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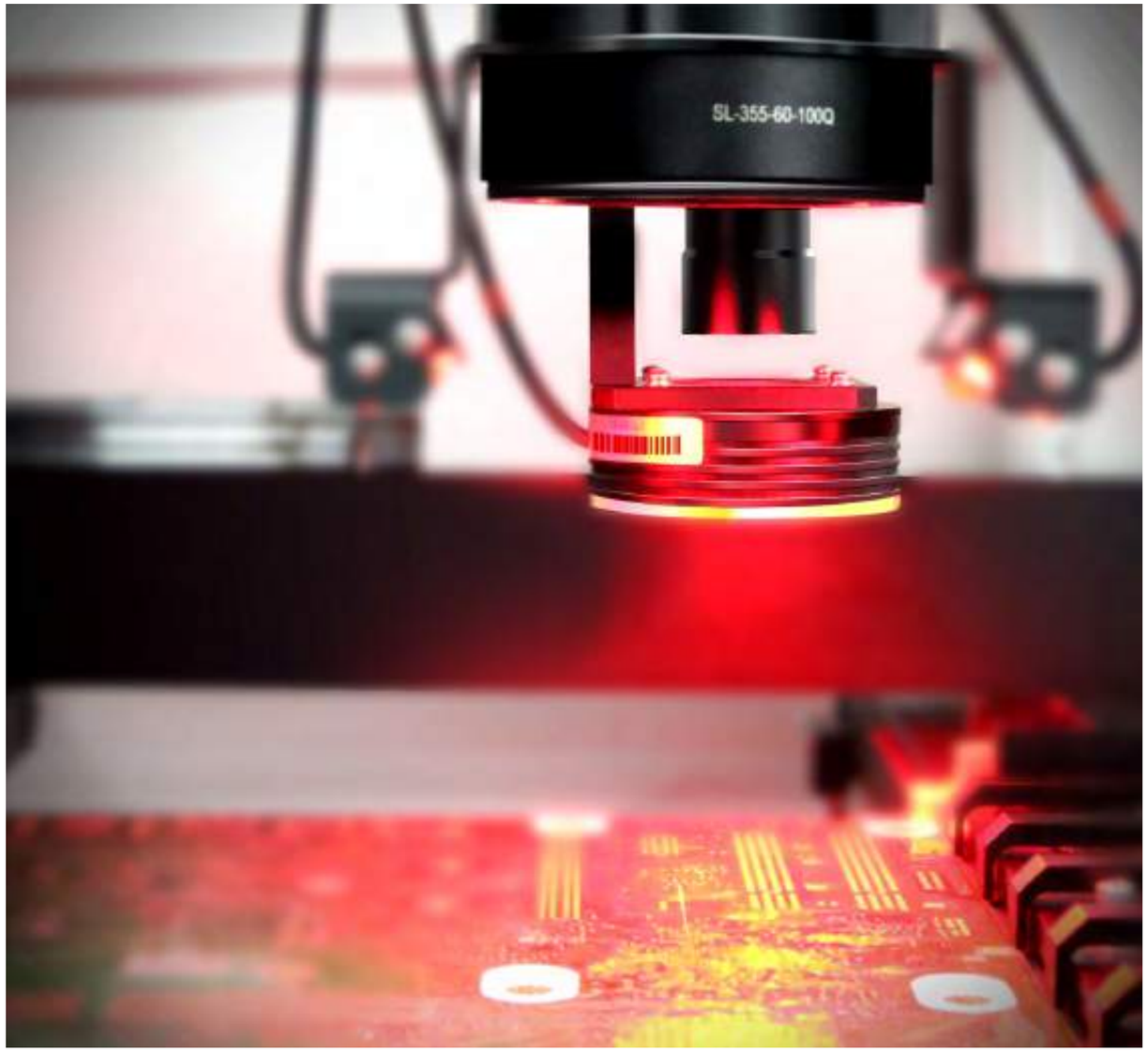


PCB and Cutting Products

Efficient Precision Automation

AMS ADVANCED MECHATRONICS SOLUTIONS, INC

ams-fa.com

With the development of printed circuit boards toward refinement, high density, and high performance, the precise non-contact and non-destructive processing characteristics of lasers have become more and more widely used in the PCB industry. AMS, Inc. provides the overall Solutions for cutting, marking and automation.

