



NP Series

NANO PRECISION WIRE-CUT EDM

NP series

High Precision

- Smart Corner Control
- Stable Discharge Module
- SFC Super Finish Circuit

Efficiency

- DPM module
- Entrance mark control
- EF Electrolysis Free generator system

Cost Saving

- Intelligent Power Management
- Save Wire Consumption
- Low running cost

Intelligent Networking

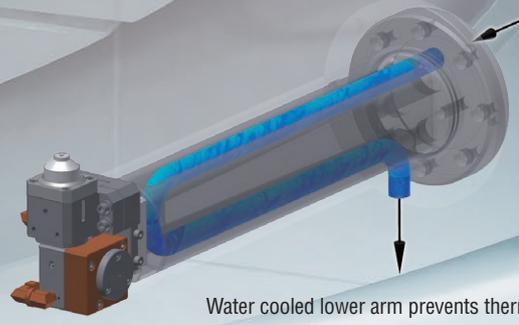
- Remote monitor and management
- Connect all Controller
- Portable device monitor

Automation

- High speed Auto Wire Threading
- Workpiece Transfer Robot
- Auto Measurement and Correction



Rigid U, V truss design.



Water cooled lower arm prevents thermal expansion caused by heat buildup.

Stainless steel work table with hardness HRC 50°.



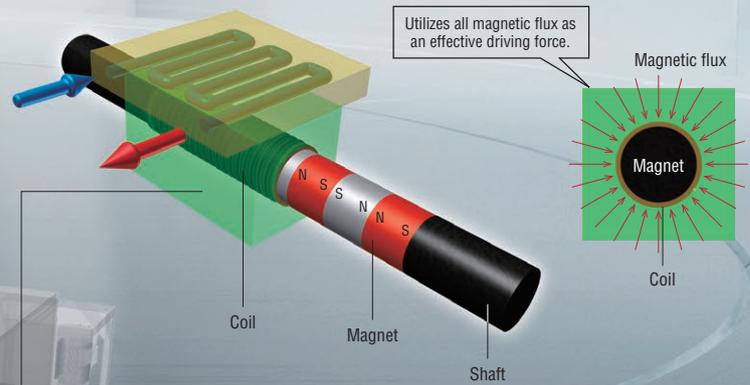
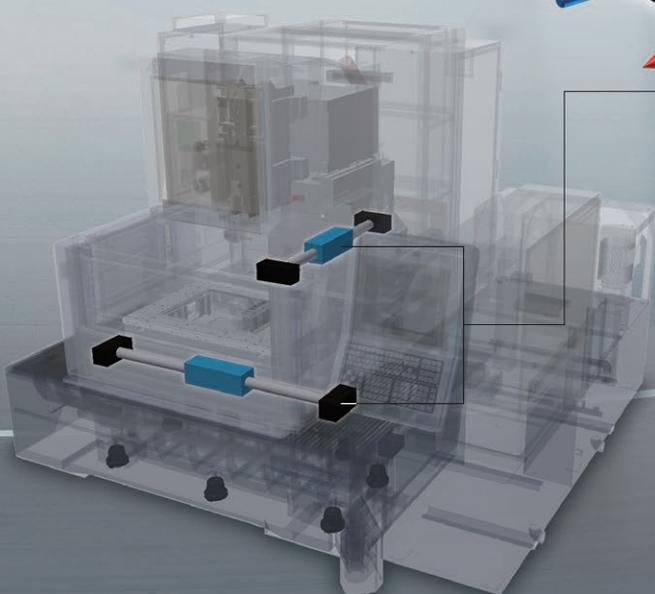
Roller LM Guide Effect supper higher Rigidity

Cast machine base designed using FEA to achieve increased rigidity.



Extra wide machine base.

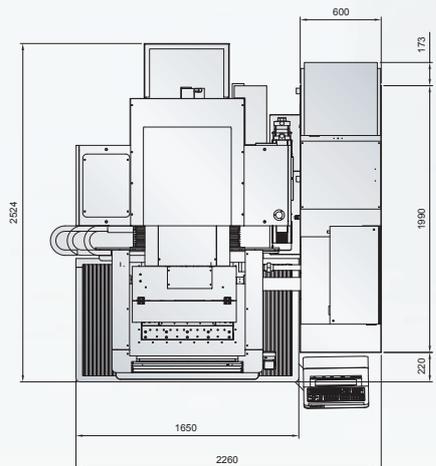
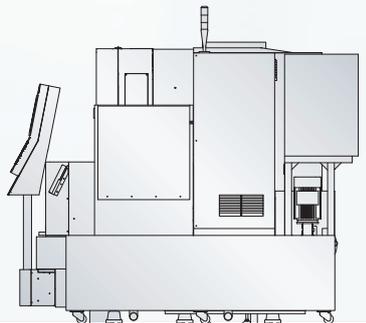
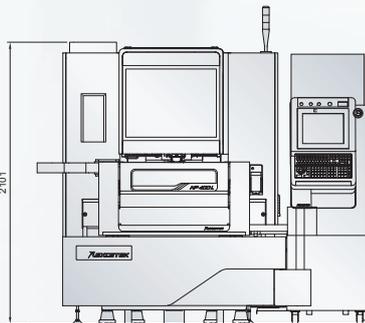
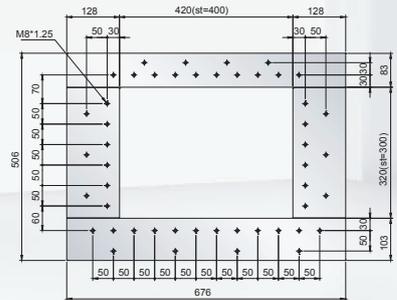
Linear Sheft Motor Driver System



