



VG

SERIES

The best choice for
dependability, advanced
functions, and accuracy





Advanced · Excellence · Technology

EXCETEK YOUR ADVANCED FUTURE TECHNOLOGY

High Efficiency

- Lead-in control module
- DPM intelligent step processing function
- High-speed electric discharge module

High Precision

- High rigidity mechanical structure
- Smart corner control module
- Stable cutting module
- Super finish circuit



High Speed Reliability System

- Automatic threading at break point
- Automatic threading under submerged condition
- Permeable mold processing function

High Energy saving

- Smart power management
- Reduce wire efficiency
- Low maintaining costs

High-rigidity casting design where the machine body are designed under Finite element analysis, for best support (RIB)
Designed to support the column which can reduce the deformation caused by the stress of casting and for achieving the basic elements of high precision

- ▶ HIGH EFFICIENCY U/V with robust
Design of Shaft castings which provides stability for precision cutting accuracy

- ▶ Stainless steel surface with hardness of HRC 50

- ▶ The lower arm is circulated with the cooling water for maintaining a fixed temperature and to achieve the optimization of accuracy

- ▶ AC servo motor which provides high response to ensure accuracy

- ▶ Wide machine base structure with span design

- ▶ The robust box base structure of casting design with high precision

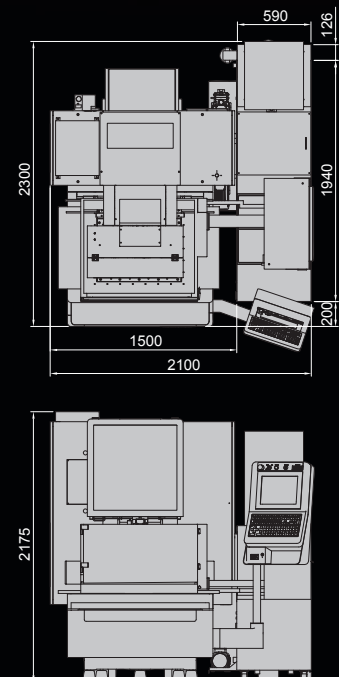


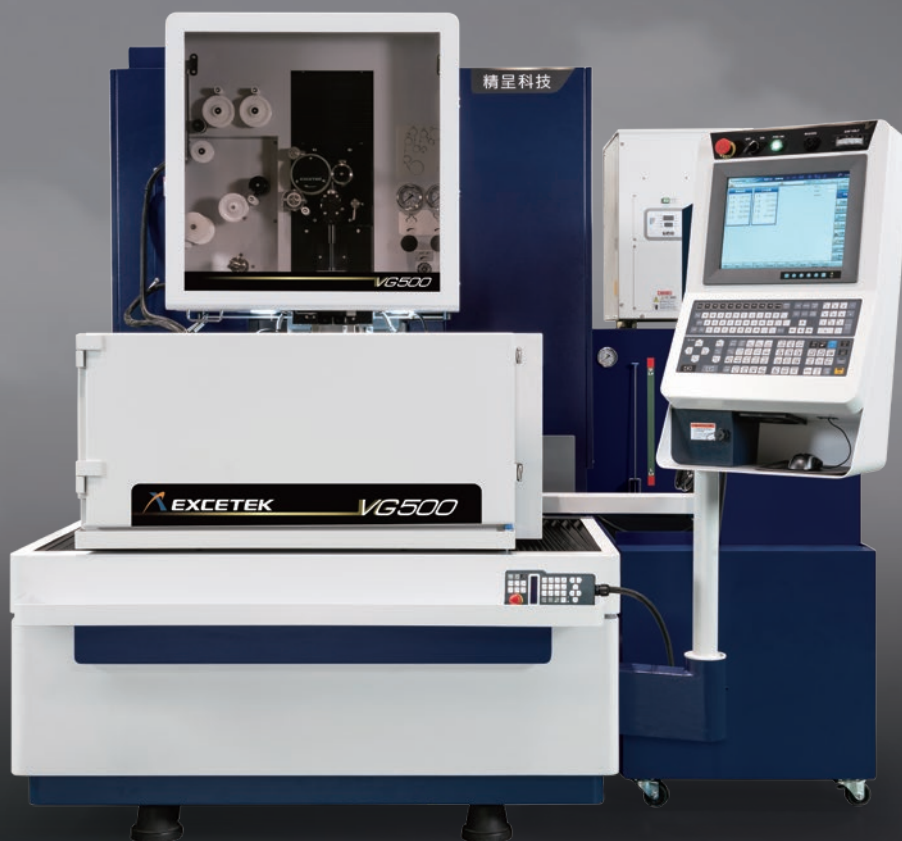


VG400

Delicate. High-precision model

Maximum workpiece size (mm)	W750xD550xH215
Maximum workpiece weight (kg)	500
XY axis travel (mm)	400x300
UV axis travel (mm)	80x80
Z axis travel (mm)	220
Wire diameter (mm)	ø 0.15~0.3 mm
Number of axis controlled	5 axis AC servo motor
Max. Taper angle	±22°/80 mm
Machine dimension (mm)	W2100xD2300xH2200
Machine weight (kg)	2700 kg
Water tank	
Water tank capacity (L)	600 L
Paper filter (PCS)	2 pcs
Water conductivity control	auto
Water temperature control	auto