SMT

Laser application program

Focus on laser applications SMT factory, providing customers with laser endowed laser cutting and a sub-station plate type solving solutions, product range and rich laser configuration to meet the technology needs of different types of materials in the industry. We have abundant technical reserves, and establish strong cooperative relations with major internationally-known foundries. To achieve "high efficiency, low cost, and easy-to-use" manufacturing experience for customers is our goal.

Single and double head marking LCD LCB)

Offline online cutting (LBB LBA)

Double station cutting (LBD20U)

SMT-Single and double head marking

LCD LCB

Applicable to SMT production line, offline/online mode can be selected according to needs, automatic laser coding and reading detection can be realized through the precise positioning of equipment automatic transmission system and industrial vision system, and the process control of SMT enterprises in the production process can be realized.

Equipment characteristics

- Selection of world-class lasers with good beam quality, small heat affected area and high degree of refinement
- The coding function can support various general types of one-dimensional codes and two-dimensional codes, and can realize self-built online ratings, with a code reading rate of over 99.9%
- Self-developed puzzle software, friendly interface and easy to operate
- With different lasers, it is compatible with automatic marking of different materials such as green oil, white oil, black oil and metal shielding cover on PCB/FPC board
- Possess industry standard B ad Mark function, which can realize bad board skip or X board marking
- There are multiple processing methods such as single head/double head and double track for flexible selection
- Can be connected to MES system to realize data intercommunication and data anti-duplication functions
- The automatic track width adjustment function easily adapts to the processing requirements of various format products
- The equipment has a compact structure, small size, and easy to be embedded in various SMT production lines

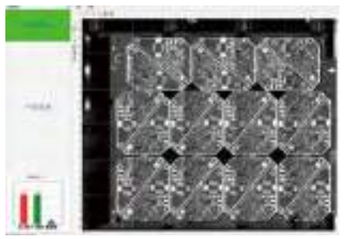
Device parameters

Item		Main technical parameters			
Laser system	Laser light source	Co2	Fiber	UV	Green
	Laser wavelength	10.6um	1064nm	355nm	532nm
	Average output power	5w / 10w / 20w			
Processing performance	Circuit board size	50x50 -510x460(mm)			
	Circuit board thickness	0 - 5mm(0 - 0.8mm Carrier required)			
	Repeat positioning accuracy	±0.1mm (CCD positioning)			
	Minimum width	0.1mm(DETAILED depending on material may be)			
	Minimum characters	0.5mm(DETAILED depending on material may be)			
	Support barcode type	Code128 / Code39 one-dimensional code DataMatrix / QR two-dimensional code			
	Into the plate directions	Left to right / Right to left			
Use environment	Power supply specifications	220V / 50Hz / 2.5KVA			
	Air supply specifications	0.5 - 0.7MP			
	Environmental requirements	Temperature 15-30°C / Humidity <50%			
	Overall size	1000mm(W) x 1600mm(L) x 1500mm(H)			

Sample display

SMT Professional marking software

AIM QR Code Rating Standard



Panoramic operation interface

High precision control system

SMT-Offline online cutting

LBB LBA

It is suitable for SMT production line. Offline/online design can be selected according to needs. Fully automatic laser cutting is carried out through the equipment high-precision control system and industrial vision system to realize the high-precision cutting requirements of SMT enterprises without dust and deformation.

