AccuteX

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Enviromental Requirements

Power Source	AC220V / AC380V / AC400V / AC415V ±5% :3 Phases 50/60Hz±1Hz
Temperature	20±1°C or 25±1°C ； less than 75%RH
Enviroment	1.The machine should not be placed near punching machine,drilling machine or any interfering sources. 2.The machine should not be placed near heat treatment or electroplate systems. 3.The machine be placed in an airtight room to keep dust out. 4.Before machine positioning, pay attention to machine movement during operation and the space needed for maintenance. 5.Solid foundation of horizontal error should be less than 20μm.
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)

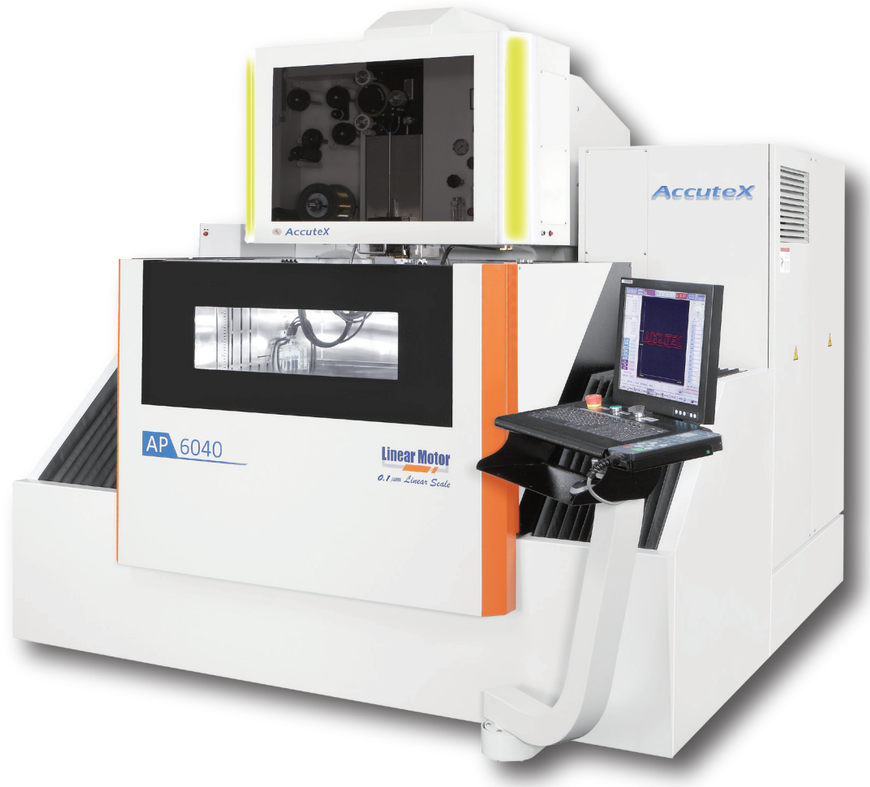
*All the specifications are subject to change without prior notice.

AccuteX

AP Series

Wire Cut EDM

The Best Solution of CNC Wire EDM Technology



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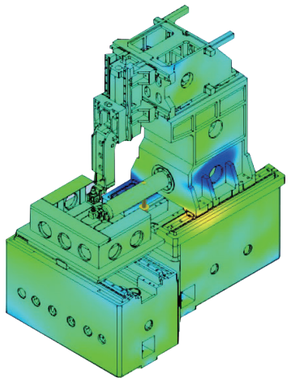
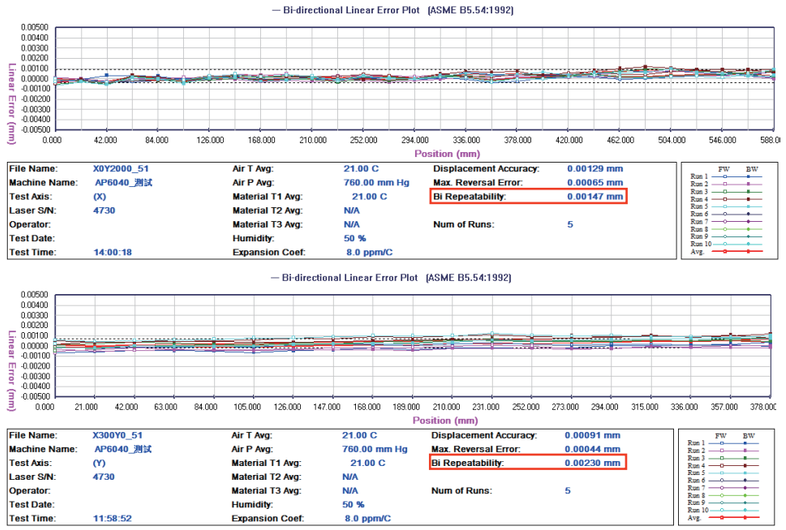
High-Rigidity Structure