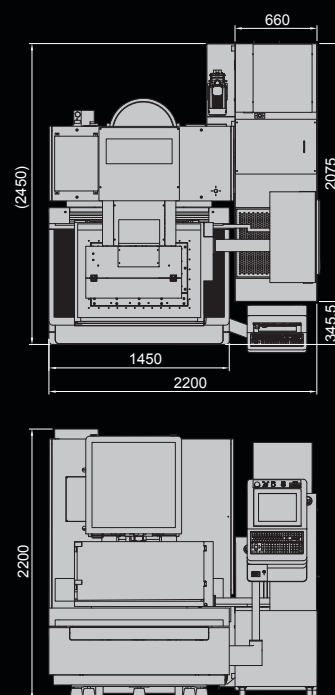




VG500

Best-selling model

Maximum workpiece size (mm)	W850xD550xH215
Maximum workpiece weight (kg)	600
XY axis travel (mm)	500x300
UV axis travel (mm)	80x80
Z axis travel (mm)	220
Wire diameter (mm)	ø 0.15~0.3 mm
Number of axis controlled	5 axis AC servo motor
Max. Taper angle	± 22°/80 mm
Machine dimension (mm)	W2200xD2450xH2200
Machine weight (kg)	3000 kg
Water tank	
Water tank capacity (L)	770 L
Paper filter (PCS)	2 pcs
Water conductivity control	auto
Water temperature control	auto

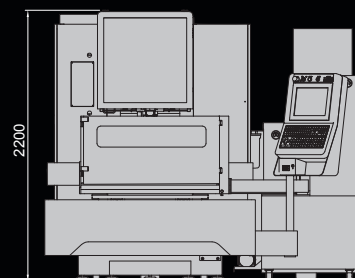
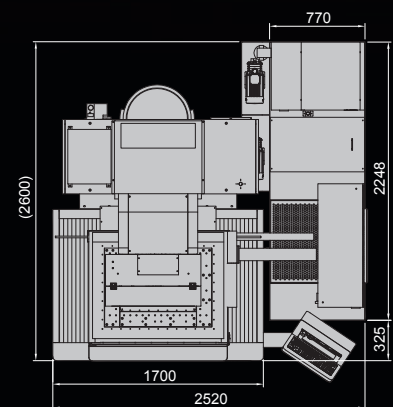




VG600

Excellent and hands-on.
High-precision medium-sized machine

Maximum workpiece size (mm)	W1000xD700xH305
Maximum workpiece weight (kg)	750
XY axis travel (mm)	600x400
UV axis travel (mm)	120x120
Z axis travel (mm)	310
Wire diameter (mm)	ø 0.15~0.3 mm
Number of axis controlled	5 axis AC servo motor
Max. Taper angle	±26°/100 mm
Machine dimension (mm)	W2550xD2600xH2200
Machine weight (kg)	3850 kg
Water tank	
Water tank capacity (L)	940 L
Paper filter (PCS)	2 pcs
Water conductivity control	auto
Water temperature control	auto

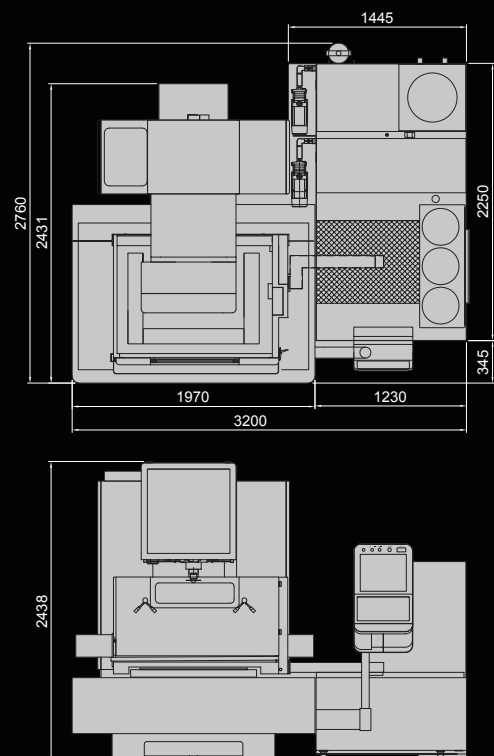




VG800

Economical model

Maximum workpiece size (mm)	W1100xD850xH405
Maximum workpiece weight (kg)	1300
XY axis travel (mm)	800x500
UV axis travel (mm)	160x160
Z axis travel (mm)	410/350 (Option)
Wire diameter (mm)	ø 0.15~0.3 mm
Number of axis controlled	5 axis AC servo motor
Max. Taper angle	± 30°/100 mm
Machine dimension (mm)	W3200xD2760xH2439
Machine weight (kg)	5150 kg
Water tank	
Water tank capacity (L)	1350 L
Paper filter (PCS)	2 pcs
Water conductivity control	auto
Water temperature control	auto