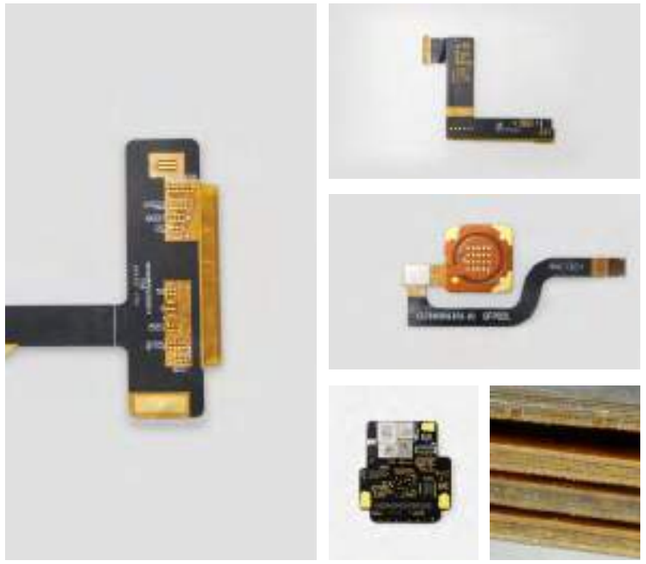
Equipment characteristics

- Selecting world-class lasers, with good beam quality and high cutting quality, can complete fine processing with a minimum line width of 10um (depending on the material)
- The equipment has a compact structure, small size, and easy to be embedded in various SMT production lines
- Professional cutting vision control system, compatible with the difference of incoming materials from different board factories, and realize batch quality control
- High cutting accuracy, overall cutting accuracy of 25um, high equipment stability
- Both the light path system and the working platform are made of marble, with good processing flatness and stable precision
- Can be connected to MES system to achieve data interoperability
- There are offline/online processing methods to choose from

Device parameters

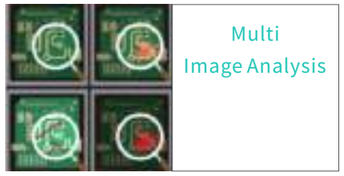
Item		Main technical parameters	
Laser system	Laser source	UV Laser	Green Laser
	Laser wavelength	355nm	532nm
	Average output power	15w / 20w / 40w	
Processing performance	Machining accuracy	±25um	
	Largest format	400x330mm	
	Support document format	DXF / GBR	
Use environment	Power supply specifications	220V / 50Hz / 2.5KVA	
	Environmental requirements	Temperature 15 - 30°C / Humidity<50%	
	Overall size	960mm(W) x 1600mm(L) x 1500mm(H)	

Sample display



SMT Professional software

One-click document import



AI deep learning

SMT-Double station cutting

LBD20U

Suitable for SMT production line, double-station platform cutting technology, 30% higher efficiency than single-station equipment , cost-effective investment, automatic laser cutting through equipment high-precision control system and industrial vision system, to achieve SMT enterprises without dust and deformation High-precision cutting needs.

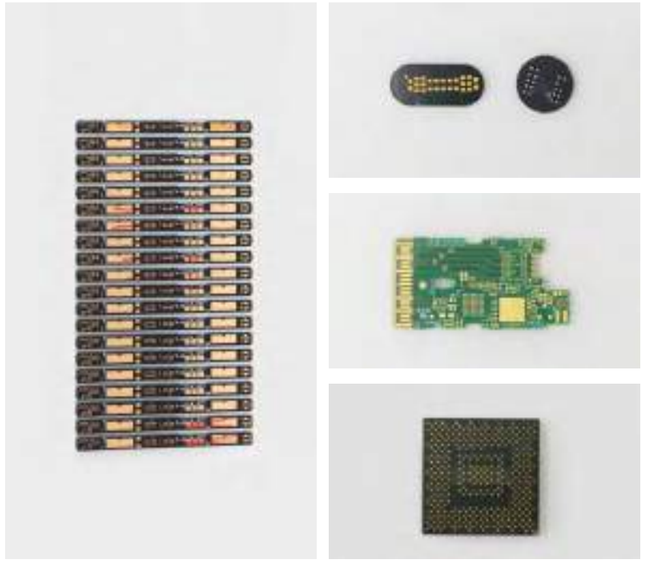
Equipment characteristics

- Selecting world-class lasers, with good beam quality and high cutting quality, can complete fine processing with a minimum line width of 10um (depending on the material)
- Professional cutting vision control system, compatible with the difference of incoming materials from different board factories, and realize batch quality control
- There are offline/online processing methods to choose from;Can be connected to MES system to achieve data interoperability
- Both the light path system and the working platform are made of marble, with good processing flatness and stable precision
- High cutting accuracy, overall cutting accuracy of 25um, high equipment stability
- The equipment has a compact structure, small size, and easy to be embedded in various SMT production lines

