

XGRAF
■ T E C H N O L O G Y ■

Digital Cutting Machine Series

TPS

Established on Tradition,
Excellent on Quality.

Digital Cutting Machine X7

TPS

X7 digital cutting machine adopts independent developed professional cutting CAM software, with functions of tabletop compensation, automatic edge-finding and positioning, over cutting optimization, multi-task and multi-station cycle cutting, small vision positioning, large vision positioning, projection positioning, laser mapping positioning, cost estimation, file management, etc.

TPS cutting software supports the following file formats:

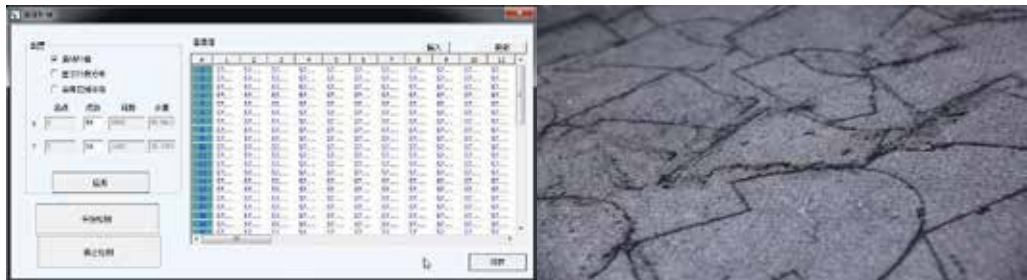


Vac-Sorb Almag alloy platform

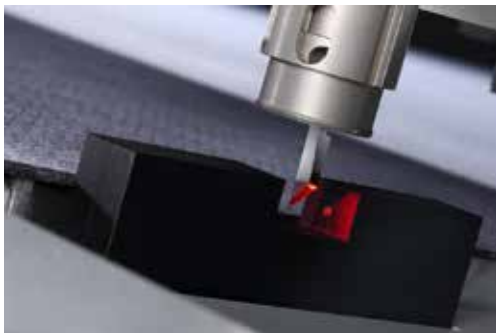
X7 digital cutting machine is designed with an advanced conveyor system to achieve continuous automatic material feeding, and the theoretical cutting length is unlimited. It adopts high- strength honeycomb aluminum adsorption tabletop with six- zone independent adsorption structure with good flatness and no deformation. It is equipped with cut- resistant 4mm thick imported felt of good permeability, good wear resistance and long service life. The machine works with a strong power vacuum pump to ensure superior adsorption during processing products.

Tabletop height compensation function

The flatness of the tabletop is detected by a high-precision distance detector, and the tabletop is corrected in real time by software to avoid the inconsistent cutting depth caused by the inconsistency between the tabletop and the tool drop, ensuring perfect cutting result.

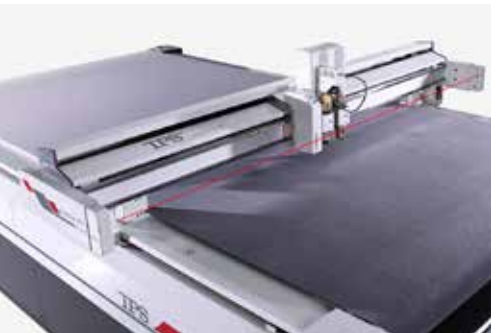


The detection of tabletop flatness done by a high-precision height detector and the function of automatic height compensation of dropping tool protect the tabletop and felt from damage.



Fiber laser tools calibrating device

Quick and easy automatic tool calibration system: Adopt fiber laser sensor to accurately detect the tool which greatly improves the efficiency of calibration.



Safety anti-collision mechanism

TPS digital cutting machine is equipped with a safety light curtain sensor and a mechanical anti- collision mechanism to prevent the device from damaging personnel during high-speed operation.

Authomatic edge-finding positioning function

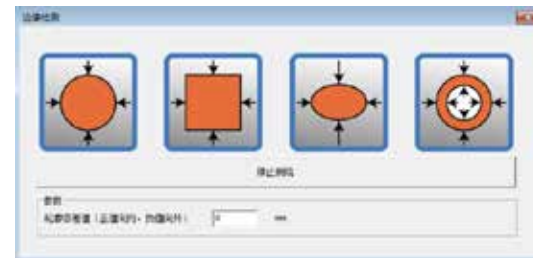
The CCD camera captures the image in real time, and the pattern deformation law is obtained by identifying registration marks, and the original contour pattern is optimized according to the deformation amount to get high accurate cutting result.

