AUI Series
Inline Depaneling System

AUI 3000 (330*350mm, twin table)
AUI 4000 (430*450mm, twin table)
AUI 5000 (630*550mm, single table)

Machine Appearance

Feature Introduction

Carrier w/ Nozzles
Moving carrier with smart nozzle design enables automatic material input and production outflow.

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

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.

Inlet Conveyor
Adjustable width to suit varies sizes of PCB panel.

Work Exchanger
This work exchanger provides an alternative in-and-out working space to limit the idle time, which in turn reaches the utmost output value.

Axial Motor
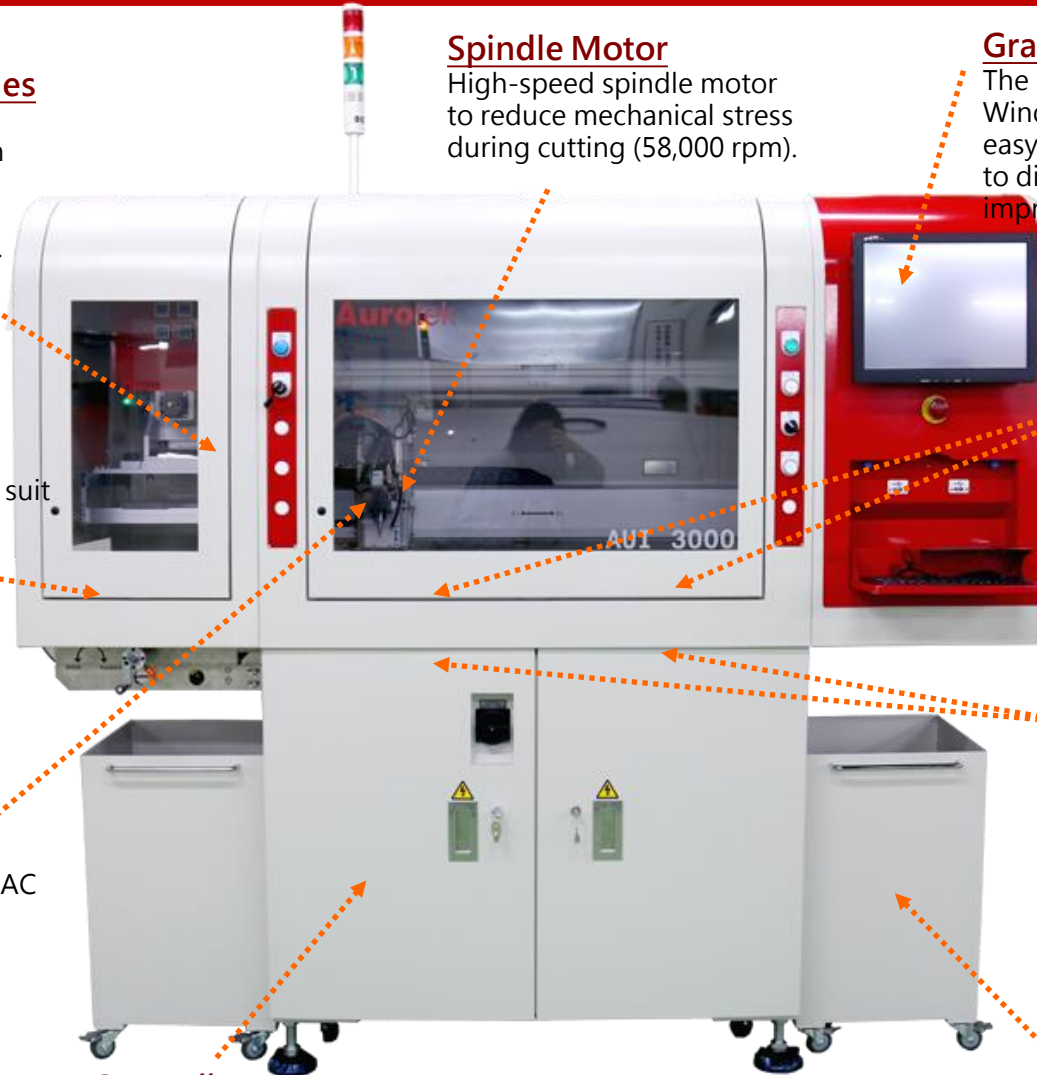7 axis high precision/response AC servo motor and modular actuator.

Dust Suction Duct
Design from the Principle of Fluid Dynamics. Collecting dust and fragments effectively in downward direction.

Controller
2 PC-based 7-axis motion controller.

Waste Bins
Large Volume bins to receive major waste PCB fragments after cutting.

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Specification

|	AUI 3000	AUI 4000	AUI 5000
Table	2	2	1
Working Area	X:330mm, Y:350mm,	X: 430mm, Y: 450mm,	X: 630mm, Y: 550mm
.	X:100mm, Y:100mm	X:100mm, Y:100mm	X:100mm, Y:100mm
Component	Top side：15mm　Bottom side：45mm		
PCB Thickness	0.5 to 3.0 mm		
Cutting Accuracy	± 0.08 mm		
Position Accuracy	± 10 µm		
Position Repeatability	± 20 µm		
Driving Speed	X, YL, YR : 1200mm/sec, Z: 750mm/sec (MAX)		
Cutting Speed	X, Y, Z: 100mm/sec (MAX)		
Spindle Motor	Standard: 4026, 265W, (Max.) 58,000 rpm, Torque: 4.5 Ncm Optional 1: 4025DC-T, 470W, (Max.) 30,000 rpm, Torque: 15 Ncm Optional 2: AP 008-ESD, 500W, (Max.) 80,000 rpm, Torque: 8.4 Ncm)		
Cutting Ability	Linear, Circular, U-curve, Arc, L-curve		
Route Planning	Direct coordinate input or manual guiding with × 10 CCD camera		

Specification

	AUI 3000	AUI 4000	AUI 5000
OS	Windows 7		
Servo Driver	Panasonic A6 400W		
Conveyor width	Min: 100mm		
Conveyor weight	2 Kgs	2 Kgs	3 Kgs
Load/ Unload	Automatic		
Power Supply	3 Phase AC220V±5% 50 Hz/60Hz, 4.0 kw		
Pneumatic	0.5Mpa (5 Bar)		
Dimension (W*D*H)	1974*1120*1720 mm + Signal Light 561 mm	2374*1334*1720 mm + Signal Light 561 mm	2572*1583*1720 mm + Signal Light 561 mm
Net Weight	680 Kgs	840 Kgs	860 Kgs
Base Height	890~940mm		
Dust Collector	5 HP Vacuum Cleaner		

