



AccuteX

The First Name of CNC Wire Cut EDM



ACCUTEX TECHNOLOGIES CO., LTD.

NO. 81, 32nd Road, Industrial Park, Taichung City, Taiwan.

TEL : +886-4-23599688

FAX : +886-4-23597266

<http://www.accutex.com.tw>

E-mail : sales@accutexweb.com.tw

Agent / Dealer _____

ACCURACY

is not just merely a measuring value, it is our Attitude.

ACCUTEX EUROPE

RUSSIA

POLAND

CANADA

FRANCE

ACCUTEX U.S.A

PORTUGAL

SPAIN

ITALY

CZECH REP

TURKEY

SLOVENIA

SOUTH AFRICA

ISRAEL



ACCUTEX KOREA

JAPAN

ACCUTEX CHINA

ACCUTEX TAIWAN

HONG KONG

THAILAND

VIETNAM

SINGAPORE

MALAYSIA

INDONESIA

AUSTRALIA

NEW ZEALAND

INDIA

PAKISTAN

Company History

- 2001 • Accutex Technologies Co., Ltd. was founded.
- 2002 • Accutex introduces their in-house developed **Accutex CNC Wire Cut Controller**.
• Marketing activities started from Taiwan and China.
- 2003 • Acquired **"Waste-wire Auto Removing Device"** Patent.
• Acquired **"Air Cushion Sealed Packing Device for Submerged Water Tank"** Patent.
• Debut in TIMTOS 2003, market extends to South East Asia, Europe and America.
• Strategic Partner **"Accutex Korea"** starts operation.
- 2004 • Certified as "ISO 9001:2000" Company.
• Strategic Partner **"Accutex Europe"** in Germany starts operation.
- 2005 • **Accutex China** was established in Kunshan, China.
- 2006 • Awarded as "Excellent Achievement" and qualified to purchase 10000 sq. meters of land in the "Taichung Precision Mechanical Innovation Park".
• Strategic Partner **"Accutex EDM USA"** starts operation.
- 2007 • Introducing **Accutex AX series** Machines.
• Acquired **"Water Tank Locking Device"** Patent.
• "Accutex 6-Axis CNC Wire Cut EDM" was awarded as "Excellent Work" in the "Scientific and Technological Creation" competition during TIMTOS 2007.
• New Accutex Plant in "Taichung Precision Mechanical Innovation Park" begins construction; the grand opening will be in Spring / Summer 2008.

Team Work

The conception of Accutex originated with a group of engineers who shared the same forward thinking ideas. The products marketed with the Accutex logo are symbols of high accuracy and advanced technologies. With over 15 years' dedicated to Innovation as well as Research and Development, the Accutex Team has been developing and mastering the cutting edge techniques in the Wire Cut EDM field, thus establishing the company's core competition power in the stage of international business.

Service

Accutex customer service is world class, from the initial cutting analysis before purchase, through the training and machine installation, our professional sales and support staff will ensure a smooth implementation of all Accutex products. This all-aspect service support reflects Accutex's business concept: Service is part of our products.



AU series T-Base Design

Complex High-Rigidity Structure

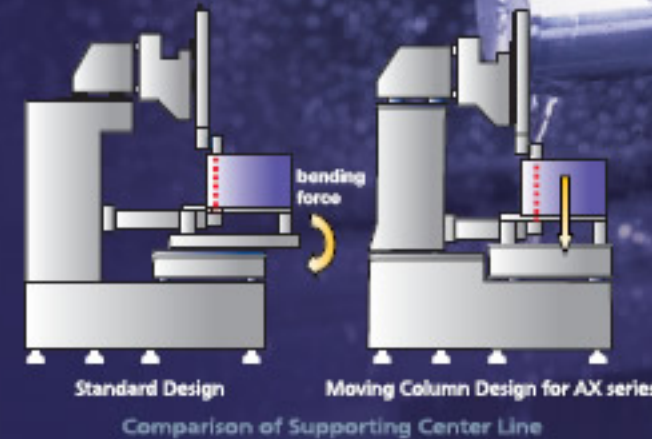
C-Frame construction was designed via Finite Element Analysis (FEA) along with multi-ribbed structure features high rigidity, large table load, and low mechanical deformation.

T-Base Design

All Accutex AU Series Models are designed with T-Base construction. The longer X-Axis is located on the Base, the shorter Y-Axis is located on top of X-Axis. Wherever the work table moves, it is fully supported by the construction without overhang phenomenon.