- A. Support many formats such as AI, EPS, DXF, PLT, PDF, JPG, TIF, TPS etc.
- B. Bitmap vectorization function, smoothing algorithm and mutation point modification.
- C. Recognize registration marks intelligently and distinguish the layer automatically according to the shape and the color of the graphic during importing the graphic.
- D. Shapes of registration marks such as circle, square or cross for users' choice.
- E. Precise positioning, accuracy of repeated positioning is within 0.1mm.
- F. The requirement of environment is not high, positioning can also be implemented in the case of insufficient light.



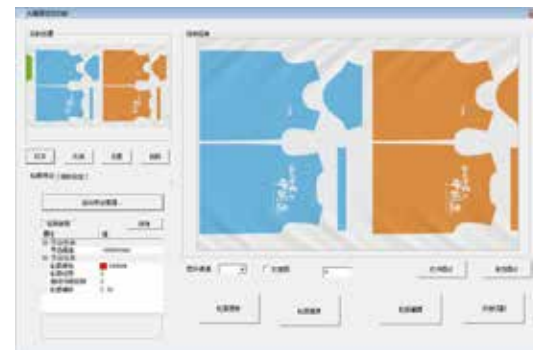
Laser mapping positioning function

Users can use the laser mapping and positioning function to map various shapes of the material, and the user can place the patterns to be processed into mapping range for precise cutting, which greatly improves the utilization of the material.



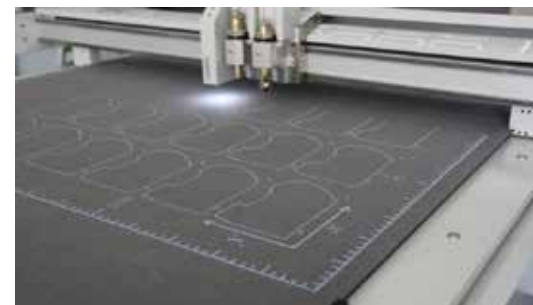
Large Vision Positioning System

Since the flexible material may be deformed by the factors such as temperature, humidity, ink, pressure, stretching, wrinkles, etc., the original document outline cannot be used to accurately cut the actual pattern, we use the function of the high-precision camera's real-time shooting and contour extraction, thus to accurately identify and extract real-time work piece image contours for precise nesting. It is especially used in advertising printing and garments industries.



Projection Positioning System

In actual cutting process, it is difficult for users to accurately align the material with the cutting pattern. This system can project the cutting pattern on the processing table with 1:1, which is convenient for users to feed and align the material. The user can also place the irregular material into the projection area for the alignment cutting, which greatly improves the utilization of the material.



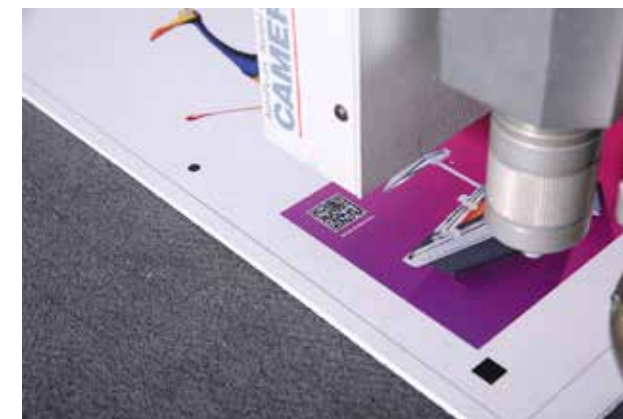
Prevent over-cutting function

Preventing inner angles from over-cut, recovering graphic's outline maximally.



File Management System

X7 CAM software for sealing industry can manage the processed documents including file name, processing time, quantity, materials, batches, etc., and generate barcode or QR code, which can be quickly called out by scanning code. It is convenient for future re-processing. The management of historic processed documents greatly facilitates users for operation.