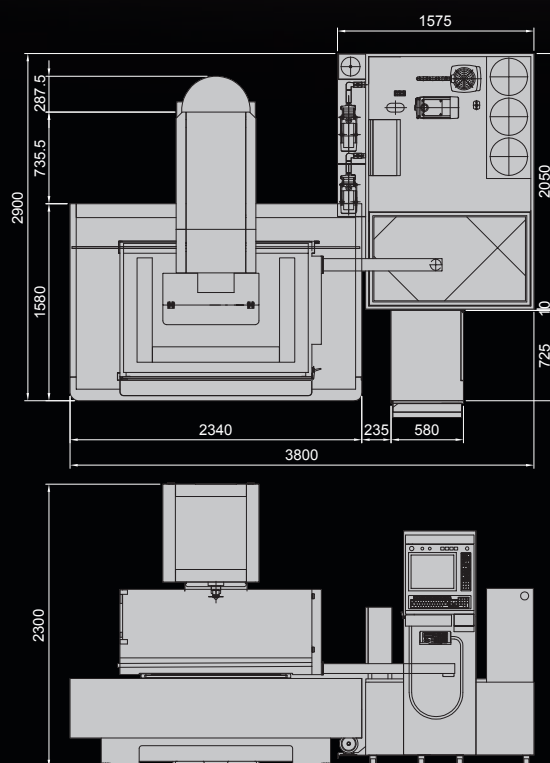


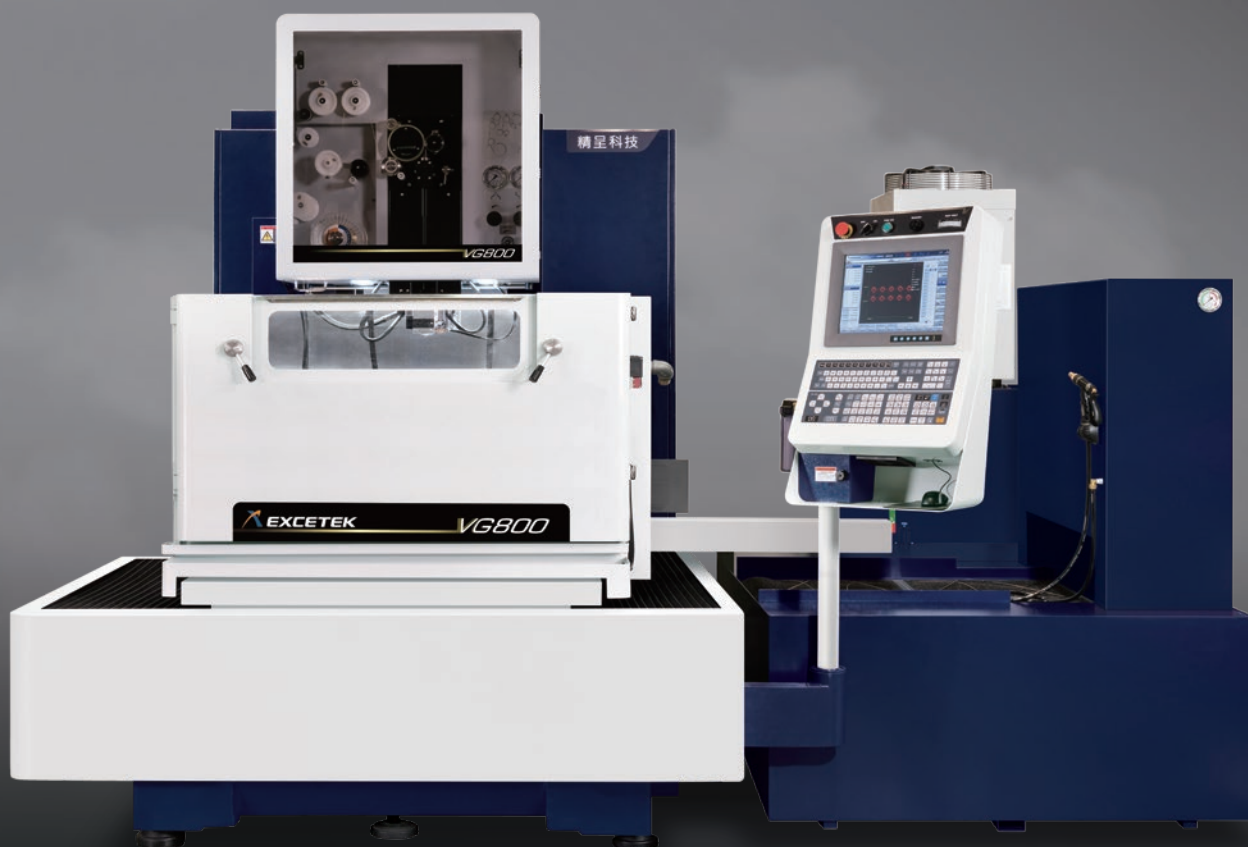


VG1000

Cost-effective model

Maximum workpiece size (mm)	W1400xD950xH305
Maximum workpiece weight (kg)	1500
XY axis travel (mm)	1000 x 600
UV axis travel (mm)	120 x 120
Z axis travel (mm)	310
Wire diameter (mm)	ø 0.15~0.3 mm
Number of axis controlled	5 axis AC servo motor
Max. Taper angle	±26°/100 mm
Machine dimension (mm)	W3800xD2900xH2300
Machine weight (kg)	5850 kg
Water tank	
Water tank capacity (L)	1200 L
Paper filter (PCS)	2 pcs
Water conductivity control	auto
Water temperature control	auto

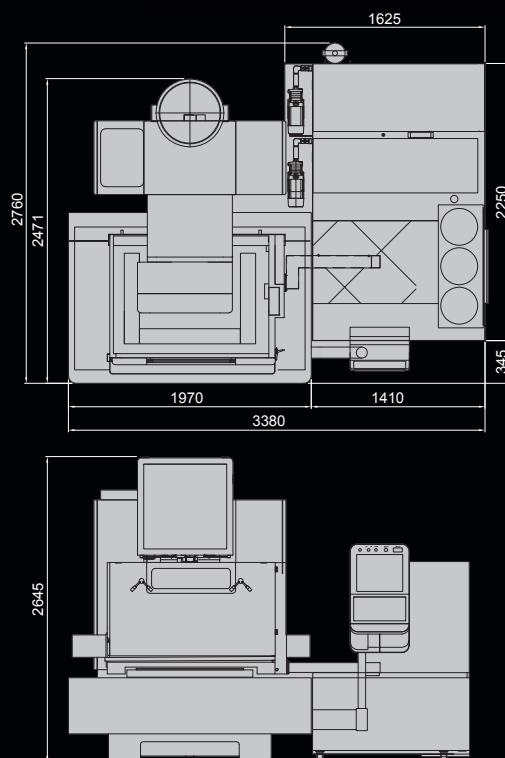




VG800H

Z-axis enhance model

Maximum workpiece size (mm)	W1100xD850xH495
Maximum workpiece weight (kg)	1500
XY axis travel (mm)	800x500
UV axis travel (mm)	160 x 160
Z axis travel (mm)	500
Wire diameter (mm)	ø 0.15~0.3 mm
Number of axis controlled	5 axis AC servo motor
Max. Taper angle	± 30°/100 mm
Machine dimension (mm)	W3370xD2760xH2680
Machine weight (kg)	5500 kg
Water tank	
Water tank capacity (L)	1750 L
Paper filter (PCS)	2 pcs
Water conductivity control	auto
Water temperature control	auto