Advantageous Genes
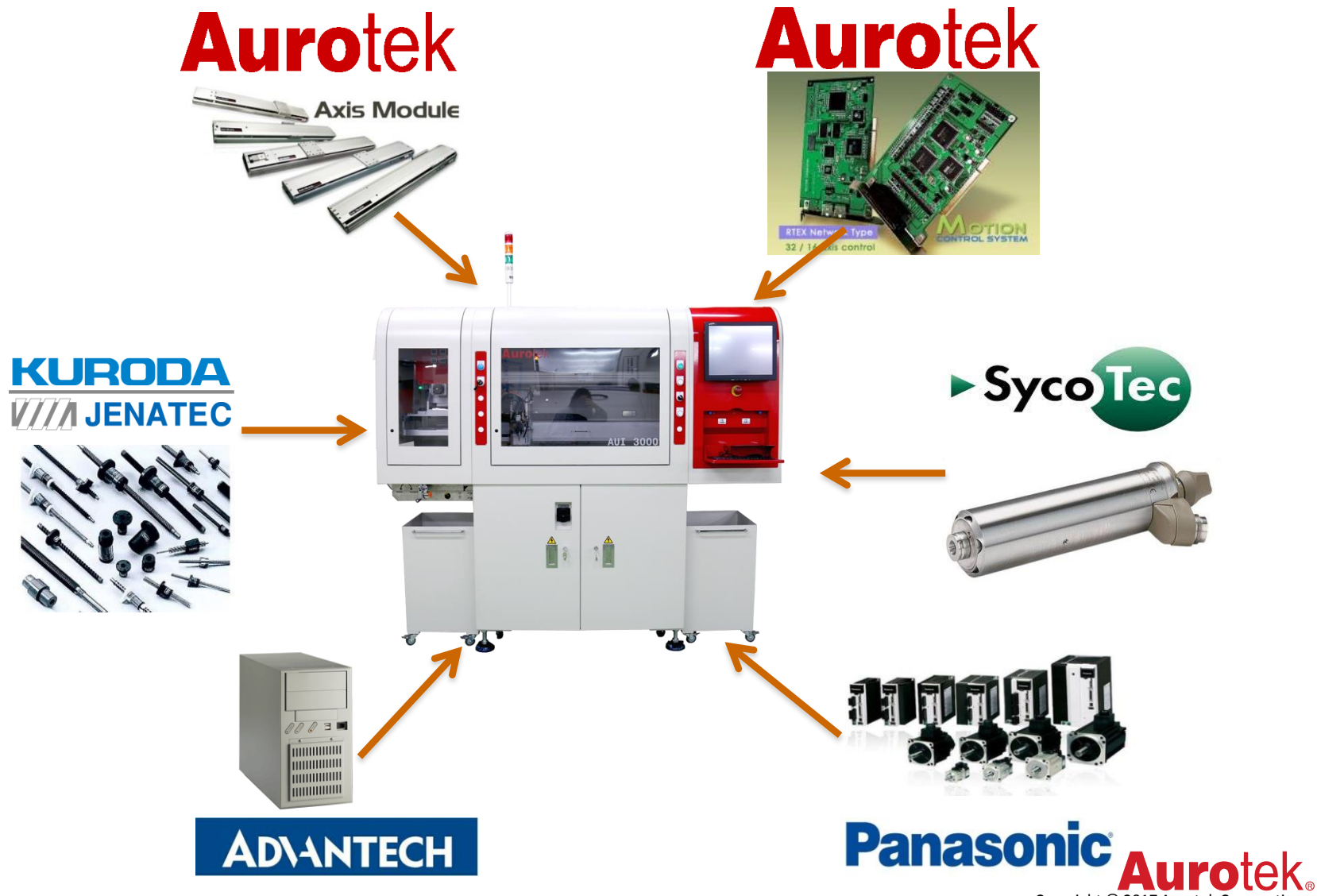
Equipment Overview
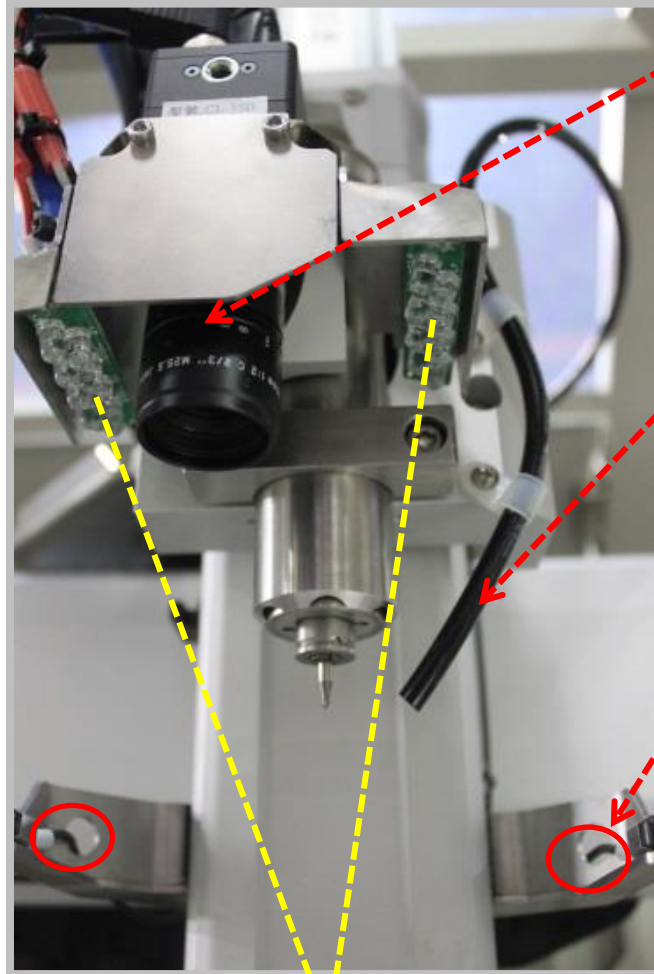
CCD camera & LED

CCD assists the coordinate setting for routing path making.