Configurations and function selection

○ Standard configuration ● Optional configuration

CONFIGURATIONS	○ Main frame
	○ Laser tool calibration system
	○ Double sides safety anti-collision device
	○ Safety light sensor system
	○ Automatic feeding device
	○ Air pump
	● Head □ Single head □ Double heads □ Three heads
	● Independent milling system (including imported spindle and vacuum cleaning system)
	● Overhead camera
	● Projector
FEATURES	● Tools
	○ Standard control software
	○ Tabletop height compensation function
	○ Automatic edge-finding and positioning function
	○ Prevent over-cutting function
	○ Multi-task and multi-station cycle cutting function
	○ File management system
	● Small vision positioning system
	● Large vision positioning system
	● Projection positioning system
	● Laser mapping positioning function
	● Parametric drawing modules (seals and gaskets industry)
	● National standard database (seals and gaskets industry)
	● Cost estimation template (seals and gaskets industry)

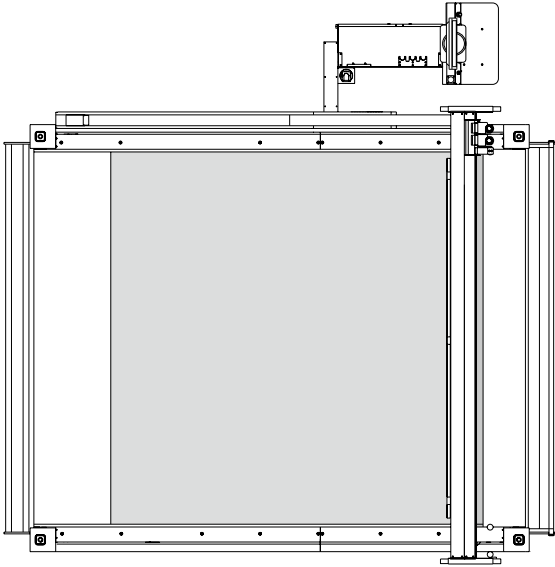
Main technical parameters

ITEM	PARAMETER
EQUIPMENT POWER	2.5kw
VACUUM PUMP POWER /	7.5/8.6 kw
CAPACITY /	380V 3 phase
OVERALL DIMENSION /	4040x3273x2630mm
WORK AREA /	1600x2500mm
MAX MATERIAL SIZE /	1700x3000mm
MAX MATERIAL PROCESSING HEIGHT /	35mm
BEAM HEIGHT /	60mm
MAX PROCESSING SPEED /	72m/min.
SERVO MOTOR QTY. /	6pcs for 2 cutting heads, 7pcs for 3 cutting heads.
WEIGHT/	1500Kg

Models and working area of X series

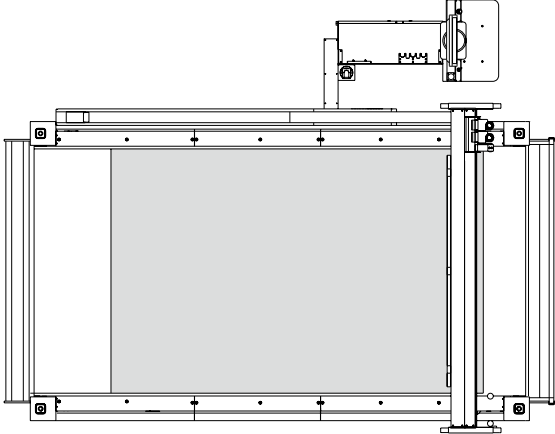
X9

Working Area:
3200 × 3200mm



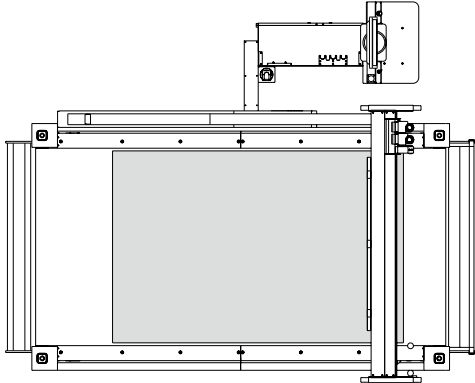
X8

Working Area:
2100 × 3200mm



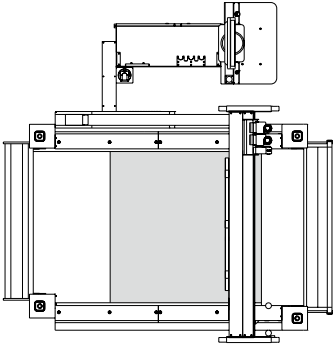
X7

Working Area:
1600 × 2500mm



X3

Working Area:
1300 × 1300mm





Independent milling system
(including imported spindle
and vacuum cleaning system)

It can cut acrylic, aluminum composite panel and
MDF, etc. in 20mm thickness.



Universal tool module

Universal tool module
and tool unit



Non- oscillating tool

Applicable to cutting a wide variety of flexible
material less than 3mm thickness.