Linear Shaft Motor

- Provides constant temperature of the entire machine during processing that is beneficial to precision, with its features of magnetic flux in high thrust, high efficiency, low energy consumption and low temperature varieties that can achieve low-temperature circulation of liquid/flow within linear motor.
- Provides high precision in shaping and mirror polishing during processing, with its features of linear scale in 0.1 μm high resolutions and of controller in high resolution.

NP 400 L Compact size



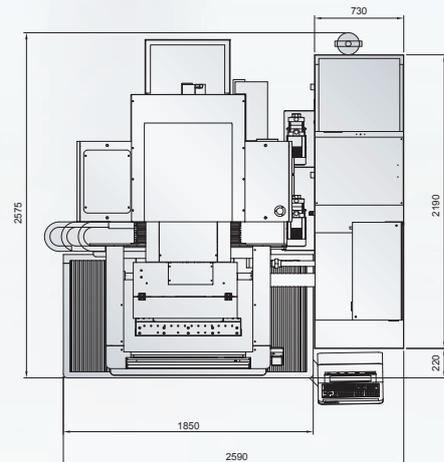
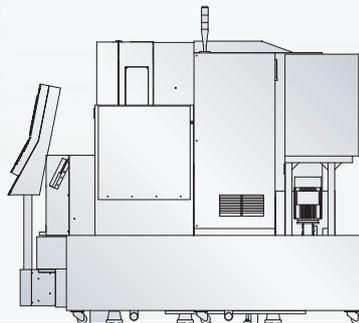
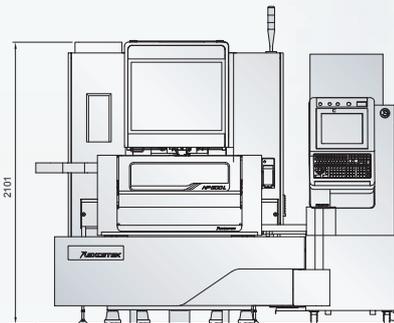
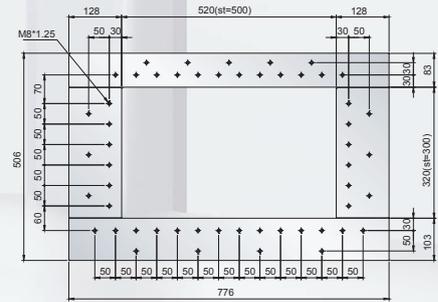
SUBMERGED TYPE

Machine	NP400L
Max. Work piece Size	750*550*215 mm
Max. work piece Wight	500 kg
Table Travel of XY	400*300 mm
U&V Axis Travel	80*80 mm
Z Axis Travel	220 mm
Wire diameter	0.15-0.3 mm
Number of axes controlled	XY Axis Linear motor, UVZ Axis AC servo motor
Maximum Taper Angle	±22°/80 mm (Wide diamond guide and nozzle)
Machine Dimensions	2260*2525*2100 mm
Machine weight	3050 kg

Dielectric Tank

Tank Capacity	650 L
Paper Filter	2/pcs
Deionizer	AUTO
Chiller Unit	AUTO

NP 500 L Our most popular machine size



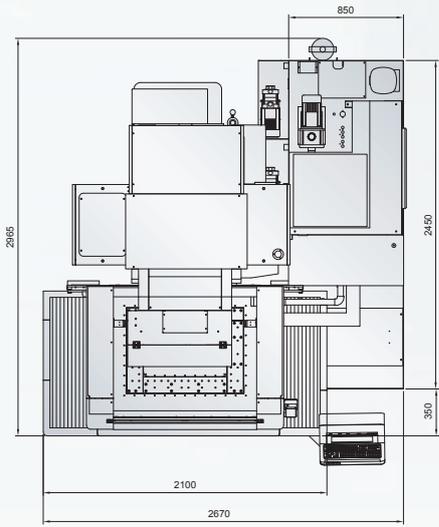
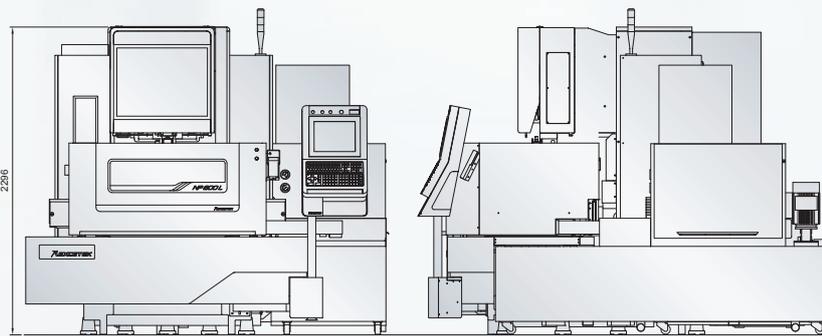
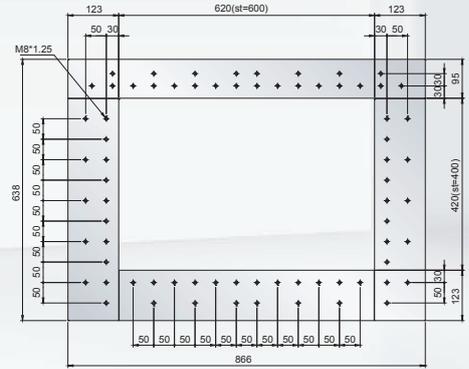
SUBMERGED TYPE