AP series casting has compound table design by Y axis column moving. The center of gravity is always located between 2 linear guideways of X axis table. X and Y axes are independent without accumulation error for less deformation by FEA (Finite Element Analysis). Improved maximum loading weight is up to 1000kgs. The Bi-repeatability is less than 2.5μm after 5 times laser calibration.

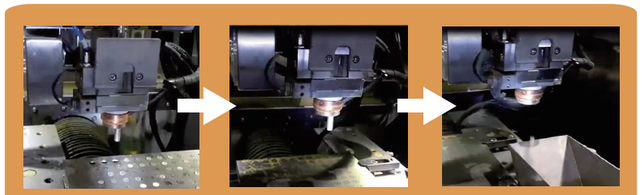


Machine structure was designed via Finite Element Analysis (FEA) with high rigidity.



Five times laser measurements

Core Remove Module (*Optional)



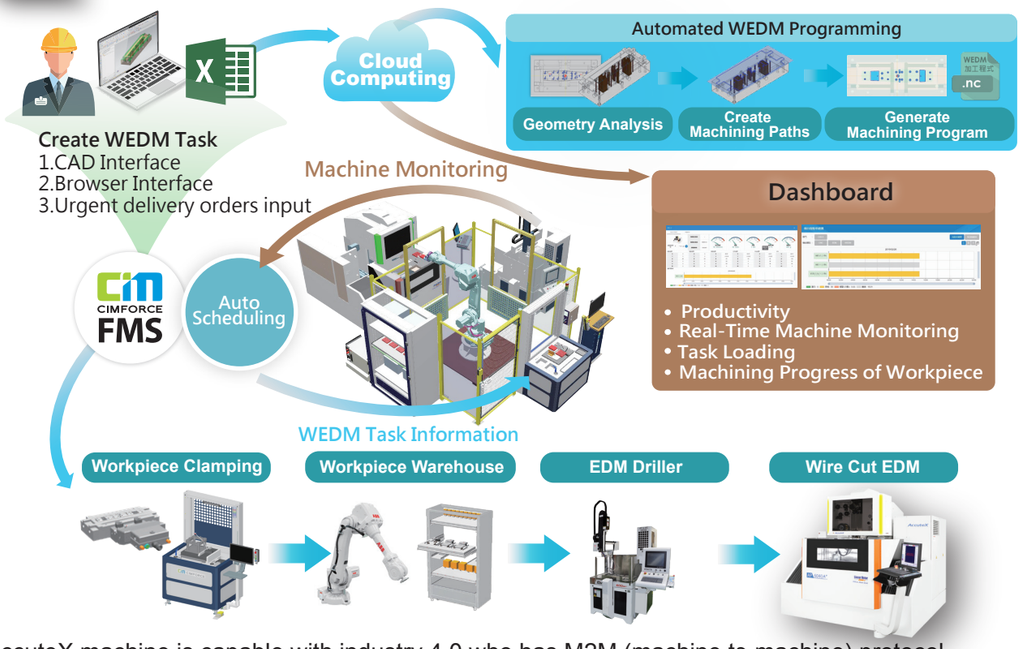
During Wire Cut EDM machining, by using the new-generation flushing nozzle to remove the core automatically can reduce human operation and increase productivity.