Multi-angle V-Cut tool

It can make V-cut angles of 15°, 22.5°, 30°
and 45° for cardboard less than 20mm thickness



Creasing tool

Creasing tools are used in packaing industry for
making cartons and boxes of corrugated board,
cardboard and pp hollow board, etc.



Kiss-cut Tool

Applicable to all kinds of stickers, Vinyl,
engineering reflective film, etc.



Ultra-frequency electric
oscillating tool

Applicable to cutting all kinds of corrugated,
cardboard, KT board, gray board, composite
material, etc.



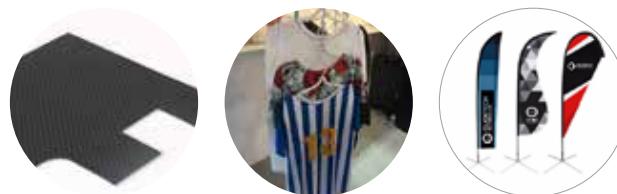
Ultra-frequency pneumatic
oscillating tool

Applicable to cutting seal parts and gaskets
material such as asbestos board, asbestos
free board, PTFE, rubber board, fluorine
rubber board, silica gel board, graphite board,
graphite composite board, etc.



Wheel cut tool

Applicable to cutting wide variety of flexible
material such as UV fabric, carbon fabric,
glass Fabric and textiles, etc.



MULTI-FUNCTIONAL
CNC ROUTER

C2513Z

TPS

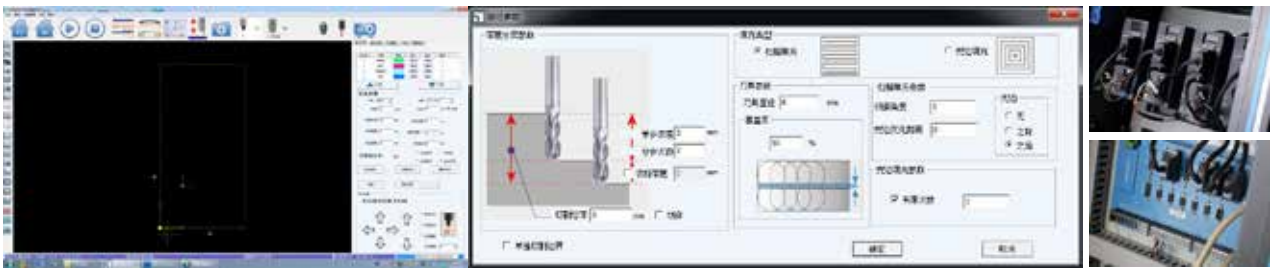
TPS CNC router model C2513Z is the latest developed engraving and cutting intelligent equipment, which integrates carving, cutting and multi-functional vision positioning . The equipment is designed with the structure of industrial steel machine bed and the aluminum gantry. The machine bed is treated by vibration aging technology, the processing surface and the installation holes of which are all processed by the precise gantry milling machine by once. The router is equipped with high-speed water-cooled spindle, ultra-frequency electric oscillating knife, CCD visual positioning system and vacuum cleaning system. With international high performance motion control system and TPS independent developed and professional CAM software for carving and cutting, the machine has advantages of simple and convenient operating, high speed, high precision and perfect effect of dust collection. It is widely applied in advertising and sign industry, printing and cutting industry and other industries. Its application materials is KT board, PVC board, acrylic sheet, MDF, aluminum, copper, aluminum composite panel, plastic, carbon fiber composite materials,PC sheet, soft film, vinyl, magnetic sticker and so on.

TPS cutting software supports the following file formats:



MAIN TECHNICAL PARAMETERS			
ITEM		PARAMETER	
WORK AREA	1300x2500mm	REPEAT POSITION ACCURACY	±0.05
EQUIPMENT POWER	3.5kw	MOVING AXIS QTY	4 Axis
TOTAL SPINDLE POWER	2.2Kw	SERVO MOTOR QTY.	5pcs
VIBRATION FREQUENCY OF EOT	14000rpm	CAPACITY	AC380V 50Hz(3 phase)
VACUUM PUMP POWER	7.5 kw	OVERALL DIMENSION	2300x3200x1750mm
MAX PROCESSING SPEED	72m/min.	WEIGHT	1000Kg

TPS high speed cutting system



C-2513Z is a machine integrating visual positioning, carving and cutting, which is with new mechanical design, precision processing and strict assembly, completely representing different from the traditional. Moving parts adopts screw, guide rail, grinding grade rack and pinion and ac servo motor of all imported. Control system adopts high speed motion control system and TPS independent developed high speed engraving software, with the help of which, there is no need to edit by third-party software before cutting. Built-in multiple cutting methods, it has features of quick speed, good stability and perfect performance. Its free running speed can reach 72 m/Min and the feeding speed is 8 ~ 15 m/Min. It not only provides users with satisfying experience, but also greatly improves the processing efficiency.