Ionizer

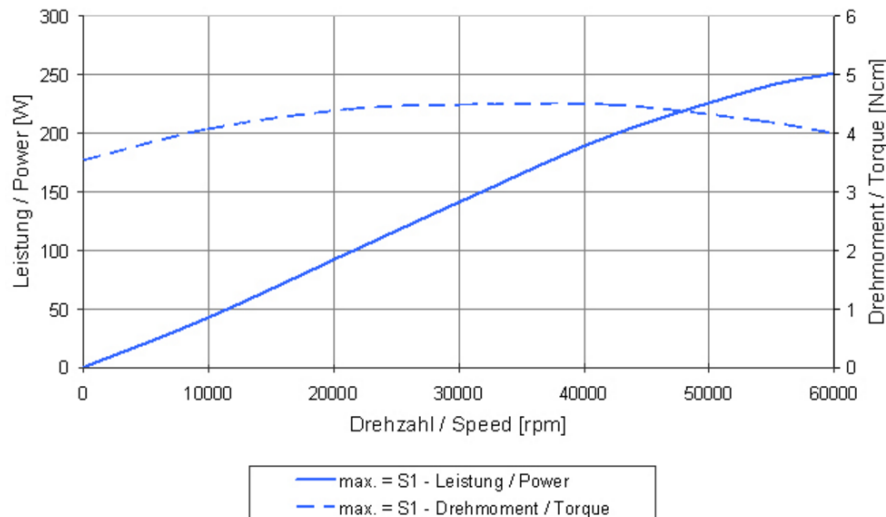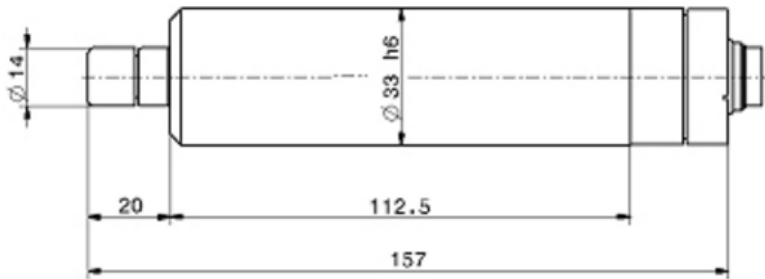Ionizer reduces electrostatic discharge effectively.

Bit break/ slide check sensor

A Sensor detects bit break or slide after each routing.

LED lights

Equipment Overview

SycoTec 4026 Spindle

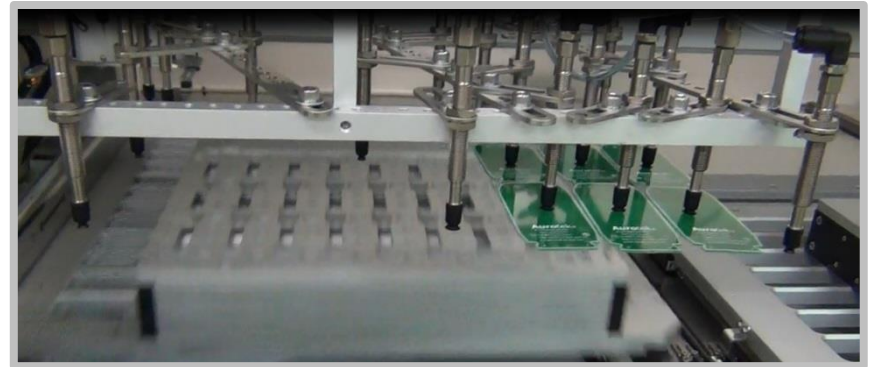Speed range: 5,000~60,000 rpm
Torque: 4.5 Ncm
Frequency: 83~1,000 Hz
Power: 265W
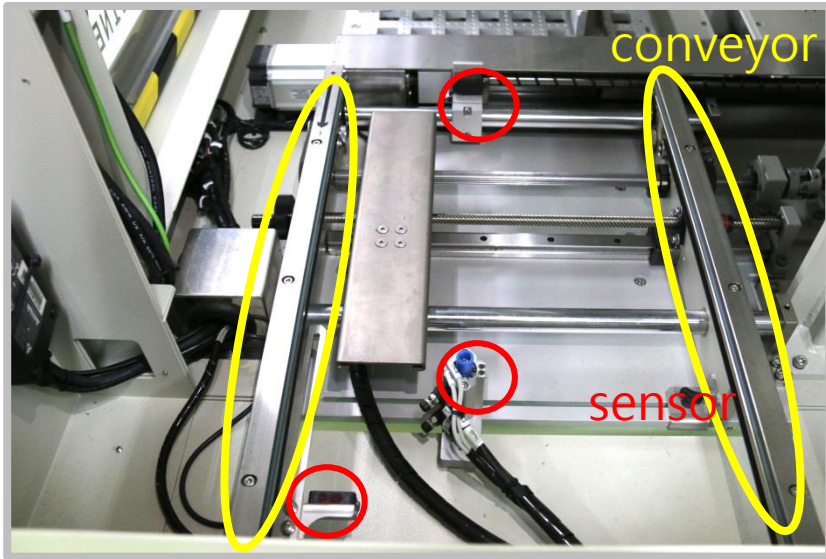
Equipment Overview

Carrier & P/P Axis

Carrier and Pick & Place Axis

With Carrier & P/P Axis it could move PCB from inlet conveyor to standby working table precisely; After routing.
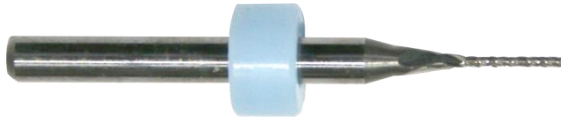
Equipment Overview

conveyor

sensor

Inlet Conveyor & Sensor

Adjustable width of conveyorto meet varies sizes of PCB panel.
Auto width adjustment (set by software) is option