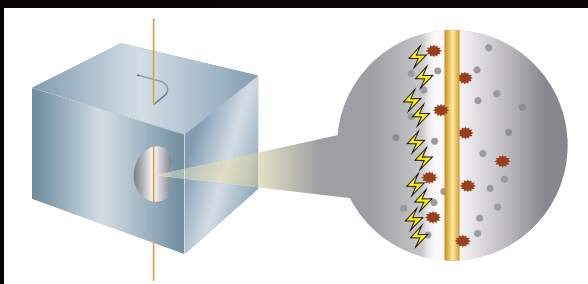
INTELLIGENT PROCESSING MODE

DIGITAL POWER MANAGEMENT DPM

- Step processing condition
- Stable processing module
- Intelligent corner control
- Lead-in control
- Corner arc control
- High speed working condition

Corner break prevention which leads to increase the mold processing speed.

Disconnection rate reduces by 90%
and speed increases by 35%



⚡ Effective discharging ● Ineffective discharging ● Chips

RTS (Real Time Sparking)

Short response time provides feedback to ineffective discharges and adjusts conditions to improve cutting efficiency.

Increase the discharge protection mechanism which effectively prevent the corner breakage probability of thick workpieces.



workpiece material: SKD -11 steel

▶ thickness: 100 mm
wire type: 0.25 mm brass wire
cutting speed : 150 mm²/min

▶ thickness: 50~80 mm
wire type: 0.3 mm brass wire
cutting speed : 250 mm²/min

Digitally controlled discharge technology DPM



- The digital signal helps to detect the discharge density which are used, where the CNC controller will calculate the discharge area according to the discharge capacity, which it improves more precisely and control the discharge energy, wire tension, and water flow. And improves the speed and accuracy of the step difference and the plane processing number.

DPM technolog Comparison Chart	Mode	With	without
	Speed condition	39 min	58 min
	Accuracy condition	$\pm 3\mu\text{m}$	$\pm 15\mu\text{m}$

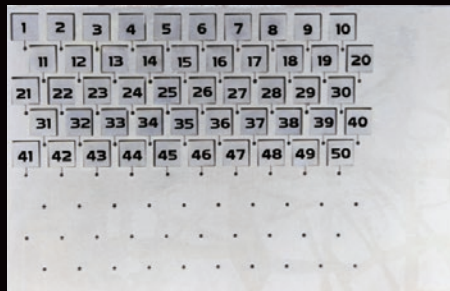
Under factory test condition

Stable discharge module

- 50 Continuous hole cutting, shape accuracy control $4\mu\text{m}$ (inner)

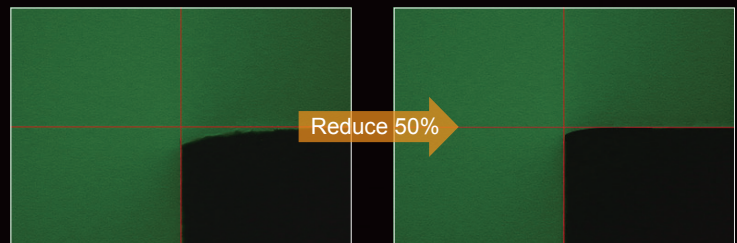


50 holes continuous cutting, shape accuracy control

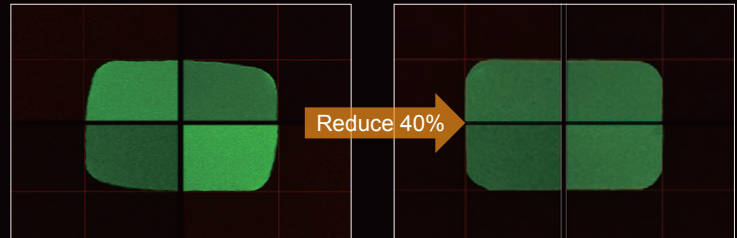


SGS certified

Smart corner control



50% reduction in corner erosion



40% reduction in Shape error

Corner arc control

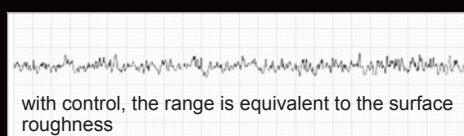
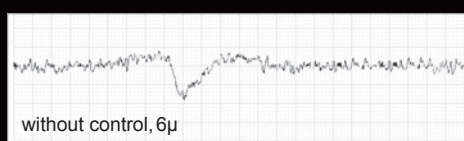
- The square and circle shape error is controlled within $3\mu\text{m}$



	Without control	With control
A	5.001 mm	5.001 mm
B	4.994 mm	4.999 mm
error	7 μm	2 μm

Lead-in control

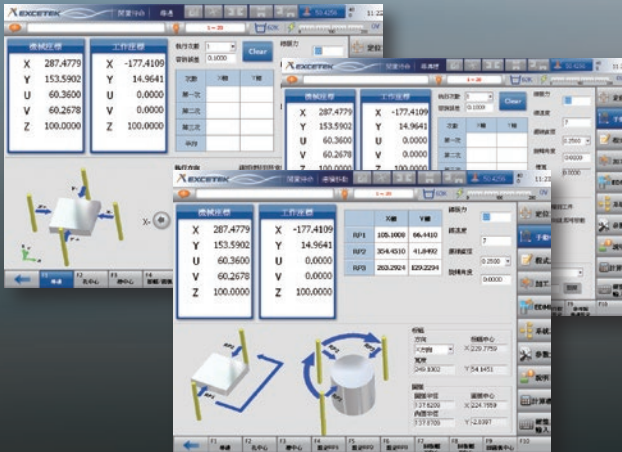
- The lead-in helps to control and reduce line marks which improves the range of the surface roughness of the workpiece and reduces the polishing time after the workpiece is completed.