Frame of AU series



Compound Table Design of X and Y Axis

When loaded with a heavy work piece, the support force will be deviated from the work piece position at the Y+ limit zone, the AX series design is suitable for a non-heavy work piece.

AX with Moving Column Design

The Y Axis movement is shifted to the machine column, this avoids the tolerance's accumulation caused by X/Y compound design. The center of the work piece's gravity is always located on the center line, the design will perform with optimum accuracy for both light and heavy work pieces.



Moving Column Design for AX series

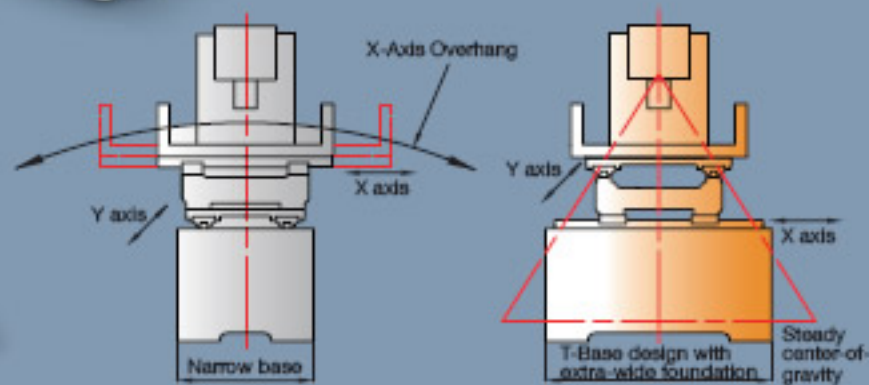
Frame of AX-6040

AX series Moving Column Design

Meets the high machining demand from Medical & Aerospace Industries



Finite Element Analysis



Others: Common Design with Overhang

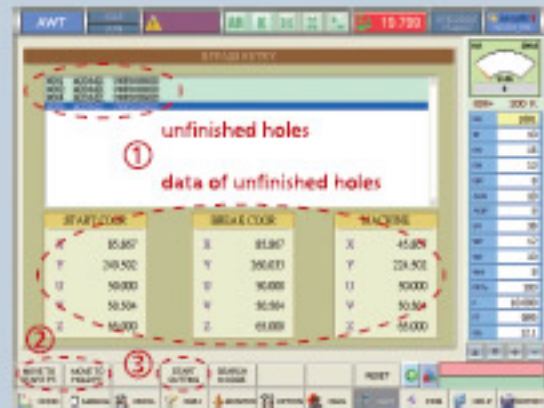
T-Base Rigid Design

Comparison of Table Support

Accutex Controller

100% In-House Developed Accutex Controller

Accutex's core competition power is the in-house developed Accutex controller; this controller sets us apart from the rest of the machine tool industry that rely on using controllers from Europe and Japan. The Accutex R&D Team has fully mastered the controller's key technologies, which allows us to provide best in class service and support to world wide customers.



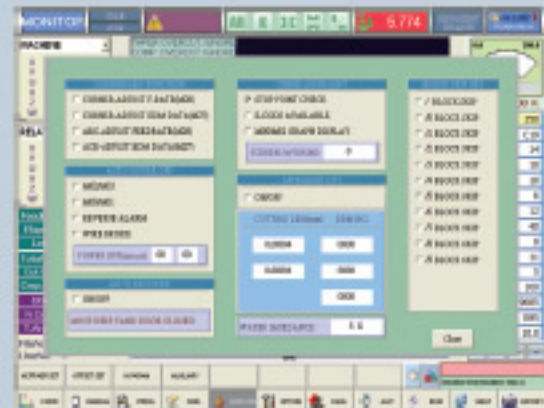
BYPASS Function

While executing multi-hole cutting, in the case of threading failure or any unknown reason that the mold holes can not be cut during the operation, the controller automatically memorizes the uncut mold holes and will skip to the next one. After the last mold hole is done, you may recall the uncut holes from the memory (1), move to the position (2), and continue the unfinished jobs (3).



Simplified NC Code

Using just single G5-G8 command, which is plenty enough to describe the taper and arc shape cutting, reducing the application of segmental G01 commands, and achieves excellent cutting surface on arc or curve interpolation.