Machine	NP500L
Max. Work piece Size	850*550*300 mm
Max. work piece Wight	600 kg
Table Travel of XY	500*300 mm
U&V Axis Travel	120*120 mm
Z Axis Travel	310 mm
Wire diameter	0.15-0.3 mm
Number of axes controlled	XY Axis Linear motor, UVZ Axis AC servo motor
Maximum Taper Angle	±26°/100 mm (Wide diamond guide and nozzle)
Machine Dimensions	2590*2575*2165 mm
Machine weight	3350 kg

Dielectric Tank

Tank Capacity	750 L
Paper Filter	2/pcs
Deionizer	AUTO
Chiller Unit	AUTO

NP 600 L Optimum flexibility



SUBMERGED TYPE

Machine	NP600L
Max. Work piece Size	1000*700*345 mm
Max. work piece Wight	800 kg
Table Travel of XY	600*400 mm
U&V Axis Travel	160*160 mm
Z Axis Travel	350 mm / 410 mm (option)
Wire diameter	0.15-0.3 mm
Number of axes controlled	XY Axis Linear motor, UVZ Axis AC servo motor
Maximum Taper Angle	± 30°/100 mm (Wide diamond guide and nozzle)
Machine Dimensions	2670*2965*2300 mm
Machine weight	4700 kg

Dielectric Tank

Tank Capacity	900 L
Paper Filter	2/pcs
Deionizer	AUTO
Chiller Unit	AUTO



NP 500L €



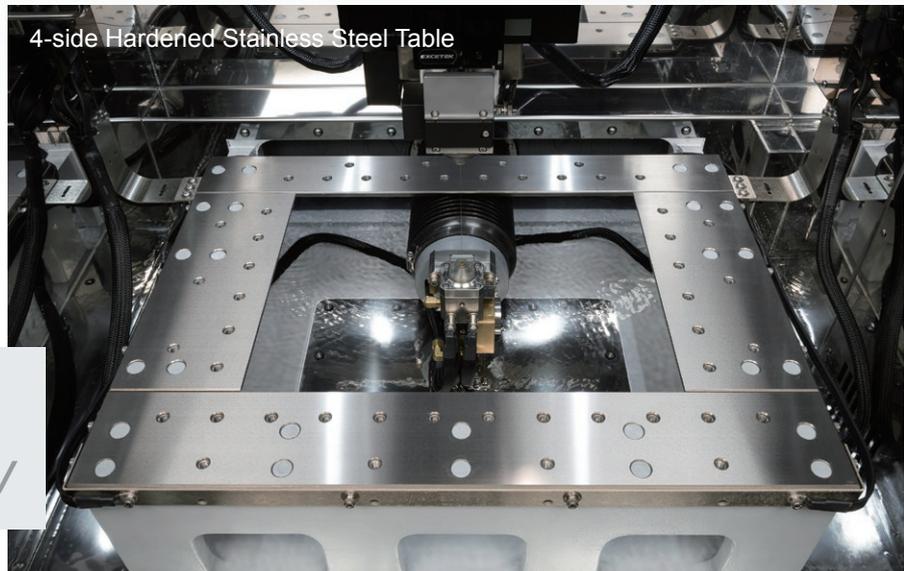
NP 400L €



NP 600L €

- Comply with TUV CE conformity, both safety and metal desired design with easy operation.
- Power slider door design to save installation space and light operation.