Strong vacuum cleaning system

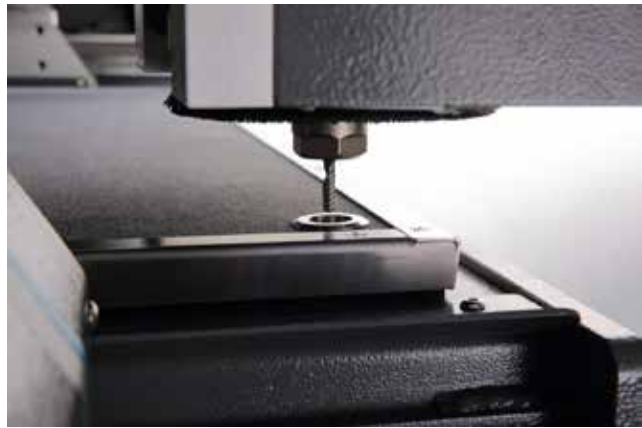


Due to unique design of vacuum cover and suction pipe, chips can be removed easily only by an ordinary vacuum cle which saves both space and energy.aner with small power,

Small Vision Positioning System



Small vision positioning system can locate and cut accurately by shooting the registering marks on workpieces with the hd CCD camera. It can achieve searching the registering marks fast, positioning precisely and controllable repeated positioning accuracy within 0.1mm, so as to meet the requirements of users for high-precision nest cutting.



Alignment System

It adopts contact tool alignment device and tool alignment method with unique tool alignment system of TPS. Users should set material thickness, then directly operate the machine for carving milling and cutting without manual tool alignment , which has been completed automatically by software. It is safe and fast.

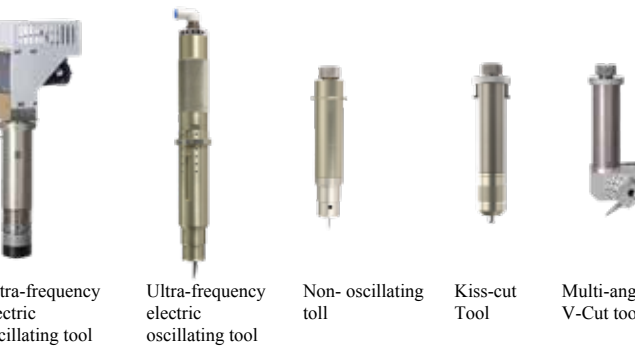


Design of Strong Vacuum Adsorption Platform

Designed with brand new adsorption tabletop piping system, partition setting and honeycomb tabletop covered with imported felt, it has advantages of perfect flatness, good permeability and strong suction, which effectively prevents workpieces from moving in process of cutting.



A wide variety of optional tool units as following



Smart Cutter S9

TPS

High performance control system

High precision lead screw drive

Asynchronous control with double cutting heads,
meanwhile cut, punch and draw

HD projection image, working with double projectors

Automatic material multi-layer feeding and processing



Smart Cutter S9

TPS

Smart cutter model S9-B2/1670 is a new generation of efficient intelligent cutting production line which adopts high rigidity heavy table and precision lead screw drive, double crossbeam and double cutting heads to realize cutting, punching and drawing in one. It has advanced technology features of automatic smart typeset, automatic continuous material feeding, perfect seamless cutting at joint position during paging cutting, asynchronously cutting different patterns at the same time, and continuously processing if power off happens. It has advantages of low operating noise, fast calculation speed of main control chip, high cutting accuracy, time and material saving, and small machine footprint, which applies to intelligent mass-cutting in industries of garments, sofa, digital printing, advertising, curtain, luggage, shoes and others.



