

Lead with the leader

**High-Precision,
High-Speed
CNC Wirecut EDM**

Ultima Series



Lead with the leader

About Electronica

Electronica Machine Tools Ltd. and the EDM Technology have been synonymous for more than three decades. In fact, Electronica pioneered indigenous EDMs way back in 1973.

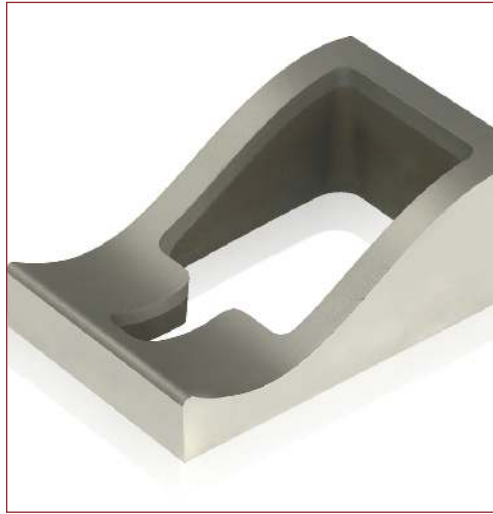
Now, Electronica presents CNC Wirecut EDMs with new features, new applications and new benefits. With, of course, the proven economy in operation and lower cost of ownership. Our new, proud introduction, the ULTIMA SERIES is the ultimate choice for you to lead all the way.



Ultima Series

CNC Wirecut EDM

High Precision, High speed



Max. cutting speed
250 mm²/min

Best surface finish
0.25 μ Ra

Ultima 0F/0S

- Table traverse : 320 x 220 mm
- Table size : 655 x 350 mm
- Max. workpiece height : 200 mm

Ultima 1F/1S

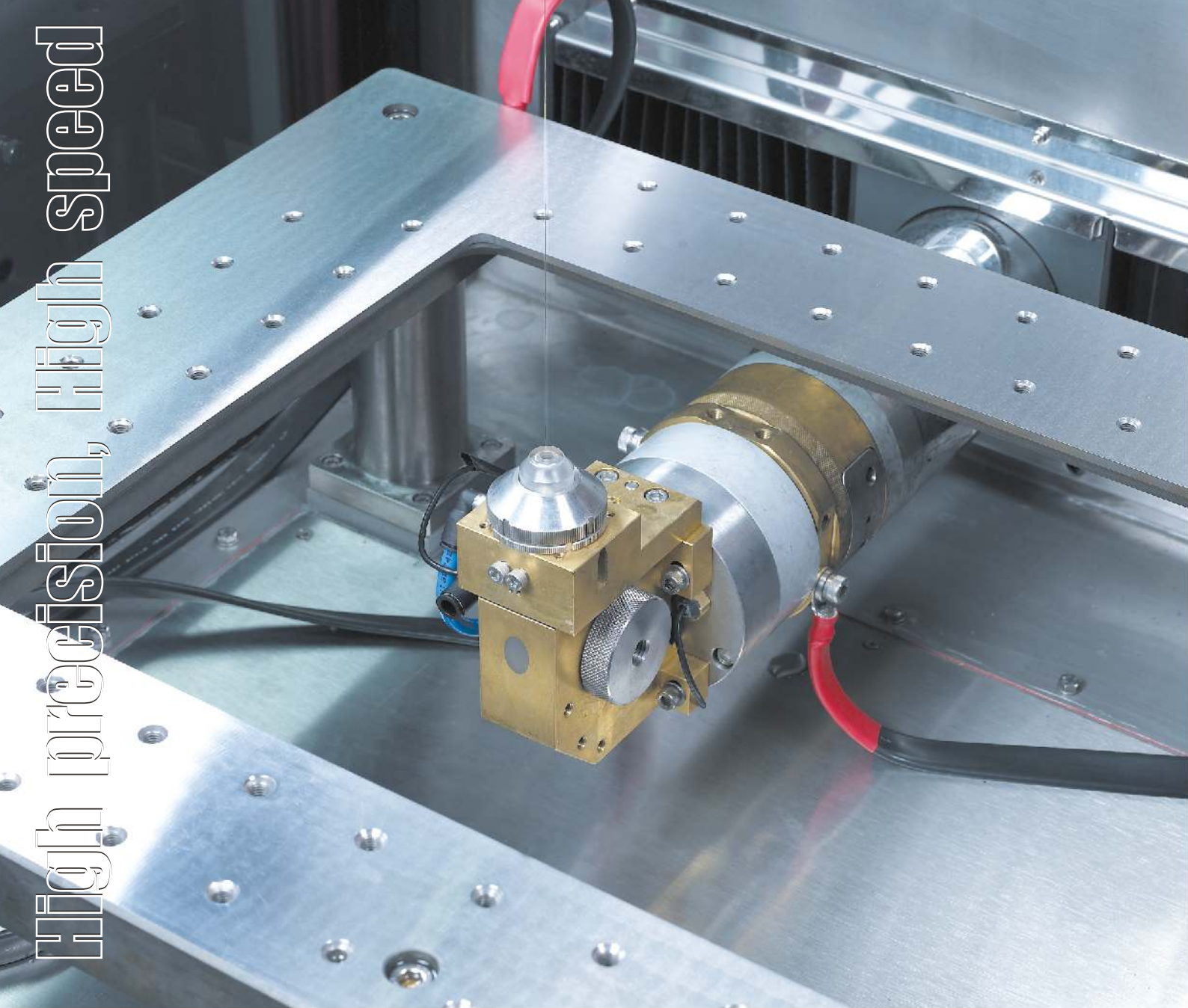
- Table traverse : 500 x 300 / 400 x 300 mm
- Table size : 800 x 540 / 720 x 490 mm
- Max. workpiece height : 260 / 250 mm