Device parameters

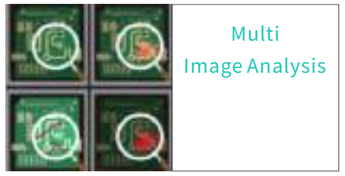
Item		Main technical parameters	
Laser system	Laser source	UV Laser	Green Laser
	Laser wavelength	355nm	532nm
	Average output power	15w / 20w / 40w	
Processing performance	Machining accuracy	±25um	
	Largest format	400x330mmx2	
	Support document format	DXF / GBR	
Use environment	Power supply specifications	220V / 50Hz / 2.5KVA	
	Environmental requirements	Temperature 15 - 30℃ / Humidity <50%	
	Overall size	1340mm(W) x 1230mm(L) x 1760mm(H)	

Sample display



SMT Professional software

One-click document import



AI deep learning

PCB

Laser application program

PCB product line keeps up with the development trend of intelligent manufacturing, to create intelligent plant one-stop-style solving solutions, reduce production costs for the PCB industry customers, improve product quality and production efficiency. At present, the integration of advantageous resources in the industry has been completed, and the entire process traceability management has been realized for many PCB companies.

Solder mask coding(LCE10G)

Coated copper coding(LCE100F)

IC carrier board defect identification (LCK10G)

PCB-Solder mask coding

LCE10G

It is mainly used for the marking of Panel code and PCS code on PCB/FPC finished products. The processing content includes two-dimensional code, text, graphics and other information to realize the information traceability of PCB/FPC finished products and help customers improve quality control capabilities

Equipment characteristics

- Can mark barcodes, two-dimensional codes, characters, graphics, etc., with a reading rate of over 99.9%
- Single-platform and dual-platform configurations are available for flexible choice
- It has the functions of self-checking after code-reading and double code detection to prevent coding errors
- It can be matched with different lasers and has good compatibility. It is suitable for marking the surface of various inks such as white oil, green oil and black oil on PCB/FPC boards
- Automatic loading and unloading operations reduce labor costs, and can be connected to the data system to automatically retrieve and upload data to reduce manual operation errors
- Set up an automatic full-page adsorption platform and a material cart with a limit structure to improve the accuracy and flatness of the product feeding, and ensure the processing accuracy and quality
- FIG directly into profile production marking program, 15 minutes to complete the production of the new program, easy to use

Device parameters

Item		Main technical parameters		
Laser system	Laser light source	Co2 Laser	Green Laser	Ultraviolet Laser
	Average output power	10W	10W	5W
	Field lens scanning range	110x110mm		
Main configuration	XY Working platform	XY Precision mobile platform		
	Vision system	Industrial CCD positioning and code reading system		
	Automatic loading and unloading system	Suction arm, loading and unloading trolley		
Processing performance	Processing size range	250x250mm - 550x650mm (can be customized)		
	Overall machining accuracy	±0.1mm		
	Processing board thickness	0.3mm - 5mm		
Use environment	Power supply specifications	220V / 50Hz		
	Environmental requirements	Temperature10 - 35℃ 、Humidity<65%		
	Overall size	3000mm(W) x 1800mm(L) x 1700mm(H)		

Sample display




PCB-Copper clad laminate coding

LCE100F

Provide PCB manufacturers with a complete set of full-process traceability solutions such as code assignment, code reading, data system, etc., to realize the traceability and control of the entire life cycle of PCB boards from raw materials to final products, and help customers realize intelligent manufacturing, improve product quality, and enhance enterprises Competitiveness.