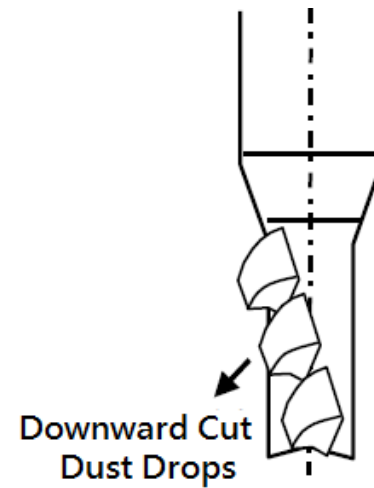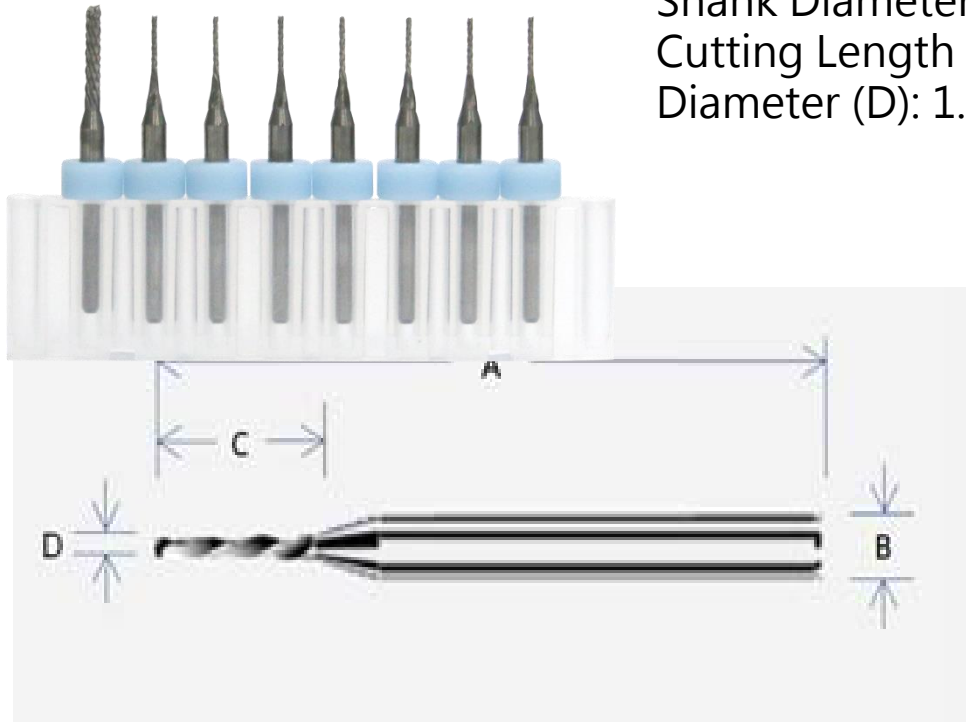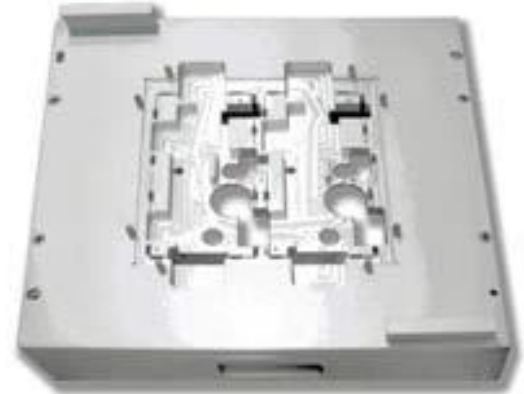**Width Adjustment**

Routing Bit

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
Diameter (D): 1.00 1.20 1.50 1.60 2.00 mm

Downward Cut
Dust Drops

Specific Fixture

Specific Jig
Inline router must equip with specific jig, for more stable and accurate routing environment.
Cost will be evaluated case by case.

Dust Collector

High horse power motor (5HP) & high efficiency fan ensure the suction with excellent efficiency for the dust collector

Type	YSF-V605
Dimensions (WxDxH)	780x665x1900mm
Weight	230 kg
Power Supply	3 phase 50Hz / 60Hz 220V
	3.7 kw
Motor Power	5 HP
Inlet Wind Speed	28m/sec
Inlet Wind Capacity	40 m³/min
Inlet Wind Pressure	300 mm-Ag
Inlet Diameter	150mm
Outlet Diameter	203mm

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Features- Waste Ramp and Bin
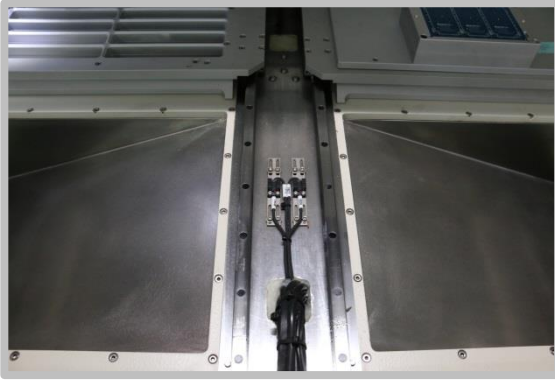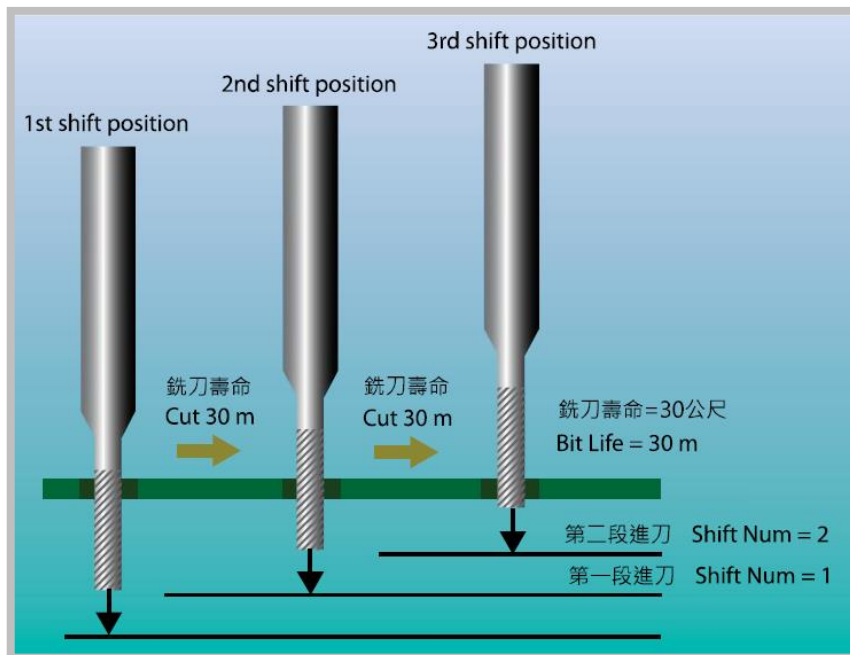