MAIN TECHNICAL PARAMETERS

OVERALL DIMENSION	4500×2415×2020mm	DRIVE SYSTEM	Servo motor, Linear guide and Synchronous belt drive
WORK AREA	1600×700mm	NUMBER OF MOTOR	9 Axis
WORK PLATFORM	Aluminum alloy honeycomb platform and conveying carpet	FORMAT OF SUPPORTED FILES	AI, EPS, DXF, PLT, PDF, JPG, TIF, TPS
MAX MATERIAL PROCESSING HEIGHT	≤10mm Depending on different material	EQUIPMENT POWER	4.5Kw
BEAM HEIGHT	30mm	VACUUM PUMP POWER	11Kw
MATERIAL FIXATION METHOD	Vacuum adsorption	CAPACITY	380V/50Hz (3 PHASE)
MAX PROCESSING SPEED	72M/Min.	NET WEIGHT	2200Kg
POSITIONING METHOD	Projection positioning	APPLICATIONS	Applied to a wide variety of flexible material used in advertising, luggage, shoes, garment and automotive interior and other industries
REPEATABLE CUTTING ACCURACY	±0.2mm		

TPS cutting software supports the following file formats:



Customized cutting modules of this machine acceptable. Please contact our sales person or authorized distributors for further information. The information in this brochure is for reference.

Configurations of the equipment



1. High performance motion control system and TpsCut-CAD cutting software support not only asynchronous cutting, punching and drawing with double heads with high speed and accuracy, but also function of intelligent typeset, automatic material feeding, perfect seamless paging cutting.



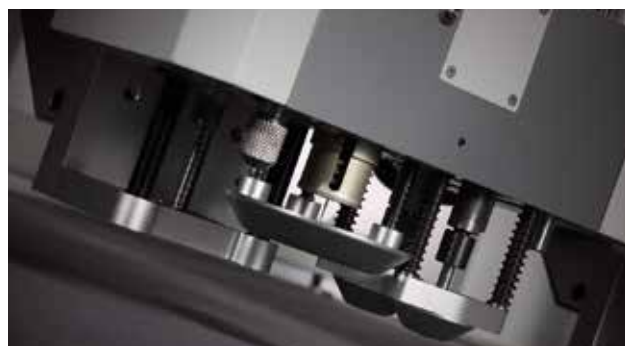
2. Work with double protectors to get projecting images more clear. The workpieces of different specifications can be distinguished with different colors in order to make it easy for users to position cutting and sort out finished workpieces.



3. Controlled with double crossbeams and double heads, integrated multi-function cutting head can cut, punch and draw.



4. Aluminum alloy cutting head has structure of double crossbeam, adopts servo motors control and screw drive with high precision to realize light load operation, high speed and low noise.



5. Curved material pressure tray realizes cutting material more flatly and precisely, lower resistance, without indentation and nicer workpieces.



6. Set with light curtain safety sensor in the front of table, which is to prevent hurting personnel when the equipment is running.

1.Intelligent typesetting

Designers can set QR code and barcode for cutting file and edit cutting patterns with TPS software program, get the reasonable typesetting with intelligent typesetting. Software can lay material automatically according to the size of finished typesetting.

2. Automatic laying material

As requirement of typesetting, multi-lay and feed material automatically, 10 layers max., which saves labor time of manual feeding and laying material and improves the production efficiency.

3.Auto cutting

Oscillating knife cuts material of leather and fabric with features of high cutting speed, high precision, smooth cutting edge, no yellowing or charring, no dust, no smoke, no peculiar smell, more green. Supporting multi-layer cutting for various kinds of materials, self-developed TPS pneumatic oscillating tool has characteristics of high frequency, high strength and long amplitude stroke and it can cut small marks rapidly and perfectly. Max. cutting thickness is 10mm, The production efficiency is 4-6 times higher than that of manual labor.

4.Auto punching

Die punching technique controlled by servo motor realizes precise positioning and punching in different size and shapes through replacing the punching molds.

Four punch heads as standard

- Conventional aperture selection: 2.0/2.5/3.0/3.5/4.0/4.5mm (used for materials of aperture within 10mm)
- Unconventional aperture selection: 1.5/1.8mm (used for materials of aperture within 4mm)
- Customized aperture selection: 1.0/1.2mm (used for materials of aperture within 2mm)

5.Auto drawing

The drawing part is with imported high speed spray nozzle and varnishing ink for drawing position marks without printing plate to get high efficiency, high precision, save labor, save ink and reduce environment pollution caused by screen plate cleaning.