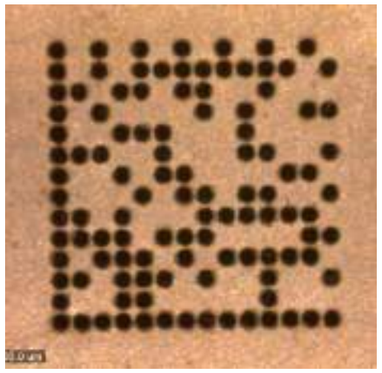
Equipment characteristics

- The design structure is reasonable, the work efficiency is high, offline/online models can be selected, and the production capacity of 8 pieces/min can be achieved
- Traceability platform management system, customer data can be associated with the system, binding the incoming information, processing work stations, equipment status parameters and other data, provide the basis for enterprises to build big industrial data
- Product coverage, may be implemented inner clad copper, the copper clad laminated different traceability requirements
- High degree of standardization, fast batch delivery

Device parameters

Item		Main technical parameters
Laser system	Laser type	Fiber
	Laser wavelength	1064nm
	Average output power	100W
	Field lens scanning range	100x100mm
Main configuration	Transmission system	Roller line transmission
	Positioning device	Mechanical positioning
	Focusing system	Automatic focusing
Processing performance	Processing size range	300x300mm - 630x730mm (Can be customized)
	Processing board thickness	0.05 - 4mm(Can be customizable)
	Capacity	8pcs / min(Subject to actual conditions)
Use environment	Power supply specifications	220V / 50Hz
	Environmental requirements	Temperature15 - 30°C / Humidity<65%
	Overall size	1000mm(W) x 1700mm(L) x 1700mm(H)

Sample display



PCB-IC carrier board defect identification

LCK10G

Used for automatic identification and laser marking of scrap units on carrier products , which facilitates efficient and accurate identification of subsequent processes , and improves the product yield and process efficiency of customer factories

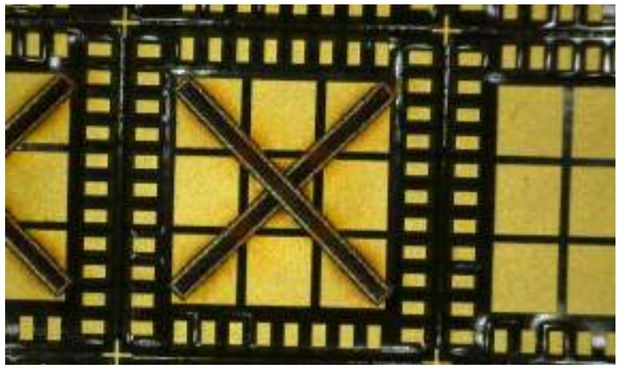
Equipment characteristics

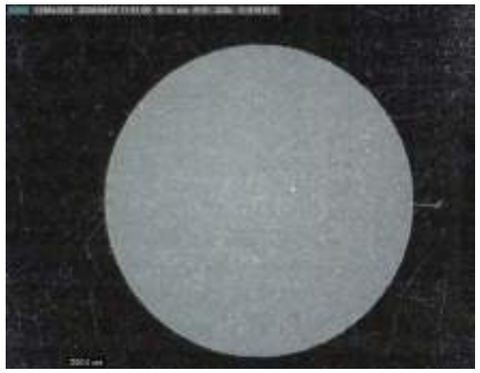
- Double-station operation to realize high-speed processing of bad board marks on IC substrate
- Configure energy monitoring system to ensure the stability of product processing effect
- It can automatically identify the front-end process mark , or connect to the customer system to directly obtain the location information of the scrap board for marking
- The piracy mechanism realizes double-sided processing of the product, no adjustment is required when changing materials, which improves production efficiency and ease of use
- Convenient and easy to use, complete new program production within 20 minutes, quickly switch products

Device parameters

Item		Main technical parameters
Laser system	Laser type	Green laser 532nm
	Average output power	10W
	Field lens scanning range	150x150mm
Main configuration	Working platform	Dual linear motor platform
	Vision system	Industrial CCD positioning and code reading system
	Condition monitoring	Laser energy monitoring system
	Automatic loading and unloading system	Loading and unloading drawer, vacuum adsorption system
Processing performance	Processing size range	50x70 - 120x300mm
	Mark processing accuracy	±0.01mm
	Overall machining accuracy	±0.05mm
	Processing board thickness	0.1mm - 1.2mm
Use environment	Power supply specifications	220V / 50Hz
	Environmental requirements	Temperature10 - 35℃ / Humidity<65%
	Overall size	2800mm(W) x 2000mm(L) x 2000mm(H)

Sample display





FPC

Laser application program

The FPC product line focuses on FPC industry applications and creates professional solutions for the industry's core process . 10 years of process technology accumulation, intelligent control, meticulous craftsmanship, to provide customers with more accurate and efficient products is our aim.