Waste Ramp & Bin

After finishing depaneling, waste fragments would be dropped to waste ramp under work stations, all the way down to the waste bins on both sides.
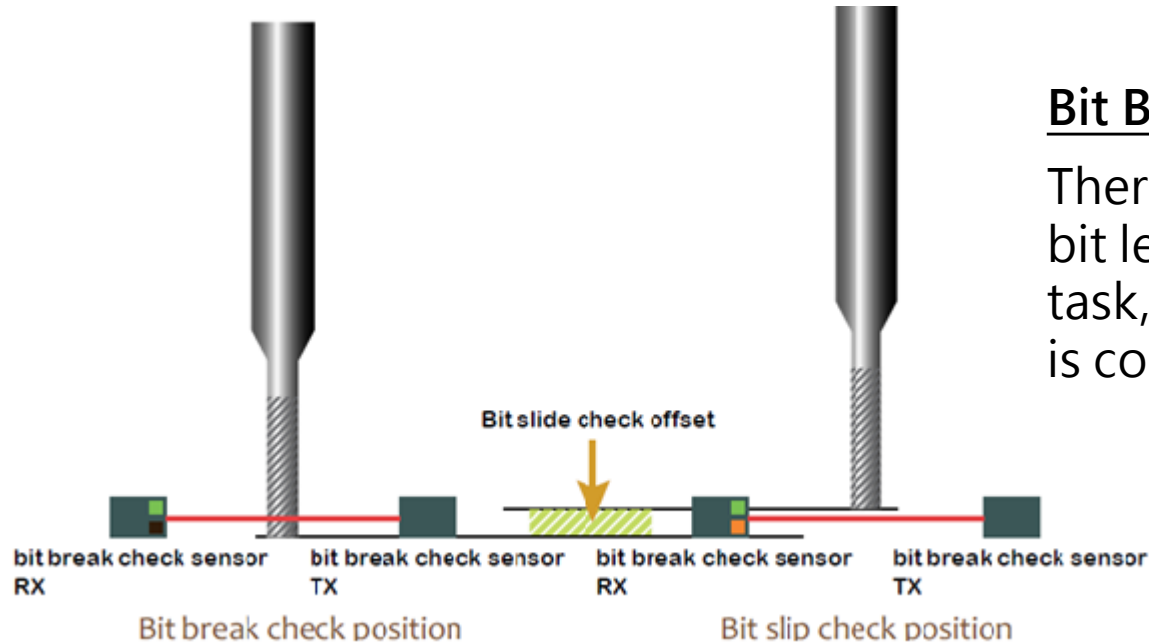
Features- Bit Sectioning

Routing Bit Sectioning

User sets up nominated distance for each bit section, and set the number of bit lifting according to the PCB thickness.
Once it reaches nominated working distance, will automatically lift bit and use fresh bit section to work, until reaching the next nominated distance.

Features- Bit Break & Bit Slip

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 | Bit slip check position

Bit Break Detection

There is a sensor to detect the bit length during each routing task, to make sure each working is correct and perfect.

Bit Slip Detection Sensor

It's standard for all series of Aurotek Depaneling systems to equip the bit drop sensor, to monitor and assure the in the correct position.
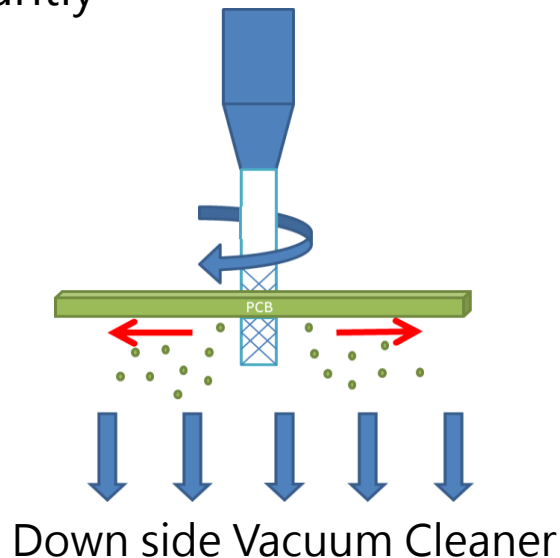
Features- Small dust Orifice
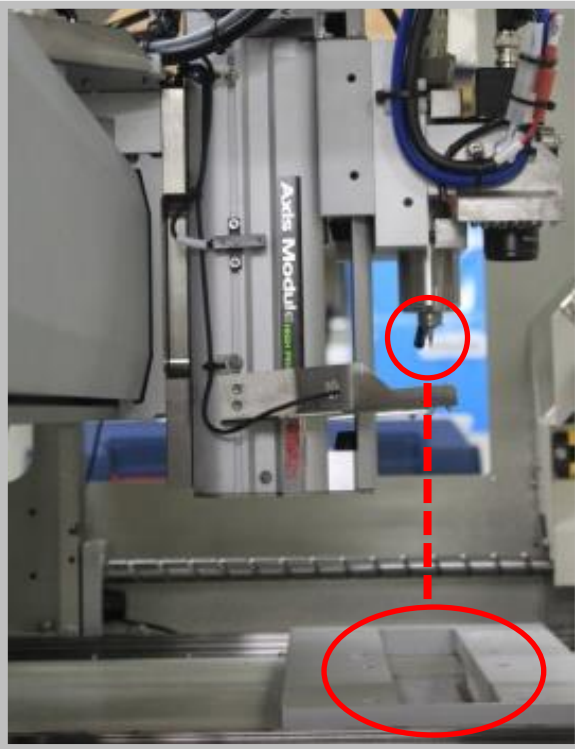
Small Dust Orifice

Vacuum suction area is narrow and under X axis. It will have better performance for dust collecting.

Equipping ionizer to remove ESD during cutting.

It increases the dust collection efficiency significantly

Down side Vacuum Cleaner

Features- User Interface & CCD Simulation
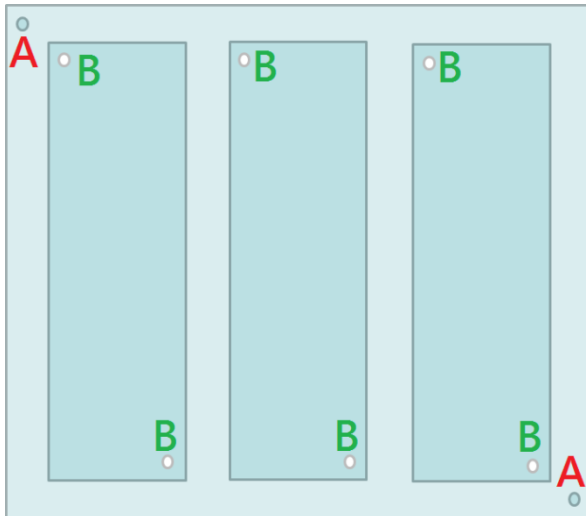

*Friendly User Interface

Window 7 OS and friendly user interface is easy for user learning and operating

*CCD Image Pathway Simulation

User could use CCD image to check & simulate the path of routing.
With 10 times zoom-in image it makes program editing.