High Accuracy with Easy Functions Automation

- Corner Control Function
- Automatic Power Recovery Function
- Approach Cutting Function
- Multi-Blocks Skip Function

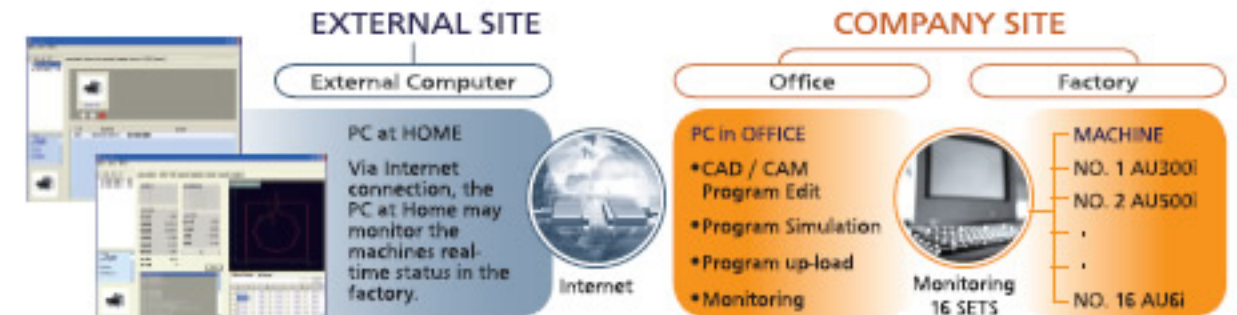


Wire Consumption Offset

The wire becomes thinner by long discharge distance while cutting thick work pieces. Accutex Controller features wire consumption offset function, the offset value is automatically defined by the controller depending on the work piece thickness.

REMOTE MASTER

Your best tool for machining arrangement, monitoring and factory automation.



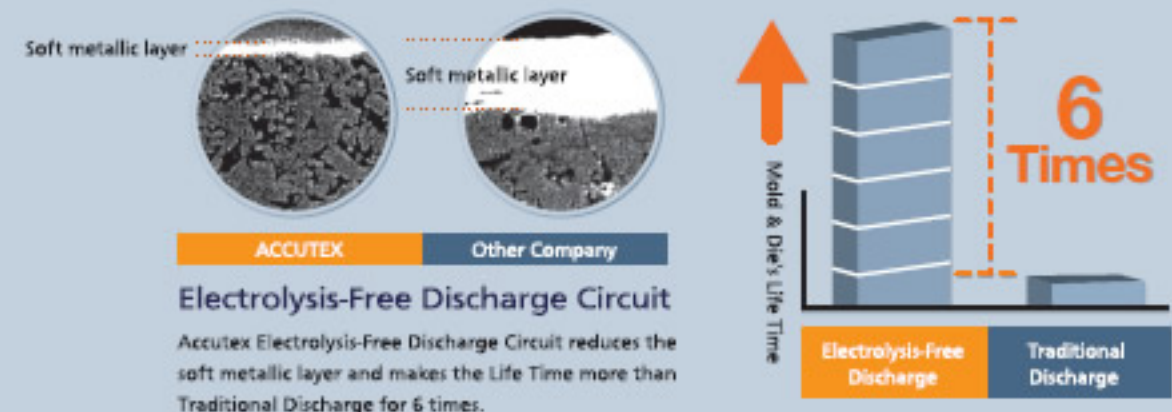
- Simultaneous and real-time monitoring—Increases machines' availability and management efficiency.
- Integrated with your CAD / CAM system, no need to worry about the compatibility between your CAD / CAM and the machine.
- Without staying with machine, you may check the alarm message at the first instance.
- From the monitor in your office or your house, you may see:
 1. All the Accutex machines' cutting time, efficiency and status.
 2. You may assign machining job from distance, and start cutting immediately.



Intelligent High Efficiency Discharge

In order to prevent power losses during transmission, Accutex has adopted the ASIC design. By converting the traditional complex cabling into 7 high stable and compact Integrated Circuits (IC). This approach completely eliminates unnecessary power losses due to the large numbers of cables connected to the terminals; it makes the service diagnosis convenient while saving time and money.