Single platform picosecond UV cutting
(LBP30UPM)

Automatic cover film cutting
(LBP15UPR)

FPC-Single platform picosecond UV cutting

LBP30UPM

Applicable to FPC board factories, can choose offline/semi-automatic mode according to customer needs, through manual loading and unloading or automatic loading and unloading of mechanical arms, and precise positioning of industrial actual systems, to achieve covering film (CVL), flexible plate (FPC) , soft and hard Combine the cutting and forming of the plate (RF) and the thin multilayer board, open the window, and open the cover to achieve the requirements of no blackening, no carbonized dust, and high precision.

Equipment characteristics

- **Performance**

  The cutting accuracy can achieve ±20um to ensure the cutting quality of the product

- **Ease of use**

  Achieve strategic cooperation with imported picosecond laser suppliers to ensure product quality and supply

- **Stability**

  Built-in laser power detection function,real-time monitoring of the stabilitu of the laser system

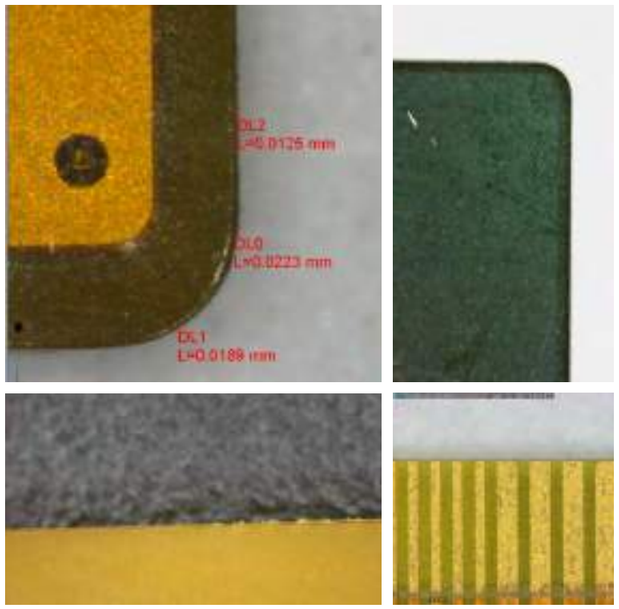
- **Intelligent**

  It can automatically identify the barcode of the ID card,import the production function of the material number,and has an automatic recording system for the production condition of the material number

Device parameters

Item		Main technical parameters
Laser system	Laser light source	Picosecond UV cutting
	Laser wavelength	355nm
	Average output power	15W / 30W
	Pulse Width	<10ps
	Maximum scanning range of galvanometer	50 x 50mm
Core configuration	Work platform	XYZ high precision linear motor
	Visual system	Industrial high precision CCD vision system
	Power monitoring system	Laser power real-time monitoring system
Processing performance	The largest format of the platform	650 x 550mm
	Compatible board thickness	0.01 - 1mm
	System processing accuracy (Chinese working conditions)	±20um
	Compatible material	PT / LCP / MPI / PI / Conductive adhesive / FR-4
	Support document format	DXF
Use environment	Power supply specifications	220V / 50Hz
	Environmental requirements	Temperature15 - 30D°C / Humidity<50%
	Overall size	1500mm(W) x 1700mm(L) x 1650mm(H)

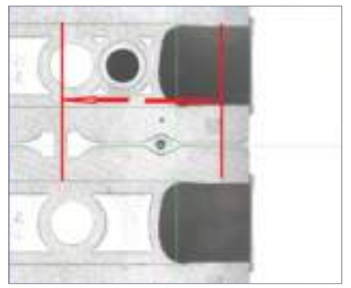
Sample display



FPC Professional cutting software

Automatic recognition and optimization of cutting path

Optional reading configuration



Non-linear expansion and contraction correction function

FPC-Automatic cover film cutting

LBP15UPR

It can realize two kinds of processing methods that are compatible with online and offline loading and unloading of cover film rolls. The equipment is composed of roll structure, XY linear motor platform, laser and optical path, CCD system, dust collection negative pressure system, etc.