- Patented technology to remove core. Patent (No.1676513)
- Integrated with CIMFORCE intelligent manuacturing system and robot to increase productivity.

Auto Wire Threading (*Optional)

- “AC servo tension wheel”, tension control during cutting, featuring reverse tension while wire breaks.
- “Wire End Needle-Shaping”, while the wire is cut off by electricity, the reverse tension and annealing heat treatment are applied to strengthening the wire at the same time.
- ‘’Waste Wire Auto Removing Device ” by air blow system to remove waste wire to the collection cabinet, quick and easily.

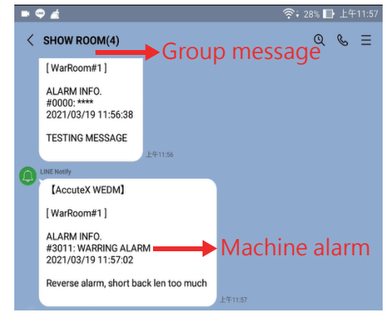
CIMFORCE Industry 4.0 Intelligent Manufacturing Integration System (*Optional)



AccuteX machine is capable with industry 4.0 who has M2M (machine to machine) protocol to collaborate with Robots and other machines. Flexible Real-time production can be made by Intelligent Manufacturing Integration System to meet full-automation demand.

Line Messenger(*Optional)

Real-time communication with the machines via common APPs-Line, no more software expense.
Monitoring the cutting status remotely by your existing Line account.
Push notification to a specific account or group.

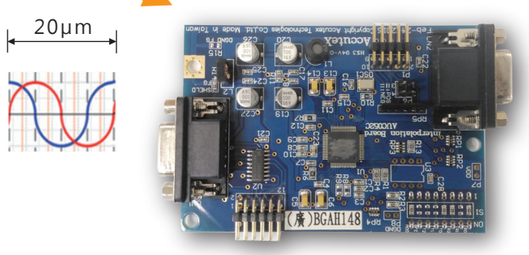


Linear Motor

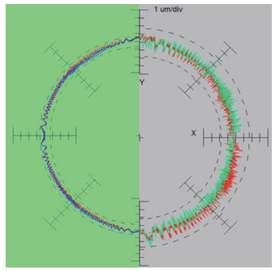
New generation shaft-type linear motor is self-developed by AccuteX. It features with closed loop control by 0.1μm resolution linear scale and backlash free to keep accuracy.
Rapid servo response can improve cutting efficiency up to 10%. AccuteX linear motor has excellent lower power consumption to keep constant working temperature.

Ultra Resolution Signal Processor

Linear scale interpolation board with ultra resolution to achieve smoother velocity and stabilize position control. Standard resolution is 0.1μm.



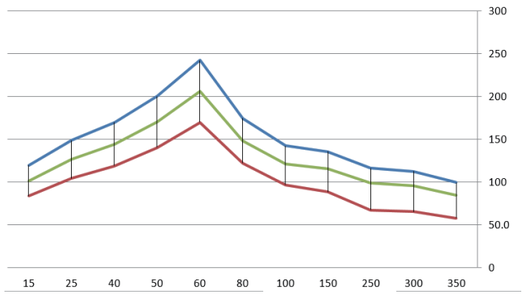
Standard scale can narrow down to 20nm



Different linear-scale resolution

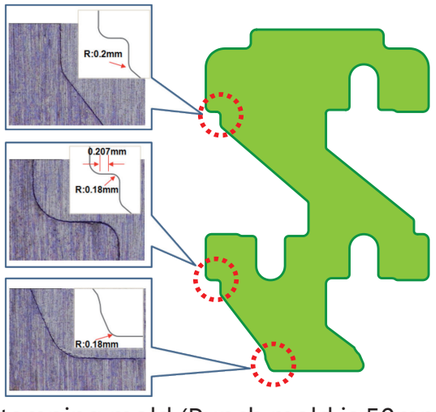
Cutting Efficiency Comparison

AccuteX has simplified the generator and electric circuits to eliminate unnecessary power loss and improve the cutting efficiency.
Speed comparison table with other brands in different thickness of workpieces.