Electrolysis-Free Discharge

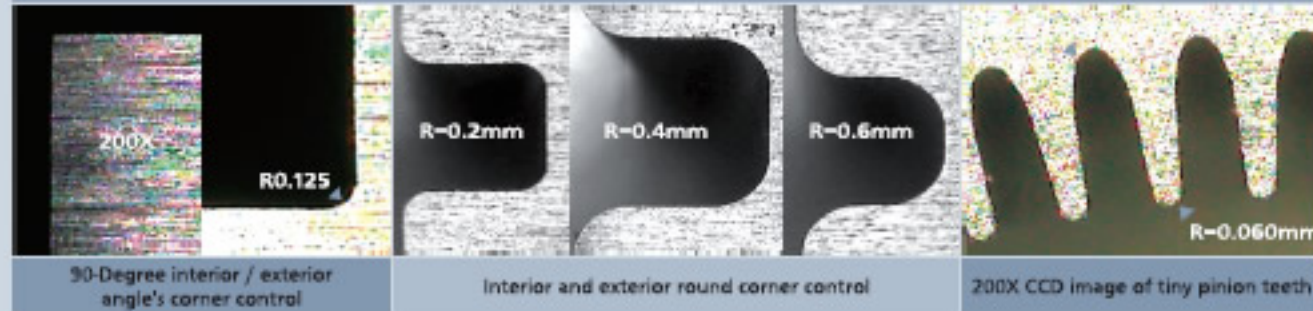


Electrolysis-Free Discharge Circuit

Accutex Electrolysis-Free Discharge Circuit reduces the soft metallic layer and makes the Life Time more than Traditional Discharge for 6 times.

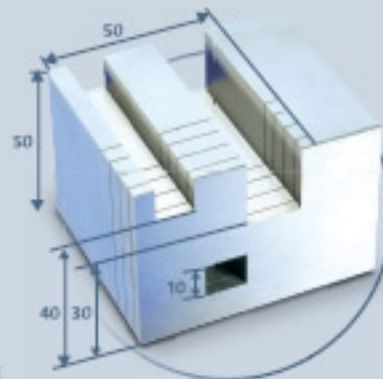
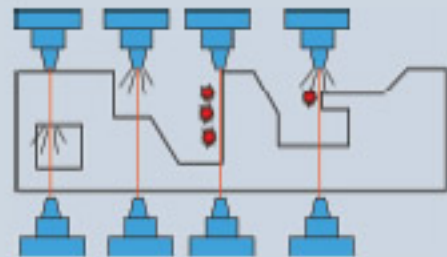
Corner Control

Depending on different cutting data, wire diameter, angle and work piece thickness, the Accutex Controller automatically sets the best parameters to maintain the best corner cutting performance with high accuracy as well as cutting speed.



Irregular Thickness Cutting

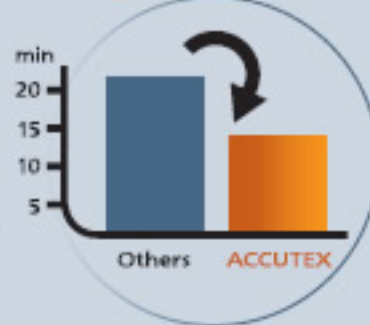
The Accutex intelligent discharge unit is capable of dealing with the changing conditions in work piece thickness and water flushing situations, featuring high cutting speed and free from wire breaking problems.



Irregular Thickness Cutting

With a single work piece with different thicknesses, the maximum cutting speed can be 3.3 mm per minute.

Cutting Time



Efficiency Increased by **34%**

Irregular Thickness Cutting Time

ACCUTEX : 15 min

Others : 23 min

Accutex Submerged type 6th Axis Rotary Table

- With years research and development, Accutex has become the first Wire EDM Manufacture that produces the 6th Axis Rotary Table totally dedicated to the Wire EDM machine.
- The Built-in Type Motorized Spindle features ultra-high resolution of 2.6 million pulses per each revolution, free of backlash problems.
- The entire unit is designed with integration, the water isolation class is IP68, the Accutex Rotary Table may totally submerged in the water and will still maintain high performance and high accuracy.
- Optional Function, suitable with Automatic door or auto loading / unloading system (*)



1 Cut Ra 2.50
2 Cuts Ra 1.80
3 Cuts Ra 0.60
4 Cuts Ra 0.35
5 Cuts Ra 0.18

New Generation MST II

Introducing the next generation of Micro Sparking Technology (MST II), this is a unique Accutex technology in cutting discharge. For a 50 mm thick work piece, the best surface roughness may reach up to Ra 0.18 / Ra 0.20.

The circuit board of MST II is located on the outside of the cutting water tank, it performs with a high degree of stability and high surface roughness, resulting in energy savings and easy maintenance.