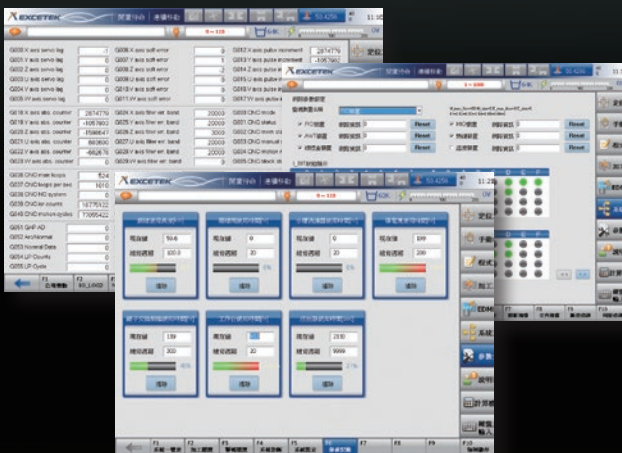
USER FRIENDLY

GRAPHICAL INTERFACE

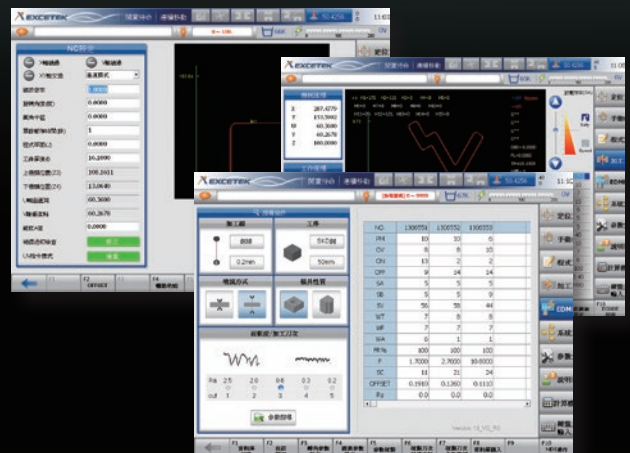
▶ Workpiece positioning function



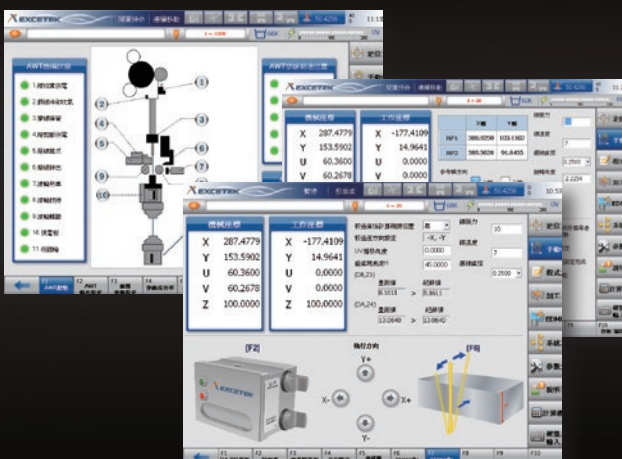
▶ Machine maintenance and diagnosis information



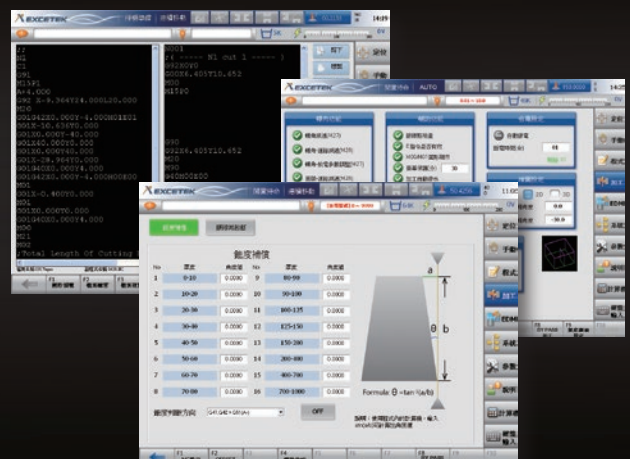
▶ Working set condition



▶ Convenient operation and user-friendly graphical interface

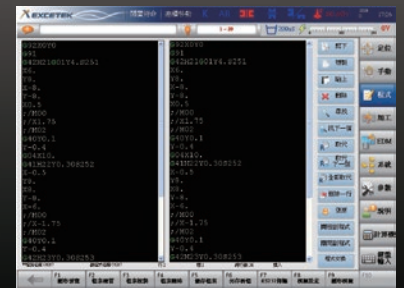


▶ Convenient feature function





- ▶ Automatic return to break point
- ▶ Zoom in function
- ▶ Automatic Z axis lock function



- ▶ Under the simulation screen, main and sub program can be edited



- ▶ Wire compensation function

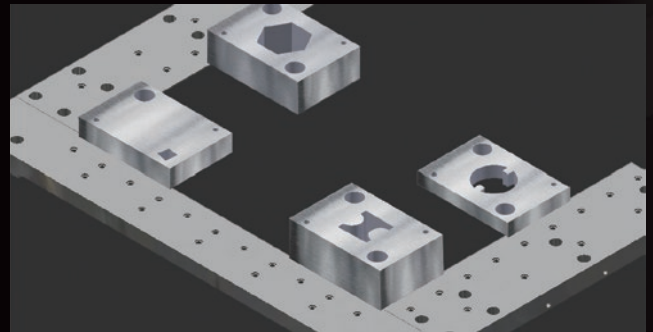
The W6 controller is designed to deliver

