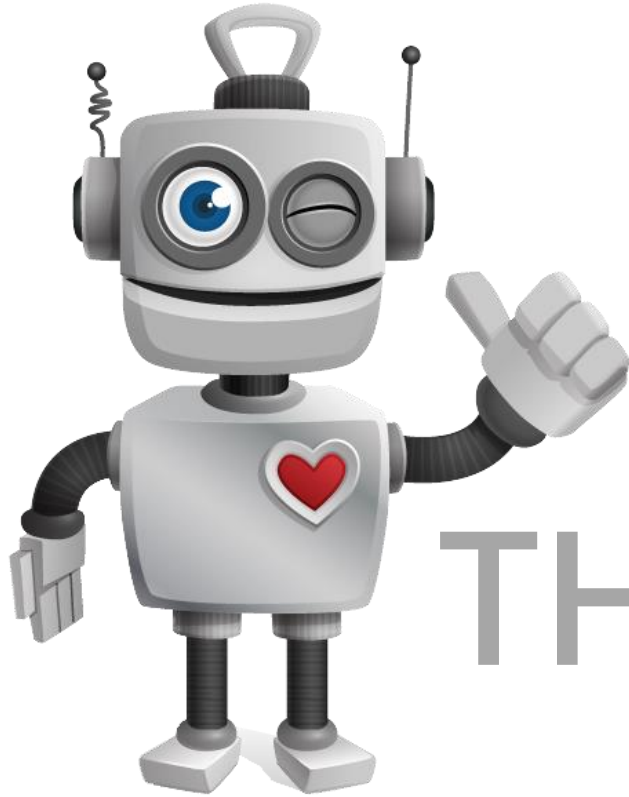
THANK YOU!

Aurotek®
A Complete Solution from One Source

AUROTEK CORPORATION