Ultima 2F/2S

- Table traverse : 600 x 400 mm
- Table size : 910 x 580 mm
- Max. workpiece height : 350 mm



High precision, High speed



Wide cross-section of wire guide arm

Stainless steel, non-corrosive hardened worktable



Wire spool capacity 8 kg

High-precision 5 axes CNC Wirecut EDM

- FEA verified rugged machine tool
- Wide cross-section of wire guide arm
- Stainless steel, non-corrosive hardened worktable
- Wire spool capacity 8 kg
- Most compact footprint
- Directly coupled AC Servo motors
- LCD touch panel
- Ethernet for networking and remote monitoring
- Capability of machining Poly-Crystalline Diamond
- 16-step programmable flushing
- Compact wire chopper
- Large surface area paper filter specially designed by MANN, Germany
- Resin bowl - Large capacity of 16 Liters



Hand-held remote control



Compact wire chopper



Large surface area paper filter specially designed by MANN, Germany



LCD touch panel

High precision, High speed

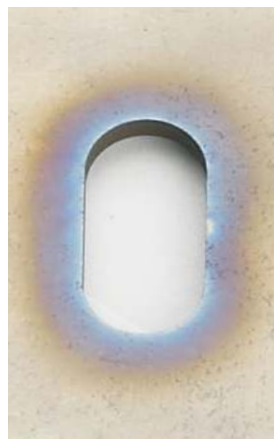


CNC Controller eWinCNC

Titanium machining



With ae^2 Pulse



Without ae^2 Pulse

Machined surface



With ae^2 Pulse

CNC Pulse Generator

High-speed, High-precision CNC

- Multiprocessor, open-architecture CNC, continuous path control
- 32-bit CPU architecture for MMI
- 56-bit DSP motion control
- Large program memory with back up
- Independent programming for X, Y, u, v axes allows merge facility for different top and bottom profile programs
- Program transfer through USB and RS 232C
- Best surface finish : 0.25 μ Ra

NC Functions

- 6 work co-ordinate system
- Auto reference point return

- Auto wire verticality, edge finding and center finding
- On-line edit facility and directory option
- Automatic parameter selection
- Rotation of program
- Single block execution
- Resumption of cutting from 'power fail' position
- Background editing for preparation of the next job
- Corner control strategy to enhance profile accuracy
- Monitoring of consumables
- On-screen maintenance check
- 16-step programmable pressure flushing
- Auto alignment of the workpiece

Program Compensations

- Wire diameter compensation on contour
- Backlash compensation
- Pitch error compensation
- EDM machining parameter override
- Automatic wire offset selection

Servo System

- Quick-response, directly coupled closed-loop AC Servo systems for X, Y, u, v, Z axes
- Higher JOG speed : 2000 mm/min.
- High-resolution linear optical scale for X, Y, axes (optional for flush type)

Pulse Generator

- Conforms to IEC 60204 standards
- UPS from APC for auto power recovery

ae² Pulse Technology

- ae² Pulse = ePulse + anti-electrolysis power supply
- ae² Pulse technology, the product of extensive R & D features two characteristics.