- ▶ CNC Device: Industrial PC
- ▶ CPU: Pentium 64-bit high speed CPU
- ▶ Operation Interface: 15" LCD touch-screen, Keyboard, Mouse
- ▶ Input Interface: LAN, USB driver, RS-232
- ▶ Memory capacity: 32 GB SSD
- ▶ Min. command unit: 0.0001 mm
- ▶ Max. programmable dimension: ± 9999.9999 mm
- ▶ Unit: Metric/Inch Switch able



AUTOMATIC WIRE THREADING

Auto wire threading system helps during unmanned day and night working facility and even at ideal stage of break point



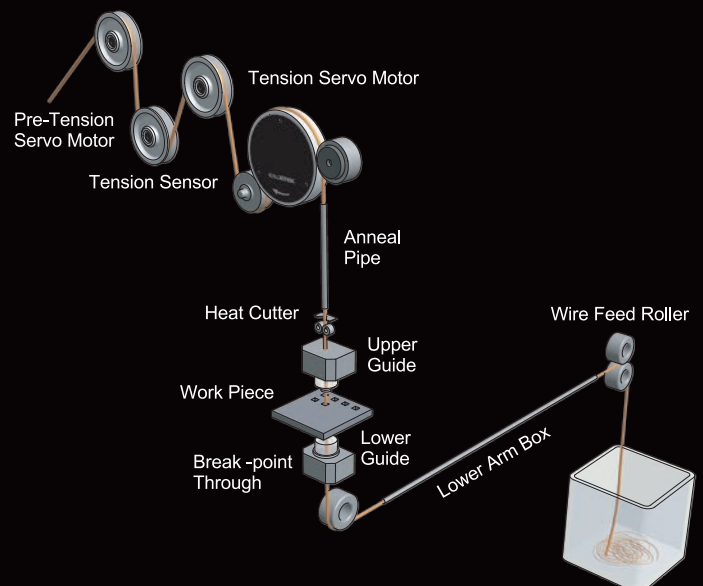
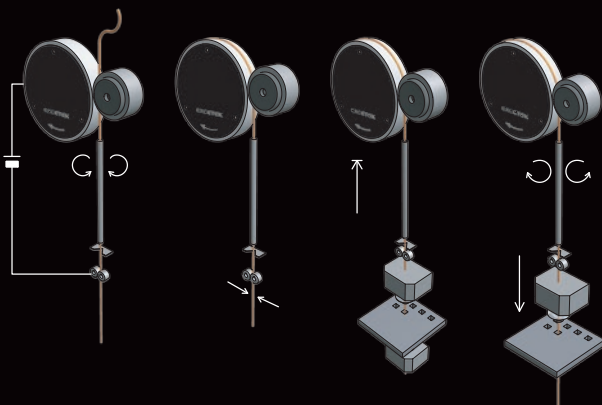
Automatic threading features

- ▶ Auto threading system saves manual operation time.
- ▶ Auto processing of multi-workpiece setting helps in eliminating manual operation.
- ▶ G54~G59 can be used for Multi-coordinate system which makes the setting of multi-workpiece easier.

Reliable automatic threading system

- ▶ Excetek's automatic threading system has a very high and stable threading successive rate which provides an uninterrupted under unmanned operating system day and night. Compared with other competitors, Excetek's outstanding performance of automatic threading directly from the disconnection point makes the threading error rate very low and improves the processing efficiency.

Water jet and air threading function can reach as a mechanical threading. Capacity of threading system reaches even at the thickness of the workpiece where up to 500mm can be threaded successfully.



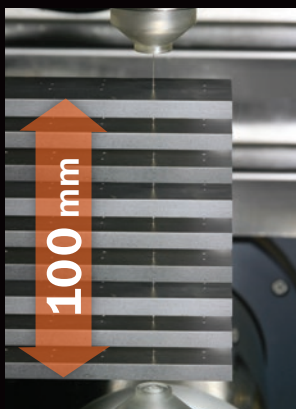


Automatic threading under annealing function

- ▶ Automatic threading at break point: The pre-annealing function helps to improve the straightness of the wire. During the processing function, the wire can be threaded directly from the break point without returning to the start point.
- ▶ Automatic threading under submerged condition: Automatic threading for break points can also be performed under the sub-merged conditions while running, and the working tank does not need to drain or fill water.
- ▶ Multi-hole mold processing function: the multi-hole processing function can be achieved under unmanned processing also. In rare cases such as blind holes, hole offset, short-circuit processing, etc., the system will skip the failed holes when automatic threading fails in the multi-hole processing. And start from the next hole, the information of this action will be automatically stored in the system memory, after finishing the processing, the user will process and thread again according to the system status to complete the cutting.

High-speed automatic threading technology

- ▶ AWT NEW technology: permeable process finalize ➡ Wire straightening ➡ hole threading



- ▶ workpiece thickness 100 mm
Straightening and cutting time: 10 sec
Threading time: 10 sec