Corner Control Function

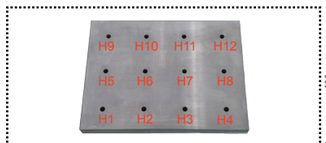
According to different wire diameters, corner angles, arc radius and thicknesses, AccuteX controller optimizes parameters for the best cutting efficiency with high accuracy. Especially on the small path and continuous corners, machines can meet the corner accuracy demand.



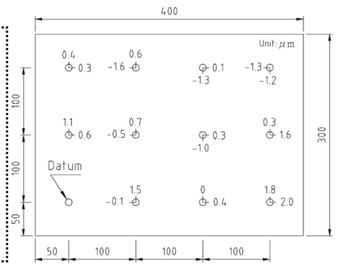
Cutting Speed :
1st Cut : 130mm²/min
2nd Cut : 260mm²/min
3rd Cut : 320mm²/min
Wire : Ø0.25mm
Thickness : 50mm

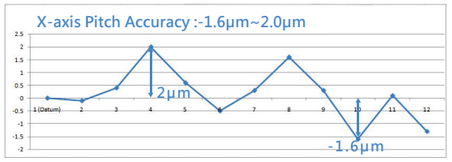
The stamping mold (Punch mold is 50mm and die mold is 30mm) has fine 3μm tolerance.

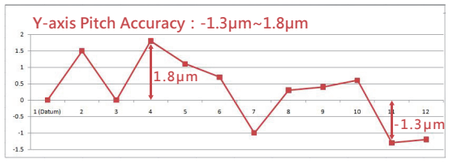
High Cutting Accuracy Performance

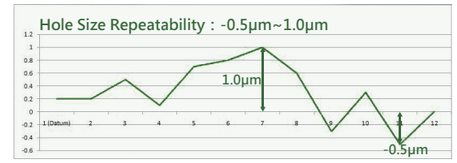


Material	SKD-11
Thickness	30mm
Passes	4 Passes
3D Measuring Instrument	ZEISS AT-1200-200W







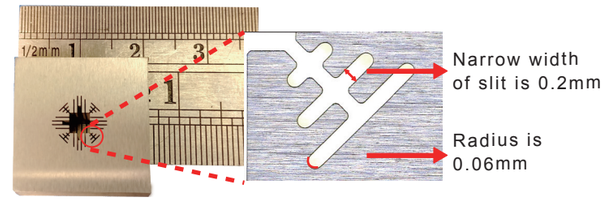


Pitch Accuracy Range≦±3μm

The best pitch accuracy is less than ±3μm in 12 holes mold cutting (size: 400x300x30mm).
The working conditions are by SKD11 material after 4 cuts under temperature and environment control.
(*)The cutting conditions must follow AccuteX's provisions.
(*)Performed by AP-4030A

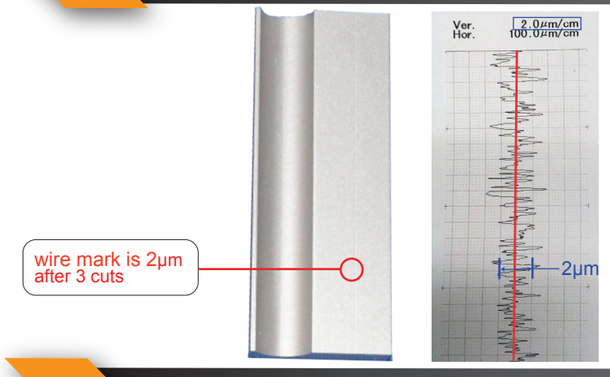
0.07~0.1mm Fine Wire Application (*Optional)

0.07mm Fine wire application is 90% successfully threading under 30mm Z axis height which is suitable for micro-machining applications.