Features- Fiducial Mark Alignment

PCB panel
A: Main Fiducial Mark
B: Local Fiducail Mark

Multiple Fiducial Mark Alignment

Fiducial marks are automatically checked before each routing.
If misalignment is detected within tolerance, the routing path will be translated according to the fiducial position shift.
If misalignment is over tolerance, cutting process will be stopped immediately with error message and alarm.
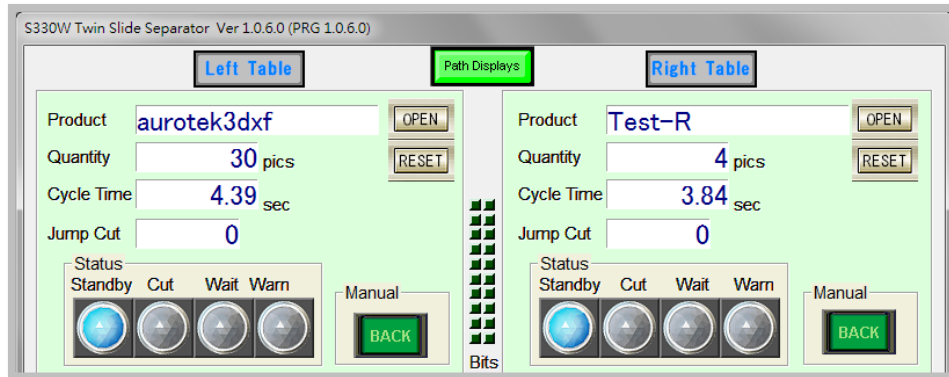
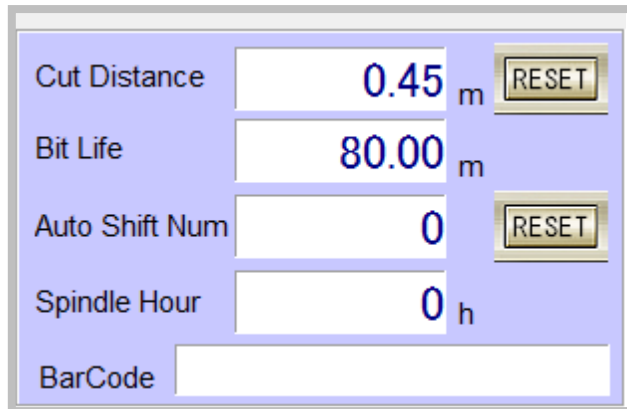# Features- Routing Path Copy
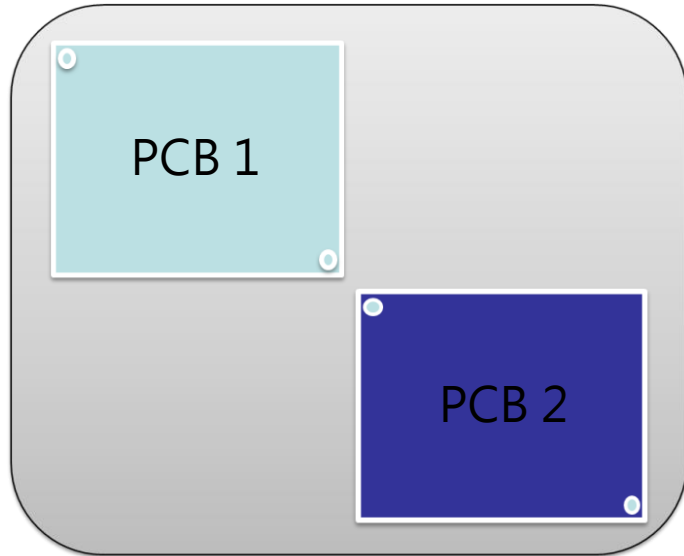
Routing Path Copy

By aligning the fiducial marks, the program enables cutting path translation to other identical PCBs. It saves lots time for routing path setup.

Features- Production information
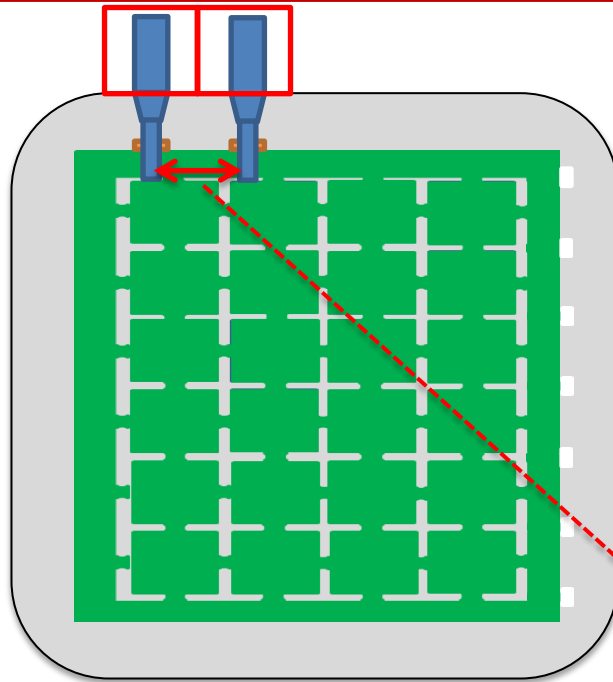

Production Information

It show related information, as product name, made quantity and cycle time,

Bit & Spindle Life information

It shows cutting distance for bit. When it reaches the nominated length, the program will go to use next section of bit , or notify for bit change.

Option- Dual Spindle System

A. Dual Spindle System

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

Two spindle distance: 43-113mm

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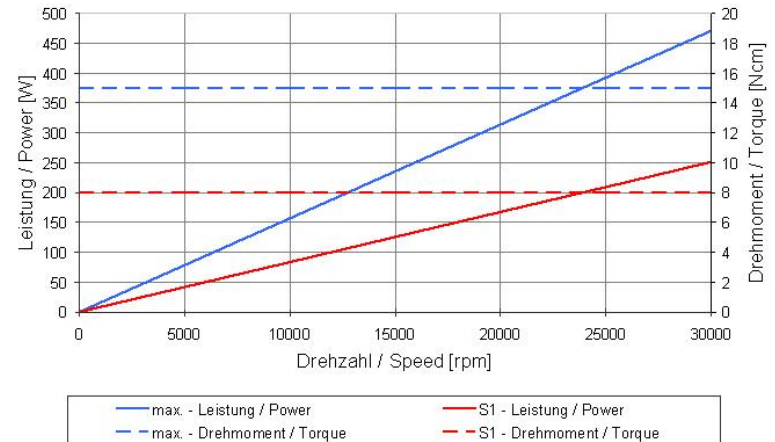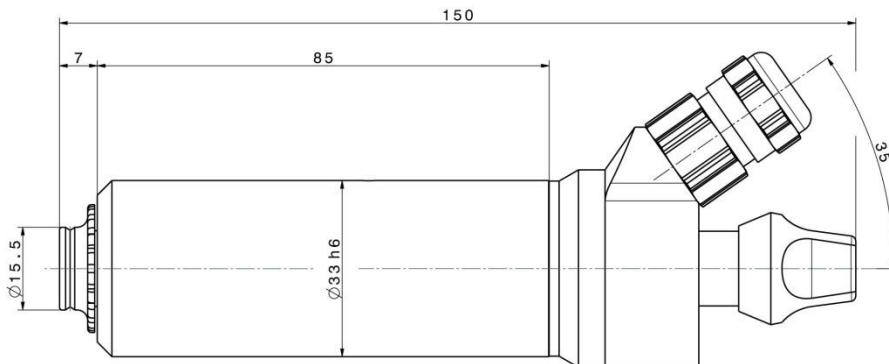265W Max.58,000rpm (Torque Max.4.5Ncm)