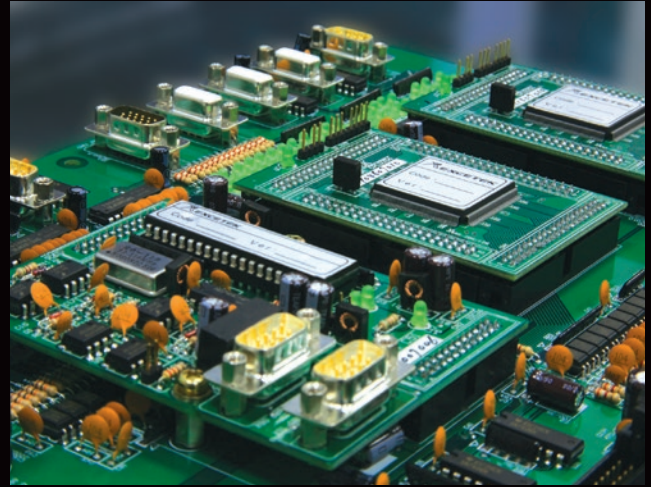


- ▶ workpiece 500 mm
Threading at break point even under submerged condition

Embedded Power System

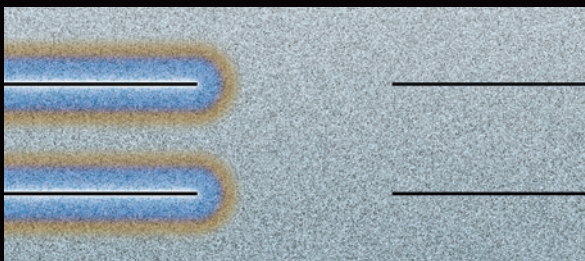
Discharge frequency and control system

- ▶ Our Embedded system design reduces system load and improves system stability and control.
- ▶ we use ASIC chip which helps to increase circuit stability and discharge performance.
- ▶ Real-time feedback of the discharge cutting status, which can stabilize cutting and improve Cutting speed and accuracy.



Modular power system design

- ▶ It is most suitable for electric circuit modularization which gives LED signal instructions for each module of output and input (I/O), providing after-sales service error diagnosis and helps for faster maintenance services.

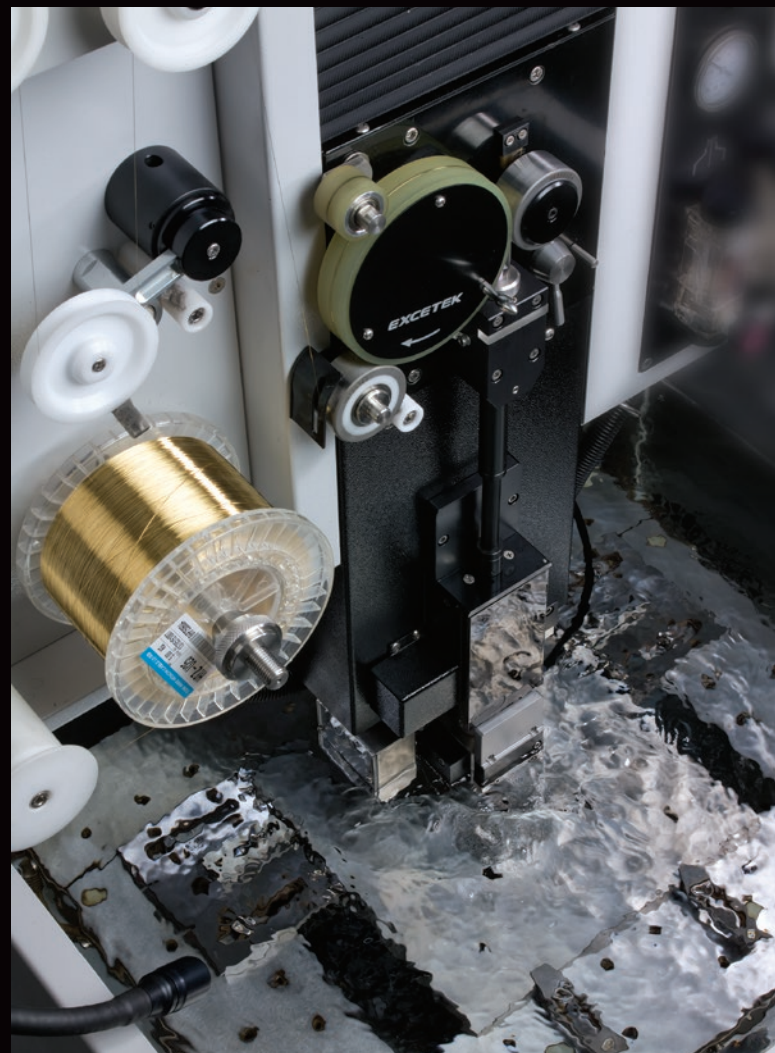


DC discharge

EF (non-electrolytic)
discharge

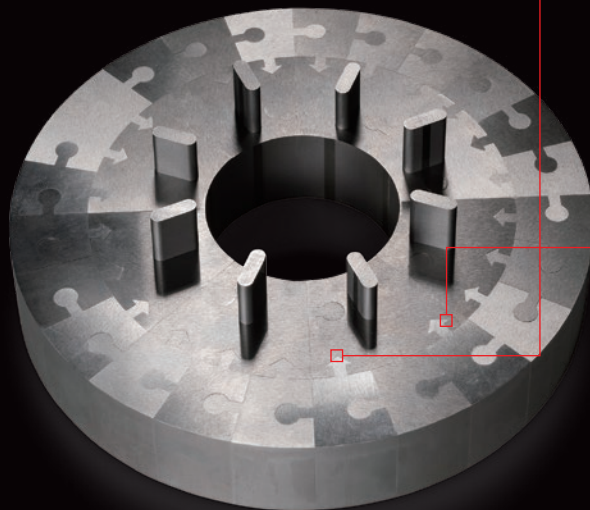
Electroless discharge power system

- ▶ The electroless power system is the new upgraded design which enhance cutting Efficiency and speed. It greatly reduces the phenomenon of heating mold during discharge, thereby extending the life of the mold and increasing the process and cutting speed more than 10%.