4-side Hardened Stainless Steel Table

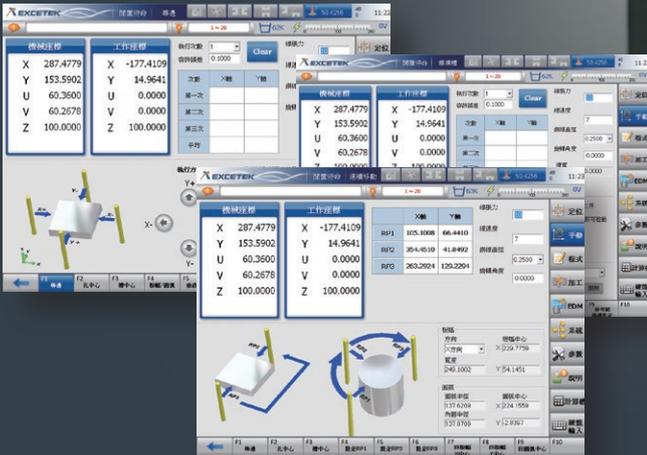


Improved Operability

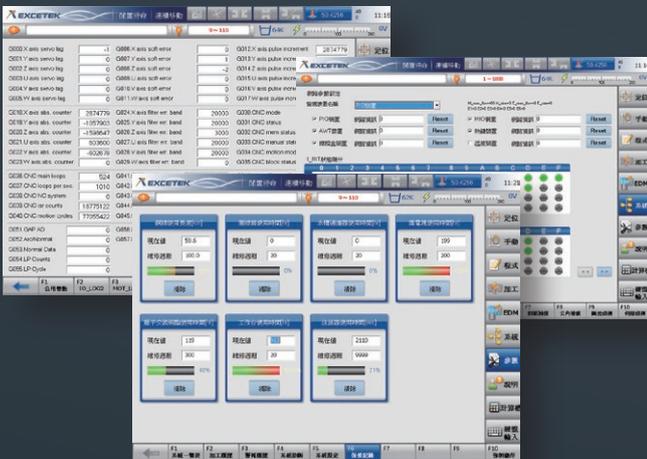
INTELLIGENT MACHINING MODE



Workpiece Positioning function



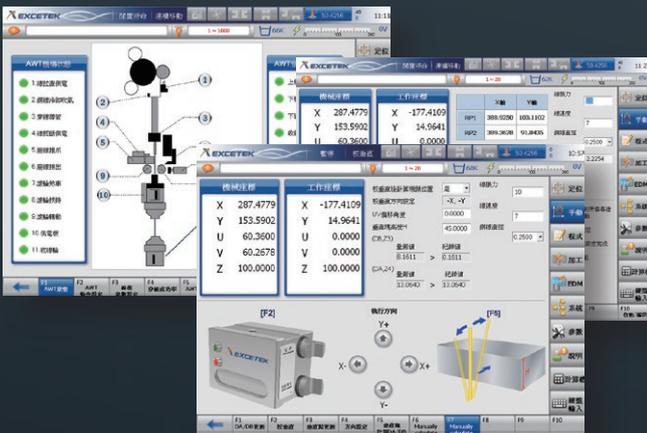
Maintenance and Diagnosis information



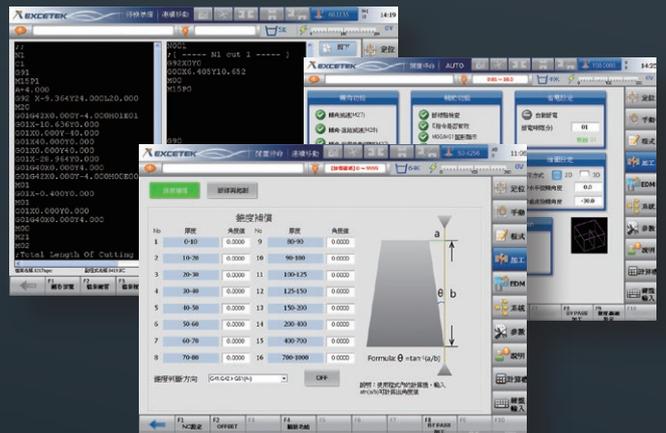
Technology data search function



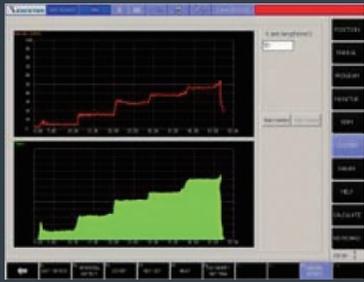
Graphical Interface



Useful function



DPM - Digital Power Management



DPM is capable of detecting digital signals of sparking density, providing feedback to the CNC system and calculating the sparking size.

It controls the sparking energy, wire tension force and water pressure more precisely; increases cutting speed and accuracy when cutting on irregular thickness workpieces.

Comparison using DPM technology	Mode	Enable	Disable
	Speed mode		39 min.
Accuracy mode		±3 μm	±15 μm

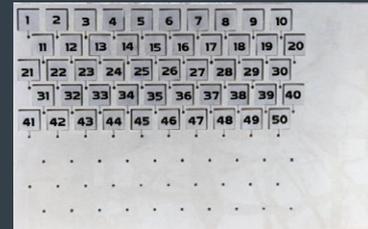
(Under factory test conditions)

STABLE DISCHARGE MODULE

50 holes, one cut, and shape accuracy within 4 micron

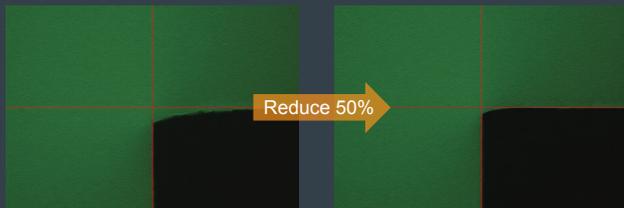


50 holes, one main cut and shape accuracy

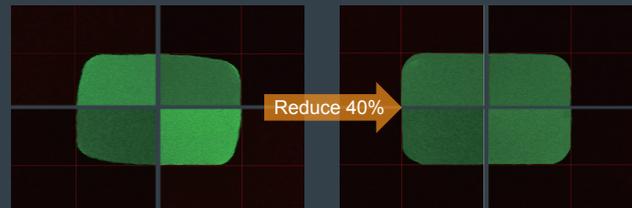


SGS Verification Workpiece IMG

SCC II Smart Corner Control



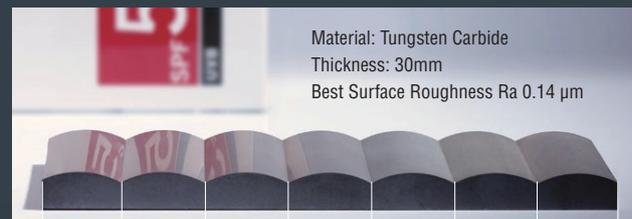
Corner eroded reduce 50%



Shape error reduce 40%

SFC-Super Finish Circuit

High frequency sparking energy provides Ra0.2μm surface roughness with 1 rough cut plus 6 skin cuts.