(*) Optional Function

Best Surface Roughness

Ra 0.18 on 50 mm thick work piece

Ra 0.15 on 20 mm thick work piece

Wire Diameter : 0.2 mm brass wire

Material : SKD 11

Advanced Technology "Turn and Burn"

6 Axes Controller

Medical-Class Performance

- Advance World-Class technology Accutex Controller.

5 Axes Simultaneous Cutting

- Subject to different application, suitable for flushing or submerged machines.

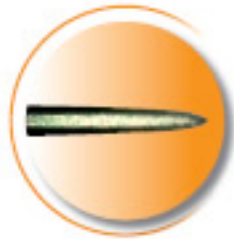
- Suitable for Medical Industries or Aero Space Parts Industries.



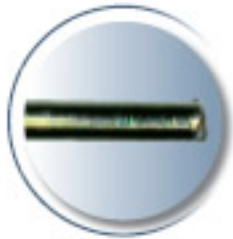
(*) Optional Function

Auto Wire Threading (AWT)

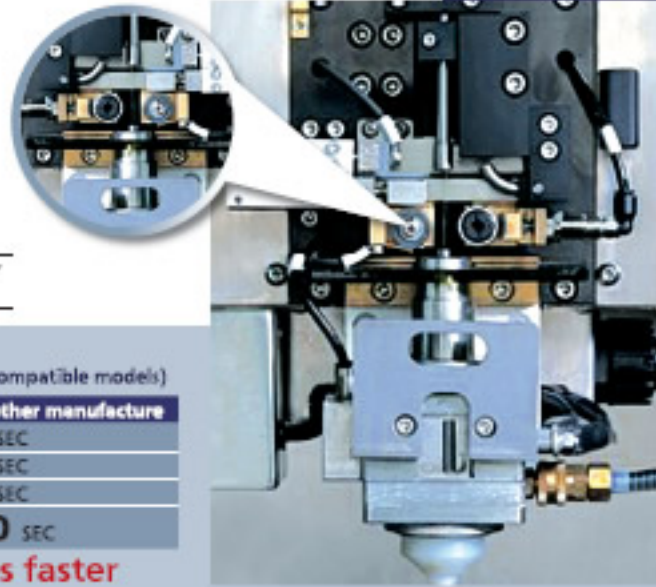
The core technology of Accutex's engineering team, the AWT system may thread the wire in the water at the break point, no need to return to the start point or drain the water out before threading.



Needle-Shaped wire end by Accutex Anneal Cut



Blunt wire end by other brand's scissors cut



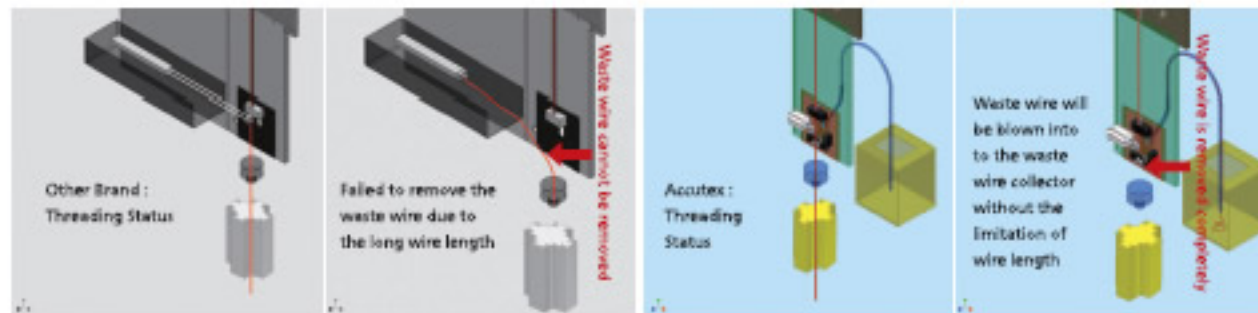
Comparison Chart (By Using AU-500i with other compatible models)

	AU-500i	Similar model of other manufacture
Drainage Time	0 SEC	60 SEC
Wire Threading Time	15 SEC	20 SEC
Water Flooding Time	0 SEC	60 SEC
	15 SEC	140 SEC

Wire Threading time: 9.3 Times faster

The Unique Waste Wire Removing Device

No matter how long the waste wire is, it can be completely removed by the Accutex AWT system. Compared to other brands using mechanical cylinder arm, which limits the waste wire length and detection sensitivity, causing the waste wire not to be removed automatically. Accutex's unique AWT device can remove the broken wire without the restriction of wire length.