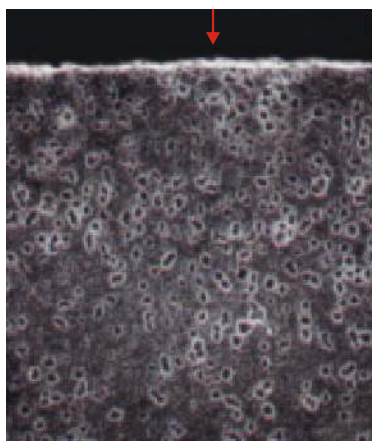
ePulse

- Stable machining without wire breakages normally occurring in difficult machining conditions such as
 - Flushing nozzle away from the workpiece
 - Stacked workpieces of different materials
 - Cutting at the edge of the workpiece
- Higher cutting speed even on smaller workpiece thickness

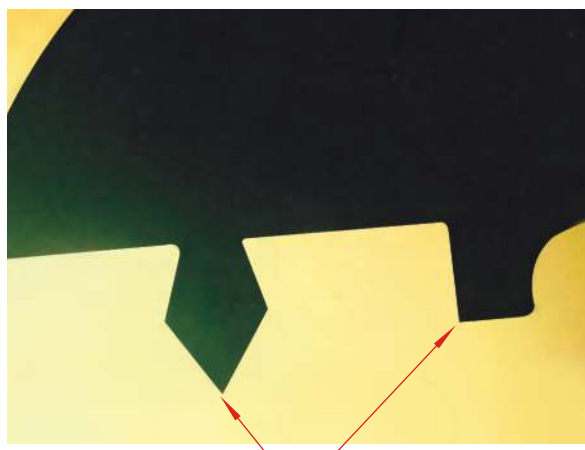
Anti-electrolysis Power Supply

- ae² Pulse prevents electrolytic corrosion. It offers excellent rust prevention and reduces recast layer significantly, thus enhancing the overall life of the tool.
- In case of machining of hard materials like carbides, depletion of binding material is minimised, keeping the original strength of the material intact, thus enhancing the overall life of the tool.