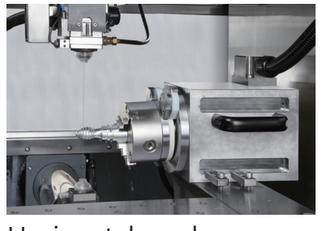
Spinneret projection mold was cutted by 0.07mm wire.The average width of slit is 0.2mm after 5 cuts. The smallest radius is 0.06mm.

New Lead-In / Lead-Out Control

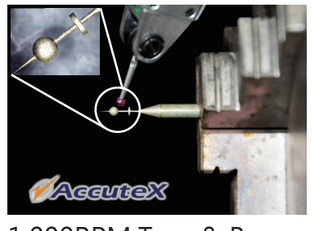


New generation of Lead-In / Lead-Out function is available for Tungsten Carbide. The wire mark is 2μm after 3 cuts by 40mm thickness which improving mold quality and saving second time polishing hours.

Rotary Table Package (*Optional)



Horizontal mode

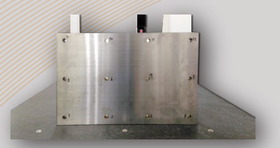


1,000RPM Turn & Burn

Accutex Rotary Table Package is leading ahead of other WEDM manufacturers by years in R&D which can be applied to submerged operation.The Built-in Type Motorized Spindle features ultra-high resolution 720,000 pulses each revolution, free of backlash problems.
Standard 120RPM spindle speed, optional 1,000RPM high-speed spindle for Turn & Burn application.

Cutting Samples

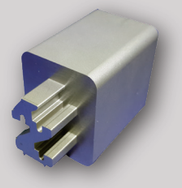
Pitch Accuracy



- The best pitch accuracy is <±3.5μm by SKD11 mold (size: 400x300x30mm) with 12 holes cutting.
- Performed by AP-6040A model

Material	SKD11
Thickness	30mm
Wire size	0.25mm
Cut	3

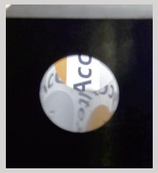
Continuous Corner



- Keeping equal tolerance in continuous corner.
- Continuous radius is 0.18mm Short path is 0.207mm

Material	SKD11
Thickness	Punch50mm Die 30mm
Wire size	0.25mm
Cut	3

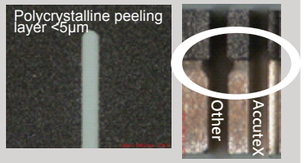
Fine Finish Ra0.06μm
(Optional MST II Power Module)



- The best fine finish: Ra is 0.06μm;(Rz is 0.65~0.75μm).
- Average fine finish in 4 sides of circle die.

Material	Tungsten Carbide
Thickness	30mm
Wire size	0.2mm
Cut	9

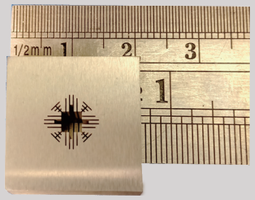
PCD Application
(Optional PCD / Graphite Power)



- Polycrystalline pelling layer is <5μm by optional PCD power with less grinding hours.
- Clear fit between PCD and carbide connection.

Material	PCD
Thickness	1mm
Wire size	0.2mm
Cut	1

Super Fine Spinneret
(Optional Wire 0.07~0.1mm)



- Narrow width of slit is 0.2mm
- Radius is 0.06mm

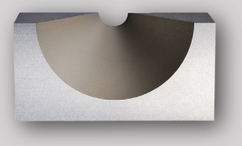
Material	Tungsten Carbide
Thickness	5mm
Wire size	0.07mm
Cut	5

Helical Gear Cutting
(Optional Rotary Table)

- Vertical type for rotary table application
- Gear diameter is 380mm

Material	Steel
Thickness	25mm
Wire size	0.25mm
Cut	2

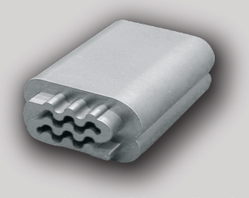
35˚ Wide Taper Cutting



- Plastic Injection Application
- Single side tapper is 35˚

Material	SKD11
Thickness	40mm
Wire size	0.25mm
Fine finish	Ra<0.7μm
Cut	3

High Slenderness Ratio & Complex Profile Assembling Parts



- Stamping Mold Application
- Maximum tolerance is less than 5μm/80mm

Material	SKD11
Thickness	80mm
Wire size	0.2mm
Cut	5

Lead-In / Lead-Out

- 2μm wire mark on thickness 40mm tungsten carbide after 3 cuts.
- Only turn on the function without any cutting path modifications.