The equipment is suitable for the FPC industry, and can choose offline/automatic cutting mode according to customer needs. The automatic laser cutting cover film can be realized by the automatic coil loading and unloading system of the equipment and the industrial vision system to achieve the requirements of non-stop production of FPC enterprises.

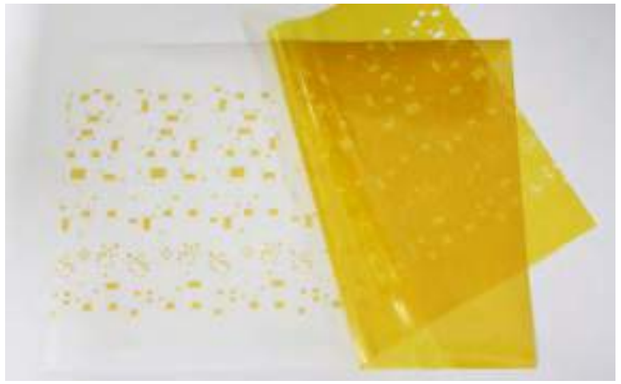
Equipment characteristics

- Can realize roll-to-roll, roll-to-sheet automatic cutting, realizing non-stop production
- With automatic calculation of the number of cut sheets, the equipment is easy to use
- Can realize CRM system connection, realize different account queue cutting function
- The high-precision gantry double-drive platform can realize the cutting accuracy of the whole machine：±20um

Device parameters

Item		Main technical parameters
Laser system	Laser type	Picosecond UV cutting
	Laser wavelength	355nm
	Average output power	15W
	Pulse Width	<10ps
	Field lens scanning range	50 x 50mm
Main configuration	Working platform	High precision gantry linear motor
	Vision system	Industrial CCD positioning and code reading system
	Power monitoring system	Laser power real-time monitoring system
Processing performance	The largest format of the platform	350 x 500mm
	Compatible board thickness	0.01 - 1mm
	System processing accuracy (Chinese working conditions)	±20um
	Compatible material	PT / LCP / MPI / PI / Conductive adhesive / FR-4
	Support document format	DXF
Use environment	Power supply specifications	220V / 50Hz
	Environmental requirements	Temperature15 - 30°C 、Humidity<50%
	Overall size	2300mm(W) x 1550mm(L) x 1650mm(H)

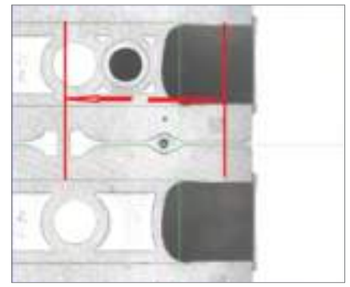
Sample display



FPC Professional cutting software

Automatic recognition and optimization of cutting path

Optional reading configuration



Non-linear expansion and contraction correction function

Precision cutting

Laser application program

The precision cutting product line focuses on the field of high-precision processing, and has a wealth of process accumulation in precision cutting applications in ceramic, metal, leather and other materials related industries. Facing the development direction of intelligent manufacturing, a series of mature solutions have been formed to significantly improve the production efficiency and product quality of customers. We are adhering to the guiding ideology of precision, and continue to provide customers wit quality products and services.

Fiber cutting machine(LCF0120)

Co2 cutting machine(LCC0130)

UV cutting machine(LCU0201)

Precision cutting-Fiber cutting machine

LCF0120

It is suitable for scribing, cutting, and drilling of various thin metal plates and micro-precision metals, mainly used in LED, precision machinery, semiconductor control devices, and 3C parts industries.