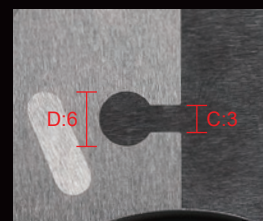
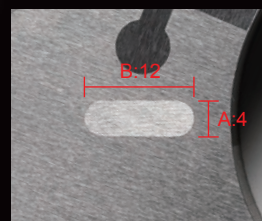
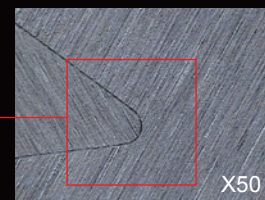
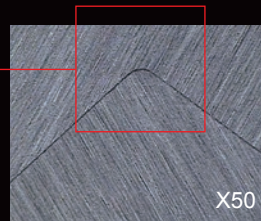


Excellent Processing

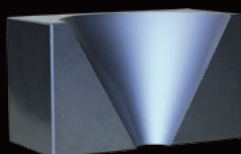
CUTTING TECHNOLOGY



Workpiece: SKD-11
thickness: 20 mm
No. of cuts: 1 cut 2 skim



	A	B	C	D
with control	0	0~2 μ	0	0~2 μ
Without control	0	-8~-10 μ	0	-8~-10 μ



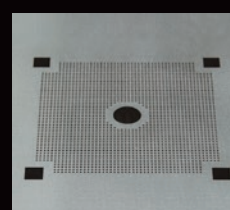
Workpiece	SKD-11
Wire type	0.25 mm / Brass
Taper angle	30°
Thickness	50 mm
No. of cuts	1 cut 3 skim



Workpiece	SKD-11
Wire type	0.2 mm / Brass
Thickness	Punch 50 mm
No. of cuts	1 cut 2 skim



Workpiece	SKD-11
Wire type	0.2 mm / Brass
Thickness	50 mm
No. of cuts	1 cut 2 skim

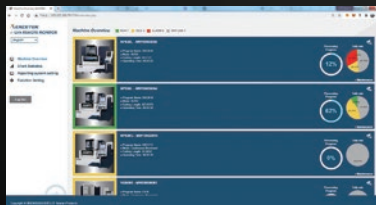


Workpiece	SKD-11
Wire type	0.2 mm / Brass
Cut hole	0.7 mm
Thickness	15 mm
No. of cuts	nil

E-LINK Remote monitoring system (optional)



Machine overview



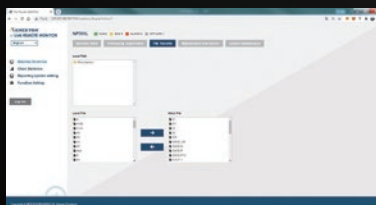
Machine status



Consumables monitoring



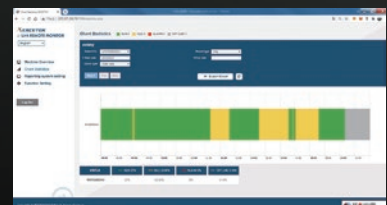
NC transmission



Consumables monitoring



Utilization statistics rate chart



Connects to other system through OPC UA, an international standard interface which can be used for HEIDENHAIN, DELTA DIA View, DZ Connect and many more....



Accessories

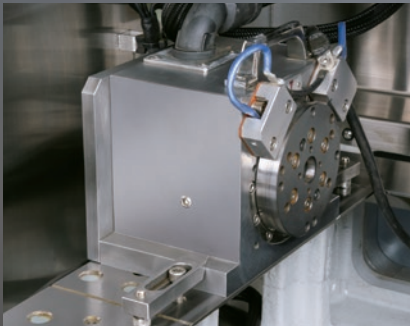
Standard accessories

- ▶ Ion exchange resin
- ▶ Paper Filter x 2
- ▶ Diamond guide x 2
- ▶ Upper and lower jet nozzles x 2
- ▶ Conductive plate x 2
- ▶ Brass wire x 1 spool 5kg (according to customer specified wire diameter)
- ▶ Clamping tool x 1 set

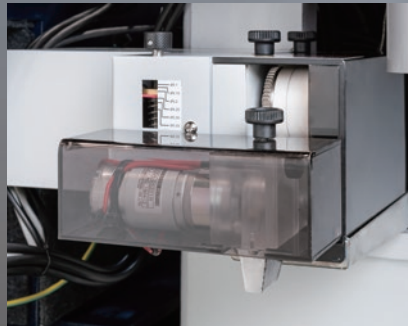
Optional accessories

- ▶ Two-stage tank door
- ▶ Automatic wire threading system
- ▶ X/Y axis linear scale
- ▶ Clamping beam
- ▶ 15KVA transformer
- ▶ Wire chopper
- ▶ Jumbo feeder
- ▶ Rotary table

Rotary Table



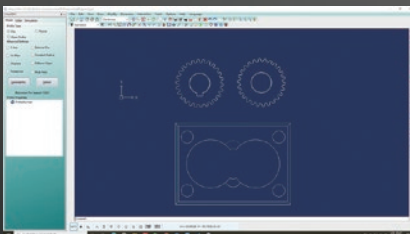
Wire Chopper



Jumbo Feeder



CAD/CAM



Clamping Beam



Caution

Installation conditions

Please locate the wire cut machine under the following

Environmental conditions

1. Ambient temperature: the appropriate temperature range is 15°C~30°C
Note : The recommended room temperature is 20°C ± 1°C.
2. Humidity: The relative humidity is 30%~75%RH. (Anhydrous state)
3. ground Installation: the allowable ground vibration must be accelerated below 0.5m/s², and the maximum amplitude must be less than 5 μm.
4. Grounding: The wire cut machine must be grounded to avoid external noise, radio interference, and to avoid ground leakage. Under the electronic equipment standards, EDM machines are recommended to be grounded at Class C (grounding resistance is less than 10Ω) (Figure 1). The grounding cable must be connected to the grounding location independently, and a 14mm² grounding wire should be used (as shown in Figure 2).
5. Electromagnetic shield room: If the machine affects the surrounding TV and other communication equipment, please set up an electromagnetic less room, follow the instructions to install the machine and ground it.

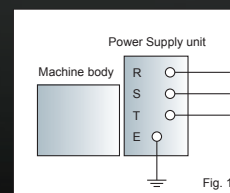


Fig. 1

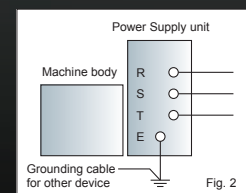


Fig. 2

VG

SERIES

The best choice for dependability,
advanced functions, and accuracy



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