Other Brand

By using a mechanical cylinder arm, the waste wire can not be removed if the waste wire length is longer than the cylinder arm's stroke.

(*) Optional Function

Accutex

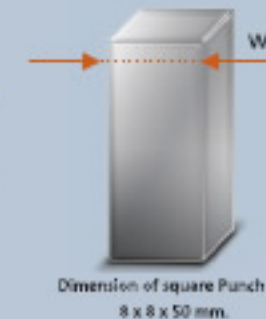
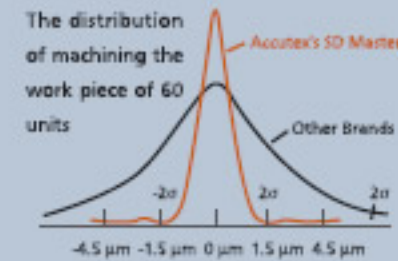
Accutex Waste Wire Removing Device can remove the waste wire with its air blowing design, no matter the length of waste wire, or the position of wire breaking, it can be rapidly removed to the waste wire collector within a short amount of time.

SD MASTER Stable Discharge Board

- The SD Master powers the servo control system, we have designed it smarter and with more stability to achieve our low wire breaking rate.
- Stable Discharge performance enhances the accuracy of work pieces and raises machining repeatability.
- One cut accuracy for $\pm 2\sigma$, which is within $\pm 1.5\mu\text{m}$. (95.45% of all 60 work pieces' accuracy are within $3\mu\text{m}$ variation, all 60 work pieces were cut in different time period in two months.)



One Cut Only Measuring accuracy chart for 60 work pieces



WITHOUT SD MASTER		WITH SD MASTER	
Work Piece No.	Value "W"	Work Piece No.	Value "W"
1	7.995	1	7.999
2	7.998	2	7.999
3	8.002	3	8.001
4	8.004	4	8.002
...
57	8.007	57	8.001
58	8.005	58	8.000
59	8.002	59	8.000
60	7.998	60	8.001
2σ Max. Variation	0.010	2σ Max. Variation	0.003

* Remark: The above cutting performance is done under the control of environmental condition, work piece thickness: 50 mm; Material: SKD 11; Wire Diameter: 0.25 mm Brass wire.



Quality Assurance

Only the real controller manufacturer is able to test each of its own electric circuit boards to ensure they are performing to the highest technical standards. Accutex's R&D team as designed the jig fixture to perform "In Circuit Test" (ICT), which can examine each contact's input / output signals as well as the quality of entire PCB without any mistakes.

In addition, the Emulated Load Test and Burn In Test are also the standard inspection procedures of most controller manufacturers, these tests guarantee the durability and performance of every Accutex Circuit Board.

Application Work Pieces

Spring for Military Purpose

Material	Aluminum	Thickness	15 mm
Passes	1 Pass		
Wire Diameter	φ 0.25 mm		
Cutting Length	13-Thread Cutting		
Features	Rigid Pipe become flexible after W axis cutting		



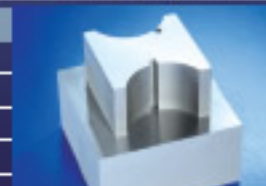
Irregular Thickness Cutting

Material	SKD 11	Thickness	50 mm
Passes	1 Pass	Roughness	Ra 2.1 μm
Wire Diameter	φ 0.25 mm		
Cutting Length	50mm		
Features	50mm, 40mm, 30mm, 20mm, 10mm Various Counter Parts Cutting		



2-Piece Assembly Set

Material	SKD 11	Thickness	Punch 50 mm / Die 30 mm
Passes	3 Passes	Roughness	Ra 0.62 μm
Wire Diameter	φ 0.2 mm		
Cutting Length	Punch 504.957 mm / Die 1205.348 mm		
Features	Fitness of punch and die		



Taper Cutting

Material	SKD 11	Thickness	50 mm
Passes	3 Passes		
Wire Diameter	φ 0.2 mm		
Cutting Length	105 mm		
Features	Cutting with different tilting angle		



Arc & Corner with Taper

Material	SKD 11	Thickness	40 mm
Passes	1 Pass		
Wire Diameter	φ 0.2 mm		
Cutting Length	515 mm		
Features	Cutting with tilting corner		



6-Axis

Material	SKD 11	Thickness	65 mm
Passes	1 Pass		
Wire Diameter	φ 0.25 mm		
Features	6 th Axis Rotary Cutting		