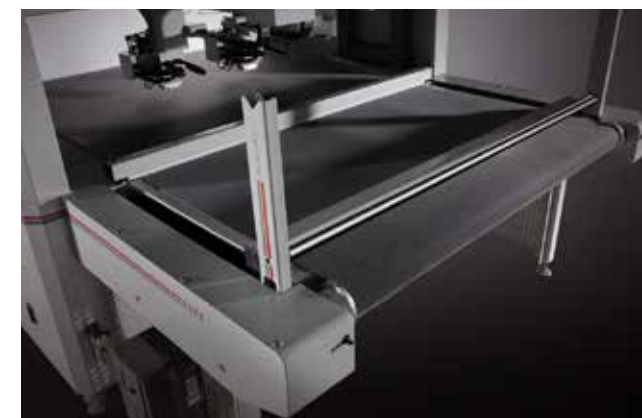
1. Paving

2. Cutting

3. Punching

4. Print

5.Receiving



5. Automatic alternating feeding device



6. Ten layers roll material feeding stand

Digital Cutting Machine S7

TPS



Smart Cutter model S7 adopts independently developed CAM cutting software and intelligent nesting typesetting software. It is equipped with oscillating knife, double circle puncher, spraying nozzle and other tools, which can complete cutting, punching and spraying line at once. Quick replacement of tool module makes different tools, blades and punching needles changed easily and conveniently, which helps enterprises greatly improve the production efficiency. Users can also select large visual system and projector as optional parts to meet their own production needs.

Compared to traditional die punching cutting and CO2 laser cutting, S7 Smart Cutter needs no mold and saves time and labor with its features of precisely cutting samples, smooth edge without jags, no yellowing and charring, more environmental protection without dust, smoke or peculiar smell, easy maintenance, low cost. It enormously shortens sample development cycle for users, solve the problem of hardship of product proofing and small batch order production.

TPS cutting software supports the following file formats:



MAIN TECHNICAL PARAMETERS

OVERALL DIMENSION	2350×2385×1910mm	DRIVE SYSTEM	Servo motor, Linear guide and Synchronous belt drive
WORK AREA	1600×700mm	NUMBER OF MOTOR	5
WORK PLATFORM	Aluminum alloy honeycomb platform and conveying carpet	FORMAT OF SUPPORTED FILES	AI, EPS, DXF, PLT, PDF, JPG, TIF, TPS
MAX MATERIAL PROCESSING HEIGHT	≤10mm (Depending on different material)	EQUIPMENT POWER	2.5Kw
BEAM HEIGHT	40mm	VACUUM PUMP POWER	7.5Kw
MATERIAL FIXATION METHOD	Vacuum adsorbtion	CAPACITY	380V/50Hz (3 PHASE)
MAX PROCESSING SPEED	72M/Min.	NET WEIGHT	1100Kg
POSITIONING METHOD	PROJECTION POSITIONING AS OPTIONAL PART	APPLICATIONS	Applied to a wide variety of flexible mateiral used in advertising, luggage, shoes, garment and automotive interior and other industries
REPEATABLE CUTTING ACCURACY	±0.2mm		

Digital Cutting Machine S6

TPS



Digital cutting machine model S6 adopts independently developed CAM cutting software and intelligent nesting typesetting software. It is equipped with oscillating knife, double circle puncher, spraying nozzle and other tools, which can complete cutting, punching and spraying line at once. Quick replacement of tool module makes different tools, blades and punching needles changed easily and conveniently, which helps enterprises greatly improve the production efficiency. Users can also select large visual system and projector as optional parts to meet their own production needs. Compared to traditional die punching cutting and CO2 laser cutting, Digital cutting machine model S6 needs no mold and saves time and labor with its features of precisely cutting samples, smooth edge without jags, no yellowing and charring, more environmental protection without dust, smoke or peculiar smell, easy maintenance, low cost. It enormously shortens sample development cycle for users, solve the problem of hardship of product proofing and small batch order production.

TPS cutting software supports the following file formats:



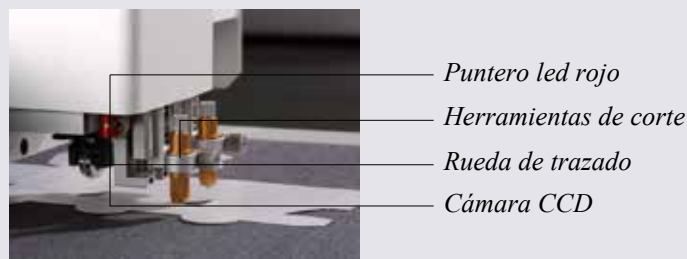
MAIN TECHNICAL PARAMETERS

OVERALL DIMENSION	1785×1375×1300mm	DRIVE SYSTEM	Servo motor, Linear guide and Synchronous belt drive
WORK AREA	1000×700mm	NUMBER OF MOTOR	5
WORK PLATFORM	Aluminum alloy honeycomb platform and conveying carpet	FORMAT OF SUPPORTED FILES	AI, EPS, DXF, PLT, PDF, JPG, TIF, TPS
MAX MATERIAL PROCESSING HEIGHT	≤10mm (Depending on different material)	EQUIPMENT POWER	2.5Kw
BEAM HEIGHT	30mm	VACUUM PUMP POWER	2.2Kw
MATERIAL FIXATION METHOD	Vacuum adsorbtion	CAPACITY	220V/50Hz (Single phase)
MAX PROCESSING SPEED	72M/Min.	NET WEIGHT	450Kg
POSITIONING METHOD	PROJECTION POSITIONING	APPLICATIONS	Applied to a wide variety of flexible material used in advertising, luggage, shoes, garment and automotive interior and other industries
REPEATABLE CUTTING ACCURACY	±0.2mm		

Mesa de corte Digital automática S2

La mesa de corte digital TPS modelo S2 adopta un diseño de estructura integral y compacta que facilita su instalación aún en espacios reducidos. Posee un sistema de alimentación de pliego por succión con bandeja de elevación automática. Esta provista de herramientas que permiten realizar procesos de medio corte, corte, trazado y marcado en forma rápida y precisa. El software de aplicación es muy sencillo de utilizar, con instrucciones intuitivas de un solo paso, solo presione start para iniciar el proceso. No requiere seteos complicados ni altos conocimientos técnicos para manejarla. Especialmente diseñada para realizar muestras, pequeños y medianos lotes de producción personalizados, propios de la impresión digital, señalética e industria del packaging y etiquetas.

TPS



Cabezales de corte y trazado.

- 1. Rueda de trazado con accionamiento neumático con presión ajustable hasta 0,4 MPa.
Los efectos de trazado son claros y permiten un perfecto plegado, cartulina y materiales superiores a 400 gr. pueden ser fácilmente procesados.
1.2 Equipado con dos set de herramientas de corte.
El usuario puede setear diferentes presiones y profundidades de corte respectivamente según necesidad del material.
1.3 Sistema de detección de borde y posicionamiento con iluminación led aseguran que la cámara HD CCD lea con precisión marcas de registro sobre materiales aún con poca iluminación.
- 2. Alimentación de material con elevación automática.
Acomodar el material hacia la posición “home”, el dispositivo levantará automáticamente la bandeja de carga de material a la posición del sensor con luz roja.
El dispositivo de alimentación soplará al material y luego lo transportará hacia la mesa de proceso utilizando las ventosas de succión, evitando eficazmente la doble alimentación.
- 3. Mesa de corte
3.1 La TPS S2 utiliza una mesa de aluminio panel de abeja de aviación que aseguran cortes de alta precisión.
3.2 La banda de fieltro de buena permeabilidad transporta automáticamente el material procesado a la bandeja colectora.
- 4. Recolección de producto terminado.
La bandeja colectora se encarga de recolectar el material procesado automáticamente sin intervención del operador.

El software de core TPS soporta los archivos en los siguientes formatos



PARÁMETROS TÉCNICOS PRINCIPALES

DIMENSIONES:	2310×880×1150mm	SISTEMA DE CONTROL:	Servo motor, Stepper motor, Linear guide and Timing belt
ÁREA DE TRABAJO:	400×600mm	CANTIDAD DE MOTORES :	4
PLATAFORMA DE TRABAJO:	Aluminio panel de abeja y banda de transporte	FORMATOS SOPORTADOS	AI, EPS, DXF, PLT, PDF, JPG, TIF, TPS
ESPESOR MÁXIMO DE MATERIAL:	>1mm Dependiendo del material	POTENCIA EQUIPO	1.0Kw
ALTURA MÁXIMA ELEVACIÓN:	20mm	POTENCIA BOMBA DE VACÍO	1.5Kw
MÉTODO FIJACIÓN MATERIAL:	Absorción por vacio	REQUERIMIENTO ELÉCTRICO :	220V/50Hz
VELOCIDAD MÁXIMA DE PROCESO:	72m/Min.	PESO NETO	250Kg
MÉTODO DE POSICIONAMIENTO:	CCD cámara, Led Rojo	APLICACIONES :	Papel, tarjetas, Bopp, Vinilo, etiquetas y material reflectivo utilizados en packaging, señalética, offset, impresión digital, etc.
PRECISIÓN EN REPETIBILIDAD DE CORTE	±0.1mm		



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