Material	Tungsten Carbide
Thickness	40mm
Wire size	0.25mm
Cut	3

Machine Specifiations

	AP-4030	AP-6040
Max. Workpiece Size L x W x H (mm)	800 x 560 x 265	1050 x 775 x345
Max. Workpiece Weight (Kg)	800	1000
X/Y Stroke (mm)	400 x 300	600 x 400
U/V Stroke (mm)	160 x 160	160 x 160
Z Stroke (mm)	270	350
Max. Cutting Taper (mm)	±32°/H100mm	±32°/H100mm
Max. Wire Spool Weight (Kg)	16	16
Foot Print (mm) W x D x H	2145 x 2750 x 2250	2312 x 2795 x 2371
Water System Capacity (L)	680	1000
Machine Weight (Kg)	4500	5000

(*) “A” stands for AWT optional.

Controller Functions

Backlash compensation	Pitch compensation	Program management	Program edit Program simulation
Anti- Collision	Program show / Hide	Linear / Circular interpolation	Auto corner
N code move	Sub program	Multi-blocks skip	Corner control function
MDI function	Taper setting	4 axes cutting	M01 stop
Single block	Mirror	Cutting path rotation	Axis exchange
Short back	Constant feed / Servo feed	2nd software limit	Axis Rotation
Pick up function	Dry run	Single block stop	Reference point setting
Reference point return	Retrace to start point/Start point return	Auto Power recovery (Option)	Diagnosis
Cutting log	Maintenance dashboard	Compensation for wire comsumption	Lead-in / Lead-Out Control

Controller Specifications

Controller System	Windows
Control Device	64-bit Industrial PC
Memory Device	≥1GB CF Card
Screen Display Device	Color TFT Touch Screen
Data Input	Keyboard, Mouse, RS-232, USB, Ethernet , FTP
No. of Control Axes	5 Axes/ 6 Axes(Option on W Axis)
Simultaneous Axes	4 Axes/ 5 Axes(Option on W Axis)
Min. Command Unit	0.0001mm
Max. Command Range	±9999.9999mm
Command Type	mm/inch
Cutting data Memory	99999 Sets
Ignition Power Supply	32 Steps，53V～138V
On time	24 Steps
Off time	43 Steps
Discharge Mode	Rough Cut / Skim Cut / Fine Cut

Standard Accessories

- SD Master
- Touch Screen
- XY Axes Linear Motor System
- XY Axes 0.1μm Resolution Linear Scale
- Anti-Collision on XYUV Axes
- Safety Door Interlock
- Automatic Sliding door
- Upper / Lower Flushing Nozzle
- Diamond Guide
- Conductor Plate
- Brass Wire
- Ion Exchange Resin
- Ion Resin Tank
- Paper Filter
- Waste Wire Bin
- Vertical Alignment Jig
- Diamond Guide Remove Jig
- Tools and Clampers
- Machine Status Indicator
- Tool Box
- CE Conformity Configuration

Optional Accessories

- Transformer
- Auto Voltage Stabilizer
- Water Chiller
- MST Power Module
- PCD / Graphite Power Module
- Rotary Table Package (W axis)
- 0.07mm~0.1mm Fine Wire Application
- Auto Wire Threading (AWT)
- High Pressure Water Jet Threading
- 45Kg Wire Jumbo Feeder
- Remote Master
- Line Messenger
- Anti-Collision on Z-Axis
- Core Remove Module
- Wire Chopper
- CIMFORCE Intelligent Manufacturing System