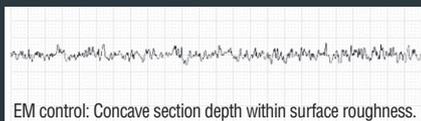


Material: Tungsten Carbide
Thickness: 30mm
Best Surface Roughness Ra 0.14 μm

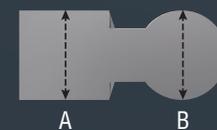
unit: Ra	0.14	0.2	0.3	0.35	0.49	0.8	2.5
	SFC (option)	Standard					

Entrance Mark Control

Concave section depth within surface roughness, Greatly reduce polishing time.

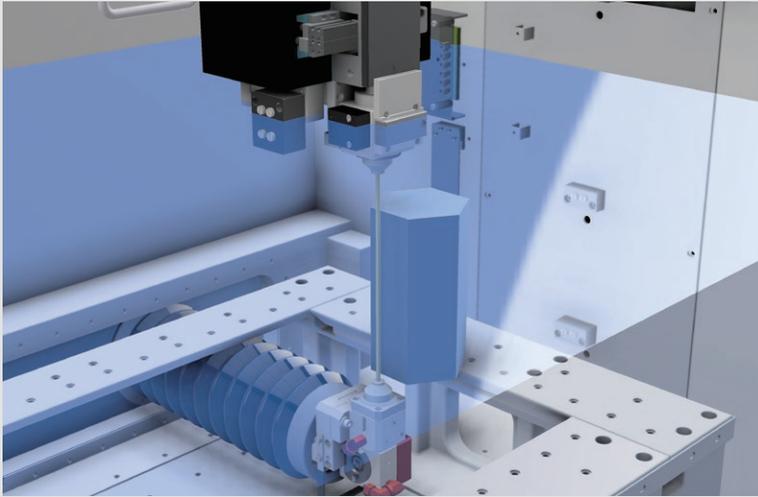


Smart Radius Control

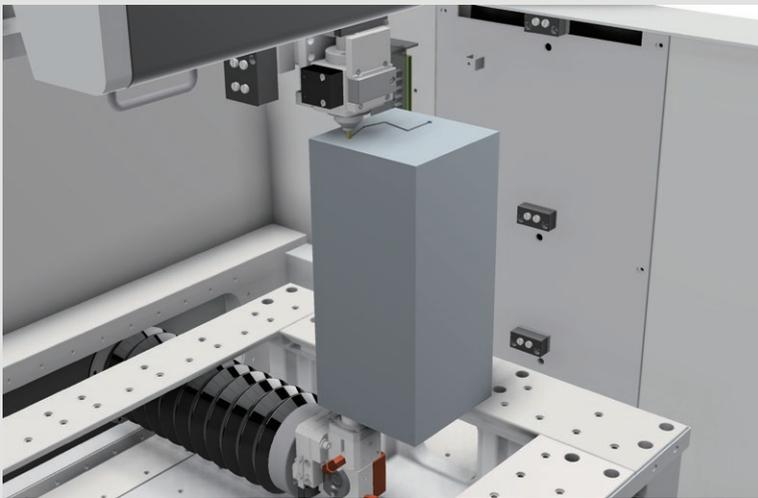


	Without control	Using control
A	5.001 mm	5.001 mm
B	4.994 mm	4.999 mm
error	7 μm	2 μm