Long Work Piece Cutting

Material	SKD 11	Material	PCD
Passes	1 Pass	Passes	1 Pass
Thickness	500 mm	Thickness	3 mm
Cutting Speed	0.13~0.16 mm/min	Cutting Speed	1.32 mm/min
Wire Diameter	0.3 mm	Wire Diameter	0.25 mm



* Please consult with Acutex Dealers for detailed cutting data *

Machine Specification

Flushing Type						
Model	AU-3i	AU-5i	AU-6i	AU-7i	AU-9i	AU-10i
Max. Work Piece Size L x W x H (mm)	800 x 535 x 215	965 x 555 x 295	965 x 620 x 295	1165 x 655 x 295	1375 x 760 x 295	1685 x 990 x 395 (Option on H495)
Max. Work Piece Weight (kg)	400 kg	500 kg	800 kg	1000 kg	1300 kg	4000 kg
X / Y Stroke	350 x 250 mm	500 x 300 mm	600 x 400 mm	750 x 450 mm	900 x 500 mm	1100 x 650 mm
U / V Stroke	80 x 80 mm	100 x 100 mm	100 x 100 mm	100 x 100 mm	100 x 100 mm	150 x 150 mm
Z Stroke	220 mm	300 mm	300 mm	300 mm	300 mm	400 mm (Option on Z500)
Wire Spool Weight	10 kg	10 kg	10 kg	10 kg	10 kg	16 kg
Foot Print (mm) W x D x H	2650 x 2150 x 2120	2850 x 2300 x 2210	2680 x 2600 x 2210	3000 x 2550 x 2230	3110 x 2830 x 2280	4440 x 3600 x 2750
Water System Capacity	360 L	360 L	360 L	360 L	360 L	360 L
Machine Weight	2400 kg	3200 kg	3500 kg	4000 kg	5000 kg	8000 kg

Submerged Type											
Model	AU-300i	AU-500i	AU-700i	AU-860i	AU-1000i	AX-8040 <small>NEW</small>					
Max. Work Piece Size L x W x H (mm)	765 x 535 x 215	990 x 560 x 265	1190 x 670 x 295	1330 x 990 x 395 (Option on H495)	1685 x 990 x 395 (Option on H495)	950 x 620 x 345					
Max. Work Piece Weight (kg)	300 kg	400 kg	500 kg	4000 kg	4000 kg	1000 kg					
X / Y Stroke	350 x 250 mm	560 x 360 mm	750 x 450 mm	800 x 600 mm	1100 x 650 mm	600 x 400 mm					
U / V Stroke	80 x 80 mm	100 x 100 mm	100 x 100 mm	150 x 150 mm	150 x 150 mm	160 x 160 mm					
Z Stroke	220 mm	300 mm	300 mm	400 mm (Option on Z500)	400 mm (Option on Z500)	350 mm					
Max. Water Level in Working Tank	220 mm	270 mm	300 mm	400 mm (Option on Z500)	400 mm (Option on Z500)	360 mm					
Wire Spool Weight	10 kg	10 kg	10 kg	16 kg	16 kg	10 kg					
Foot Print (mm) W x D x H	2750 x 2560 x 2120	2950 x 2560 x 2210	3230 x 2890 x 2230	3900 x 3600 x 2740	4350 x 3600 x 2740	1900 x 4500 x 2300					
Water System Capacity	Clean Water Tank	Standard	Clean Water Tank	Standard	Clean Water Tank	Standard	Main Water Tank	Sub Water Tank	Main Water Tank	Sub Water Tank	Standard
	1150L	850L	1150L	850L	1450L	1240L	1630L	1040L (Z400) 1280L (Z500)	1630L	1040L (Z400) 1280L (Z500)	860L
Machine Weight	2500 kg	3500 kg	4200 kg	6500 kg	8500 kg	4000 kg					

Standard Specification			
Wire Dia. Applied	0.15~0.33 mm (0.10 Option)	Max. Cutting Taper	±22.5° (Wide-Angle Nozzel H=100, H=80 for AU-3i / 300i)
Simultaneous Axis	XYUV 4 axes / Option on W axis	Water resistance	AUTO 5~200 kΩ-cm
Transmission	5 axes AC servo transmission	Water Temperature	AUTO Control ±1°C