Option- Aluminum Board Cutting

B. Aluminum Board Cut System

Sycotec 4025DC-T spindle would be used for
aluminum board routing
Specs: 470W Max. 30,000rpm, Torque:.15Ncm
It is with higher power, lower rpm, and higher
torque, to meet the character of Aluminum board

Option- Auto Bit Change

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 reduces configuration time and maintenance related personnel costs.
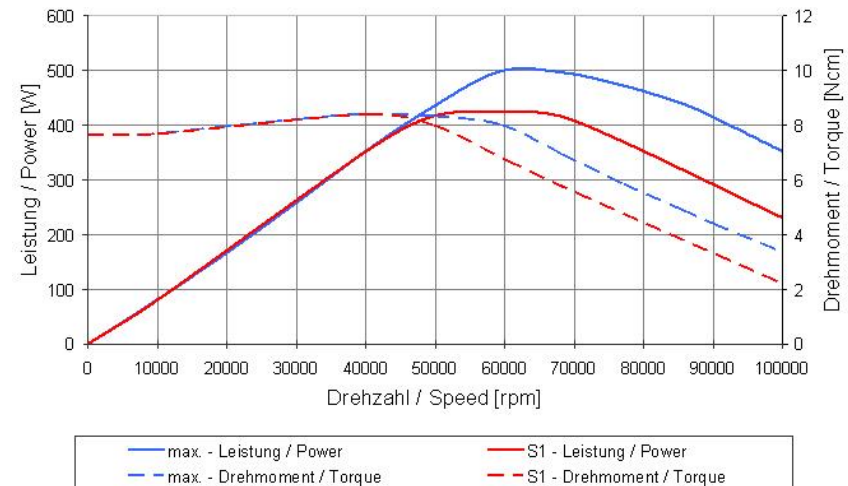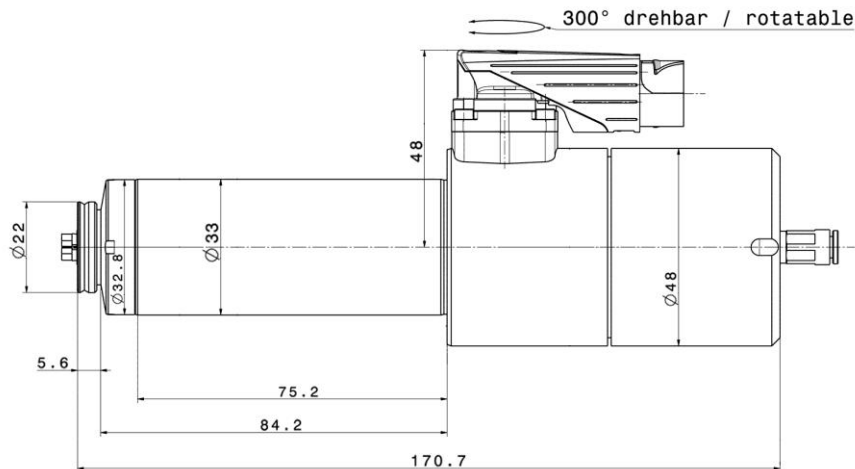
Automatically drops disused bit and takes a new bit

Left Table

Right Table
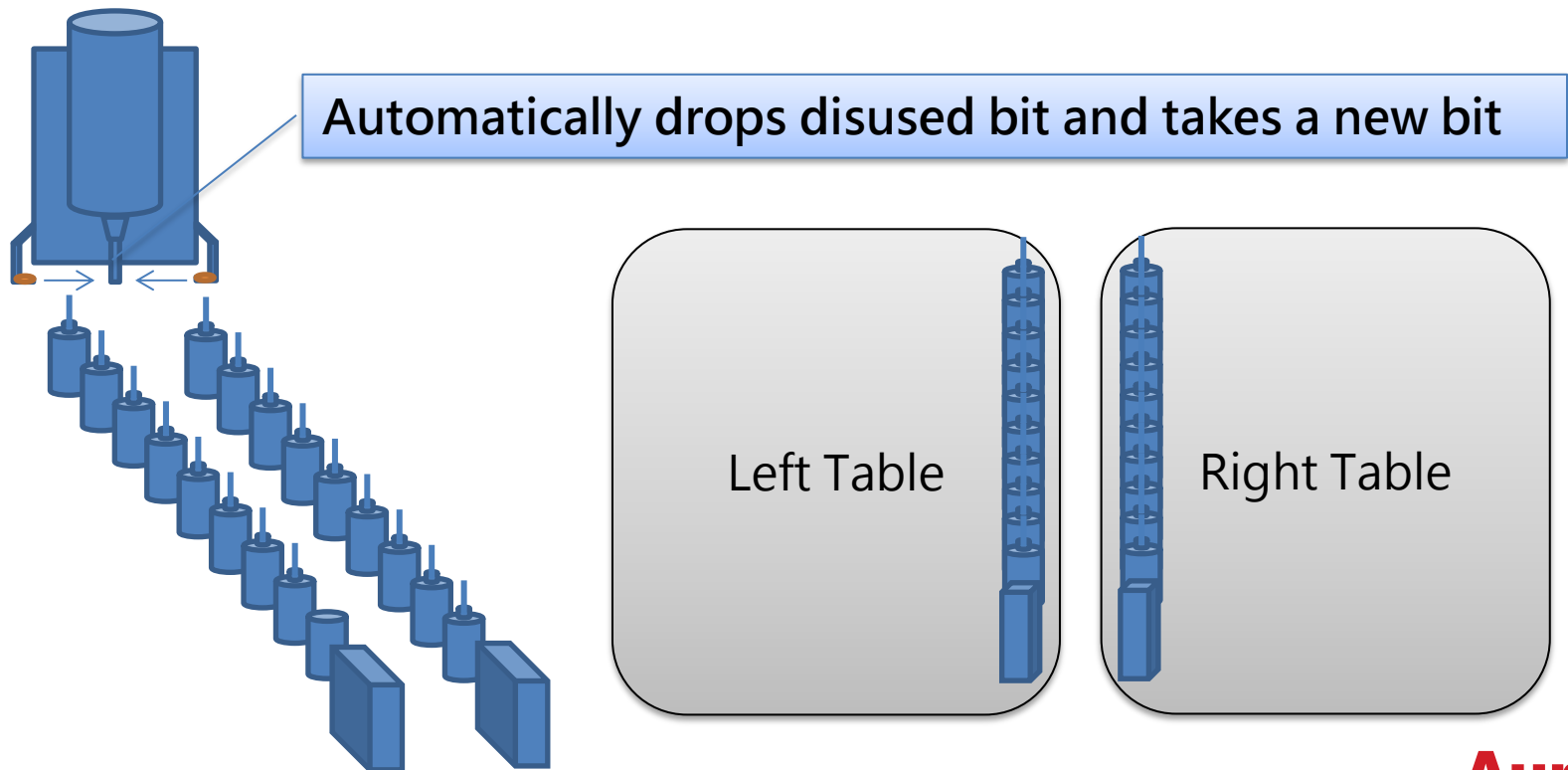
Option- Auto Bit Change

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)