Auto Wire Threading



■ 200mm Submerge threading



■ 400mm thickness threading in break point

High speed Auto Wire Threading System



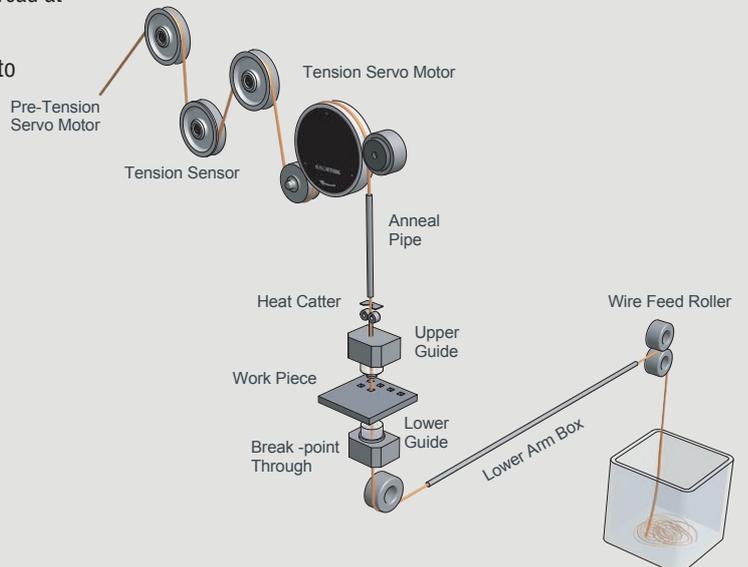
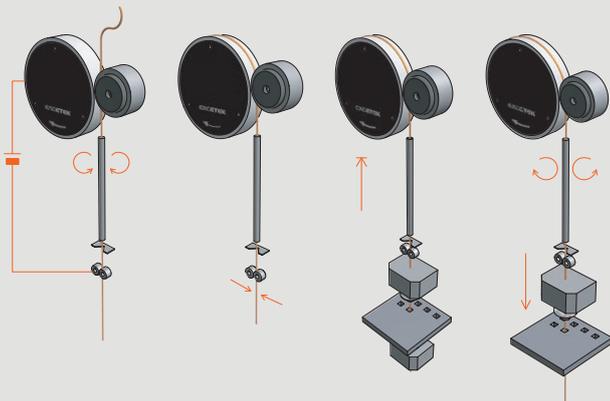
Workpiece thickness 100mm

Wire annealing and cutting: 10 sec
Threading: 10 sec

Reliable Auto Wire Threading system

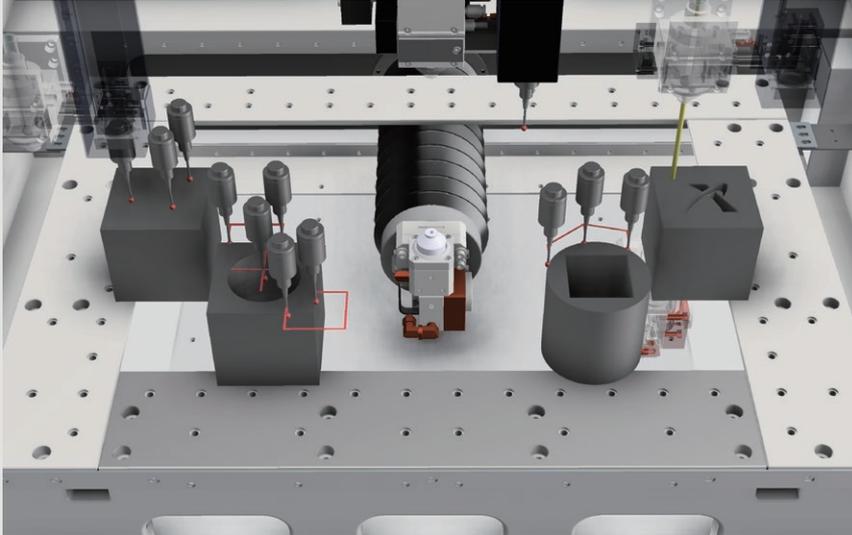
The EXCETEK AWT is very sophisticated design that provides continuous unmanned operation day and night. Unlike other systems it can thread at the point of the wire breakage.

A water jet function enables the machine to thread workpieces up to 500mm.



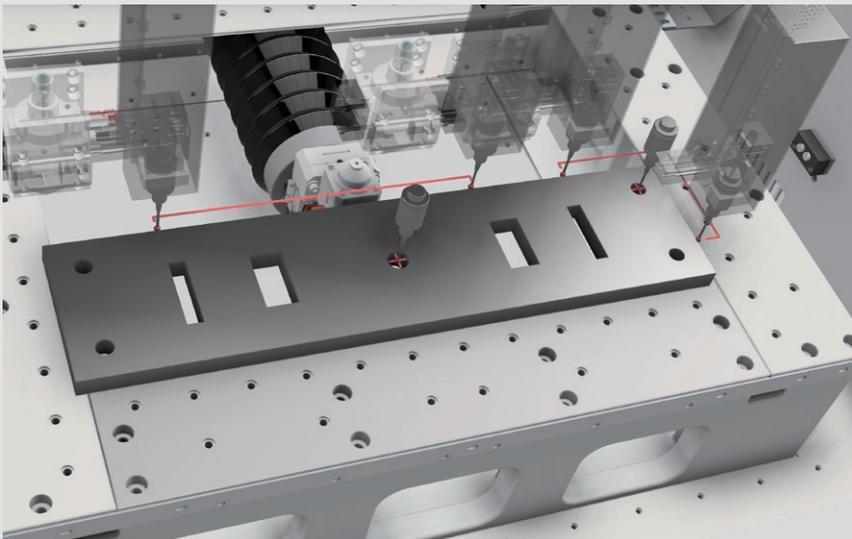
On-line measurement system

- Before the machining, on-line measurement and calibration instead of the conventional one, significantly reduce the time to calibrate the workpiece.
- With the macro command the automatic measurement calibrates the reference point; enhance the machining accuracy.
- After machining, directly on-line measure the workpiece on the table; avoid the unexpected error from dismount/mount the workpiece.