Standard Accessories			
Upper / Lower Flushing Nozzles x 2	Diamond Guides x 2	Conductor Plates x 2	
Diamond Guide Remove Jig x 1	Brass Wire x 1	Tool Box x 1	
Waste Wire Bin x 1	Ion Resin Tank x 1	Ion Exchange Resin	
Paper Filters x 2 / AU-700i x 3 / AU-860i, AU-1000i x 4	Vertical Alignment Jig x 1	Water Chiller x 1	

Option		
SD MASTER	Safety door interlock (Submerged Type Option)	MST II
Auto Wire Threading Unit (AWT)	REMOTE MASTER	XY Linear Scale
Clean Water Tank (Submerged Type Option)	45kg Wire Jumbo Feeder	6-Axis Package
Heat Exchanger	Pilot Lamp	Double Doors (Submerged Type Option)
Transformer	Auto Voltage Stabilizer	Water Jet Threading

* All the specifications are subject to change without prior notice.

Machine Specification

Controller Specification

Controller System	DOS	WIN CE
Control Device	64-bit Industrial PC	64-bit Industrial PC
Memory Device	64 MB DOM	128 MB CF CARD
Screen Display Device	10.4" Color TFT	15" Color TFT Touch Screen
Data Input	Keyboard, RS-232, 3.5" Floppy Disk	Keyboard, RS-232, USB, Ethernet
No. of Control Axes	5 axes / 6 axes (Option on W axis)	5 axes / 6 axes (Option on W axis)
Simultaneous Axes	4 axes / 5 axes (Option on W axis)	4 axes / 5 axes (Option on W axis)
Min. Command Unit	0.001 mm / 0.0001 mm (Option)	0.001 mm / 0.0001 mm (Option)
Max. Command Range	9999.999 mm / 9999.9999 mm	9999.999 mm / 9999.9999 mm
Command Type	mm / INCH	mm / INCH
Cutting Data Memory	9999 sets	9999 sets
Ignition Power Supply	32 steps, 53V~138V	32 steps, 53V~138V
Max. Cutting Speed	250 mm ² /min, 330 mm ² /min (Option)	
On Time	24 steps	24 steps
Off Time	43 steps	43 steps
Discharge Mode	Standard / Smaller Wire / Trim	Standard / Smaller Wire / Trim

Controller Function

Backlash compensation	Pitch compensation	Parallel compensation	2nd. Soft limit
Linear / Circular interpolation	Constant / Servo feed	Different shape interpolation	Auto position (edge, center)
Cutting path display	Auto power recovery	Background edit	Soft limit
Retrace to start point	Trace to break point	Start point return	Corner control function
Reference point setting	Reference point return	Break point return	Diagnosis
Multi-blocks skip	Taper cutting	Auto corner	Z axis anti-collision
Cutting log	Maintenance memo	Program edit / copy / delete	Manual data input
Mirror	Axis exchange	Rotation	Auto / Manual feed
Machine lock	Dry run	Single block	Short back
Option stop	Block stop	Sub program	Wire consumption offset

Requirement of Environment

Power source	AC220V ± 5V : 3 Phase 50 / 60Hz ± 1Hz
Temperature / Humidity	25 ± 1°C : less than 75% RH
Environment	<ul style="list-style-type: none"> The machine should be not placed near punching machine, drilling machine or any interfering sources. The machine should be not placed near heat treatment or electroplate system. The machine should be placed in an airtight room to keep without dust. Before machine positioning, should pay attention on machine movement during operation and the space for maintenance. Solid foundation of horizontal error should less than 20 μm.
Earth construction	Earth resistance below 10Ω; separate the earth terminal with other machines
Pneumatic pressure	≥ 6 kg/cm ² (Applicable for machine with AWT system)

※ Due to continual research and development, specifications are subject to change without notice.

Accutex Series Machines



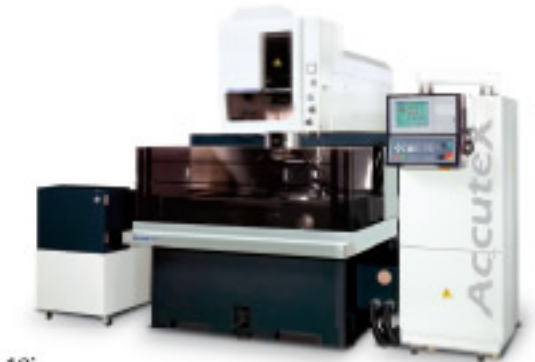
AU-3i / AU-5i / AU-6i



AU-7i / AU-9i



AU-10i



AU-300i / AU-500i



AU-700i



AU-860i / AU-1000i



AX-6040