Option- Product Traceability & MES

Production Traceability / MES Function with Barcode Reader

It would automatically record the data as manufacturing Date, Time, Serial Number, Product Name, Production Quantity, Production Cycle time & Operator ID. However it would need to equip barcode reader to enable the function


	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

R Table

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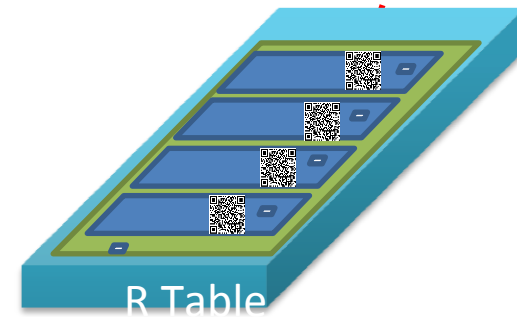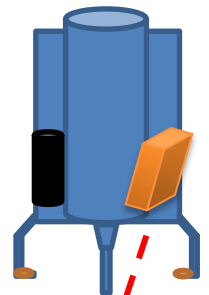
Option- Offline Program Editing

Offline Program Editing

User uploads DXF drawing into offline routing editing program, and complete the program editing on personal PC.
Then saves the program into USB then download the program to router.
It's simple & efficient.
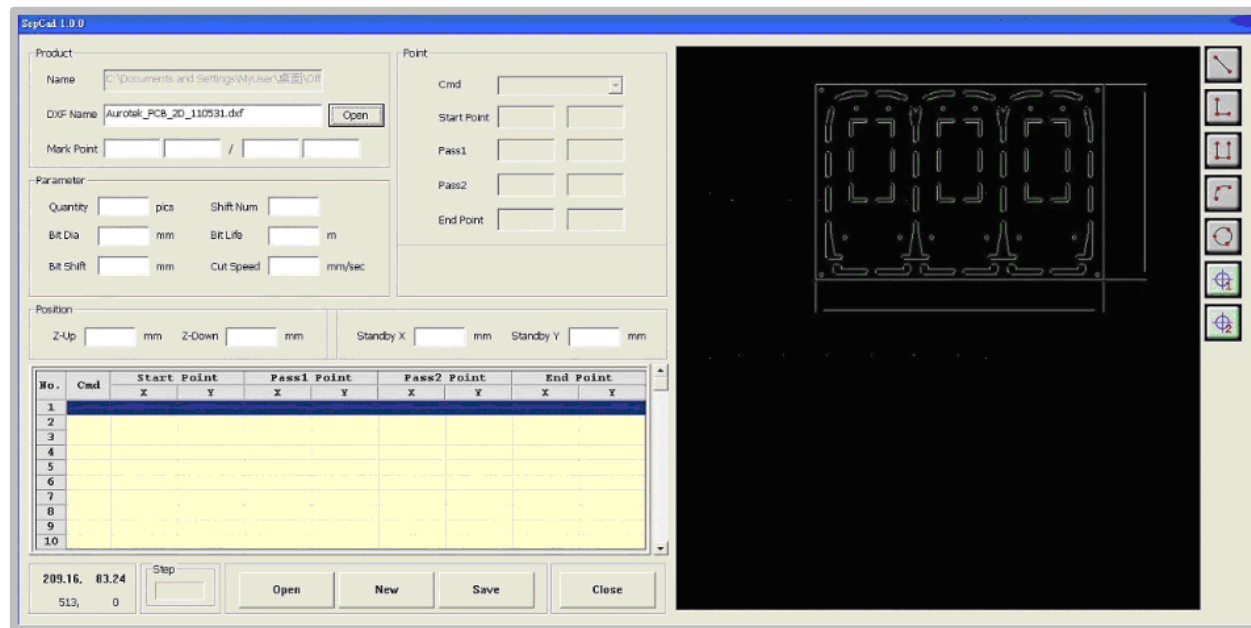
Other Options

Routing Bit Diameter Detection
Checking the bit diameter before each working.
To ensure using the correct bit for routing

UPS Support System (for IPC 30 minutes)
To prevent the suddenly power failure in factory.
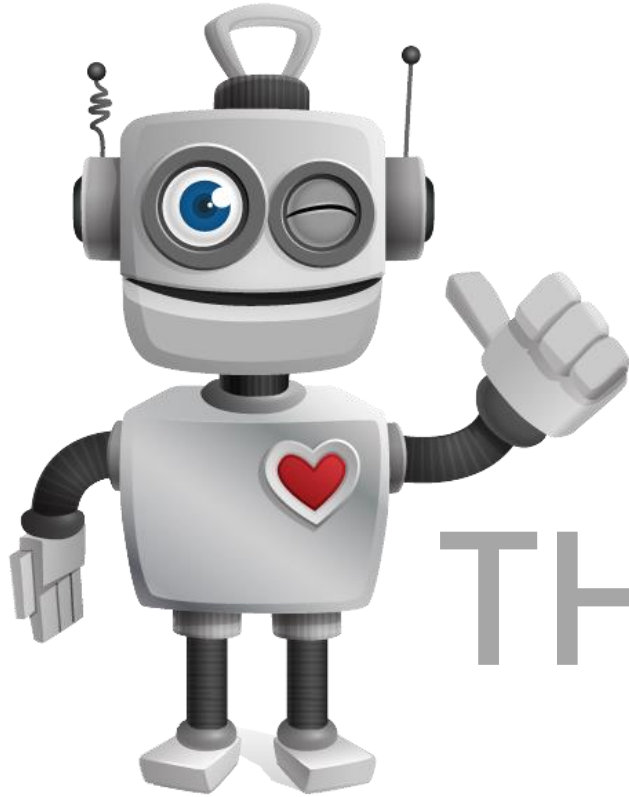
Spindle Speed Digital Adjustment
User could adjust spindle speed by operating software,
To use different speed for different PCB material

USB Backup System
USB keeps all original data and parameter.
User could backup router to original status if necessary

Global Customers

THANK YOU!

Aurotek®
A Complete Solution from One Source

AUROTEK CORPORATION