Multi-workpiece machining

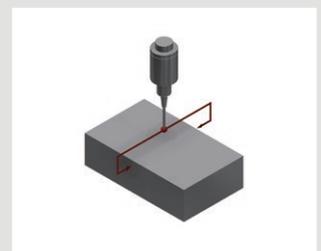
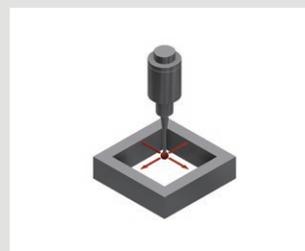
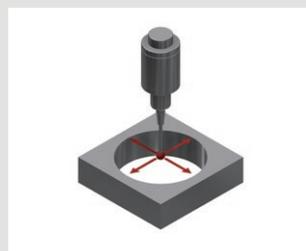
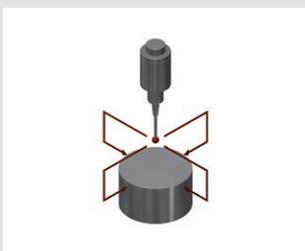
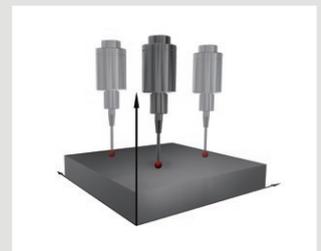
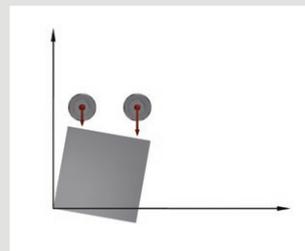
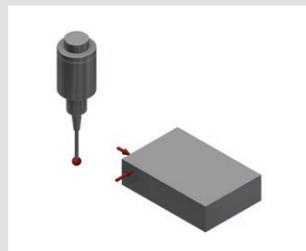
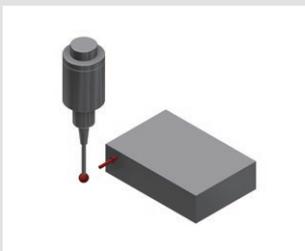
- ▶ Automatic compensating the 3D flatness of workpiece
- ▶ Automatic compensating the parallelism of workpiece (AR)
- ▶ Automatic machining reference point measurement
- ▶ Processing AWT automatic wire threading
- ▶ Go to the next workpiece to continue processing



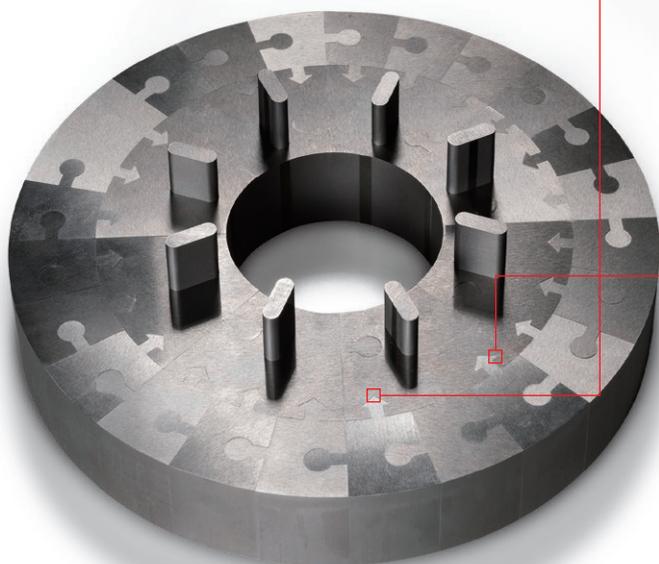
Processing automation

- ▶ Automatic compensating the parallelism of workpiece(AR)
- ▶ Automatically calibrate the reference point
- ▶ Processing AWT automatic wire threading
- ▶ Automatically measure the results after machining
- ▶ Export the measurement report

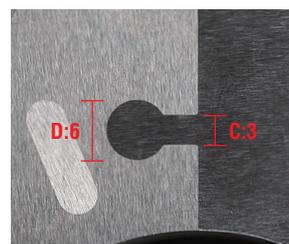
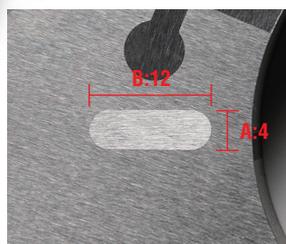
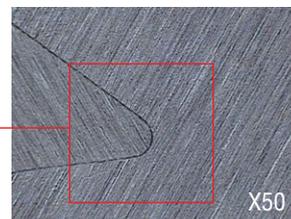
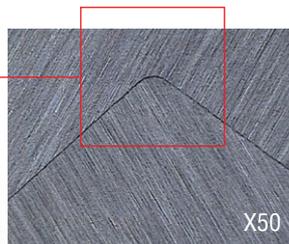
Automatic Measurement Application