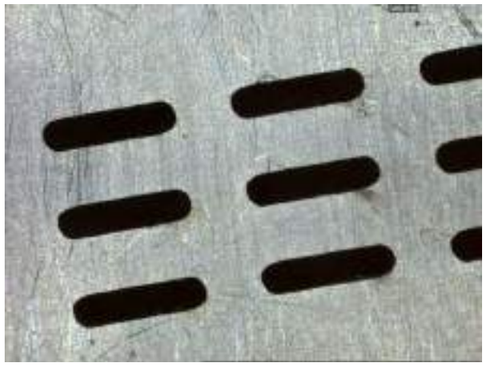
Equipment characteristics

- Select international first-class lasers, with good beam quality and high cutting quality, and can complete fine processing with a minimum line width of 50um (depending on the material)
- Professional cutting software, multi-level authority operation, convenient for production management
- The machine is integrally cast with high precision and stability
- Double screw rod, double motor drive system, effectively improve production efficiency, running speed can reach 1000mm/s
- High cutting accuracy, the cutting accuracy of the whole machine is ±25um;High stability, CPK>1.33
- The software has graphics nesting and sharp corner smoothing functions, which can realize high-speed cutting, punching and marking functions
- The optical path of the whole machine is conducted by optical fiber, the external optical path is maintenance-free, and the consumption of vulnerable parts is very small

Device parameters

Item		Main technical parameters
Laser system	Laser source	Fiber
	Laser wavelength	1064nm
	Maximum output power	150W
	Continuous output energy stability	≤3%
	Minimum focus spot diameter	>0.03mm
Processing performance	Maximum cutting thickness	3mm(depending on material availability)
	Linear motor table stroke	Standard 400x400mm,other strokes can be customized
	Positioning and repeat positioning accuracy	XY axis positioning accuracy ±0.006mm repeat positioning accuracy ±0.002mm
Use environment	Power supply specification	AC 380V / 50Hz / 6KVA

Sample display



Precision cutting-CO2 cutting machine

LCC0130

The equipment is suitable for the precision cutting and punching requirements of leather, acrylic sheet, PE material, PI/PET film, polarizer, explosion-proof film and other industries.

Equipment characteristics

- The machine is integrally cast with high precision and stability
- Professional cutting software, multi-level authority operation, convenient for production management
- Professional laser cutting software, with graphics nesting and sharp corner smoothing processing functions, product quality is improved
- Double screw rod, double motor drive system, effectively improve production efficiency, running speed can reach 1000mm/s

Device parameters

Item		Main technical parameters
Laser system	Light medium	Co2
	Maximum output power	100W
	Minimum focus spot diameter	≥0.2mm
	Continuous output energy stability	≤7%
Processing performance	Workbench stroke	500x500mm
	Positioning and repeat positioning accuracy	XY axis positioning accuracy ±0.02mm repeat positioning accuracy ±0.015mm
	Cutting product accuracy	≤±0.05mm(related to material)
	Cutting speed	1 - 200mm / s(determined by material)

Sample display






Precision cutting-UV cutting machine

LCU0201

This equipment is mainly used in leather, film materials, carbon paper and other soft material processing industries.

Equipment characteristics

- Split-In one- style alternatively, easily stringing
- The cutting seam is smooth and flat, and the heat influence is smaller than that of CO2 equipment
- Independent research and development of cutting software, strong editing ability
- High-precision linear motor platform realizes high-speed and efficient operation and effectively improves production efficiency
- Professional laser cutting software can realize high-speed drilling and cutting functions

Device parameters

Item		Main technical parameters
Laser parameters	Laser	Huaray Semiconductor End-pumped Laser
	Laser wavelength	355nm
	Nominal average output power	12W / 15W
	Pulse repetition frequency	20KHz ≤ F ≤ 200KHz
	Average power stability	<3%rms
Frequency parameters	Scanning speed	F=170mm，≤7000mm/s
Operating environment	System power supply	1.5KW / AC220V / 50Hz voltage fluctuation range±5% if it exceeds the fluctuation range, a voltage stabilizer device is required
	Grounding	Class D(ground resistance 100 ohms or lower)
	Ambient temperature	10-35°C,air conditioner must be installed when used outside the temperature range
Dimensions	width x length x height	640 x 1212 x 1712mm

Sample display