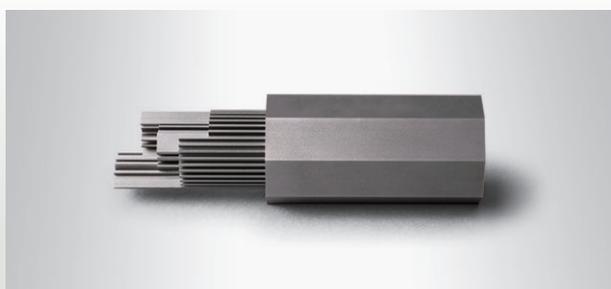
Cutting Technology



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



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



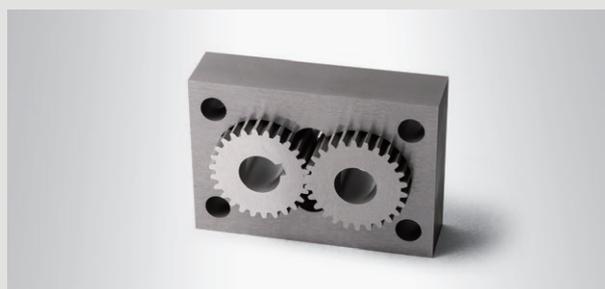
Workpiece	SKD-11
Wire	0.2 mm / Brass
Thickness	50 mm
No. of cut	1 cut 2 skim



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

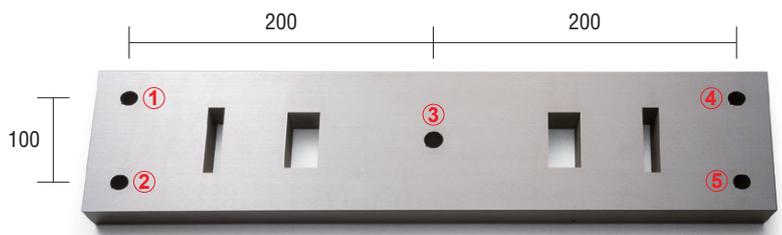


Workpiece	SKD-11
Wire	0.25 mm / Brass
Thickness	200 mm
No. of cut	1 cut 2 skim

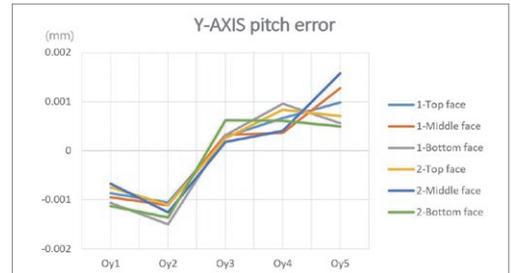
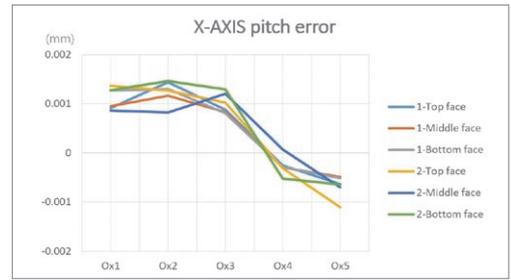


Workpiece	SKD-11
Wire	0.2 mm / Brass
Thickness	15 mm
No. of cut	1 cut 2 skim

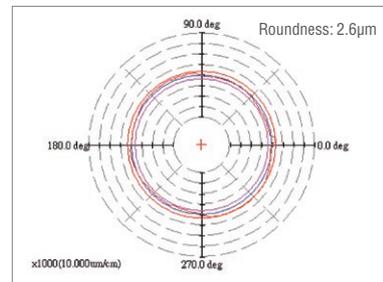
Precision



Workpiece: SKD-11
 Thickness: 30 mm
 No. of cut: 4 cut



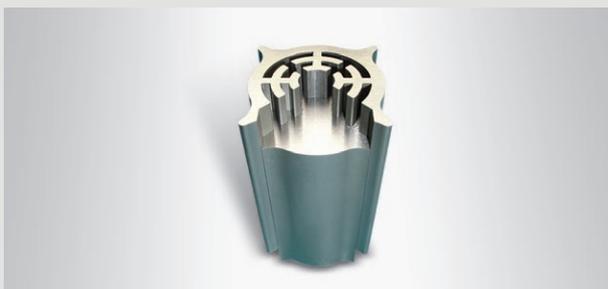
Workpiece: Tungsten carbide
 Wire: 0.2
 Thickness: 50 mm
 No. of cut: 1 cut 3 skim



Workpiece	SKD-11
Wire	0.25 mm / Brass
Angle of taper	30°
Thickness	50 mm
No. of cut	1 cut 3 skim



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



Workpiece	SKD-11
Wire	0.25 mm / Brass
Thickness	50 mm
No. of cut	1 cut 2 skim



Workpiece	Tungsten carbide
Wire	0.2 mm / Brass
Thickness	50 mm
No. of cut	1 cut 4 skim

Automation



Auto measurement system



W-axis



PCD tool cutting module



Standard features

- XY axis linear scale
- AWT
- Ion exchange resin x 10L
- Paper filter x 2 pcs
- Diamond guide x 2 pcs
- Upper and lower flushing nozzle x 2 sets
- Energizing plates x 2 pcs
- Brass wire x 1 spool
- Clamping tool x 1 set
- Vertical alignment jig x 1 set

Option features

- Clamping Beam
- AVR 15KVA
- Transformer 15KVA
- Short Message Service (SMS)
- Remote Monitor System
- Super Finish Circuit
- W-Axis
- Jumbo Feeder L-50A
- Auto Front Door (Only NP600L)
- Signal Tower
- Auto measurement system

Option



Power Slide Door



Jumbo Feeder



Clamping Beam

Remote Monitor System

Automation





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