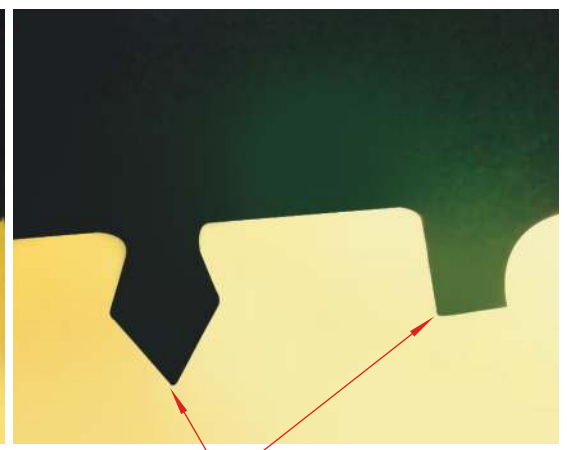
Corner control strategy



Without ae² Pulse



With corner control strategy

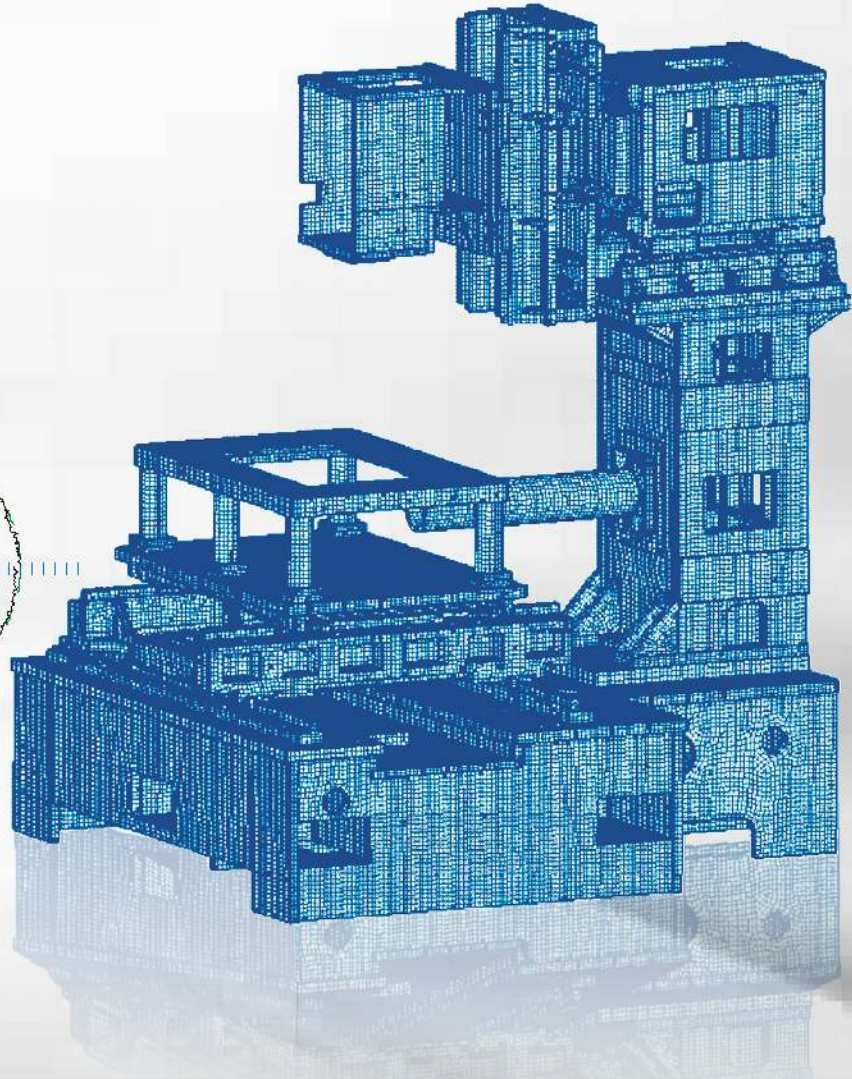
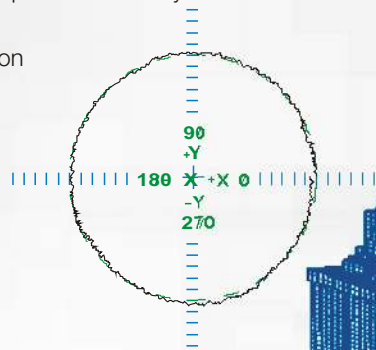


Without corner control strategy

Machine Tool

FEA Verified Rugged Machine Tool

- Conforms to ISO:14137 standards
- Wide cross-section of wire guide arm
- Integrated u, v axes located outside working areas with large stroke of 100 x 100 mm permit $\pm 35^\circ$ taper over 50 mm height
- Precision LM guideways for all 5 axes (X, Y, u, v, Z) for improved accuracy and enhanced life
- Centralised lubrication



Renishaw Ballbar Test

Dynamic ISO 230 - 1

Circularity : 3.8 μm

Maximum : +2.2 μm 291.8 $^\circ$

Minimum : -1.6 μm 0.0 $^\circ$

Scale : 5.0 μm /div.

Optional

- Automatic Wire Threading (AWT) for 0.2 and 0.25 mm dia. wire with programable Retry and automatic Skip functions
- De-coiler unit for up to 45 kg wire spool for unattended operation
- High-resolution optical linear scales for X, Y axes for flush type
- Programable indexing B axis
- Auto wire verticality jig
- Add-on Mineral Bed Filtration (MBF) for pre-filtration (only for Flush type)



AWT



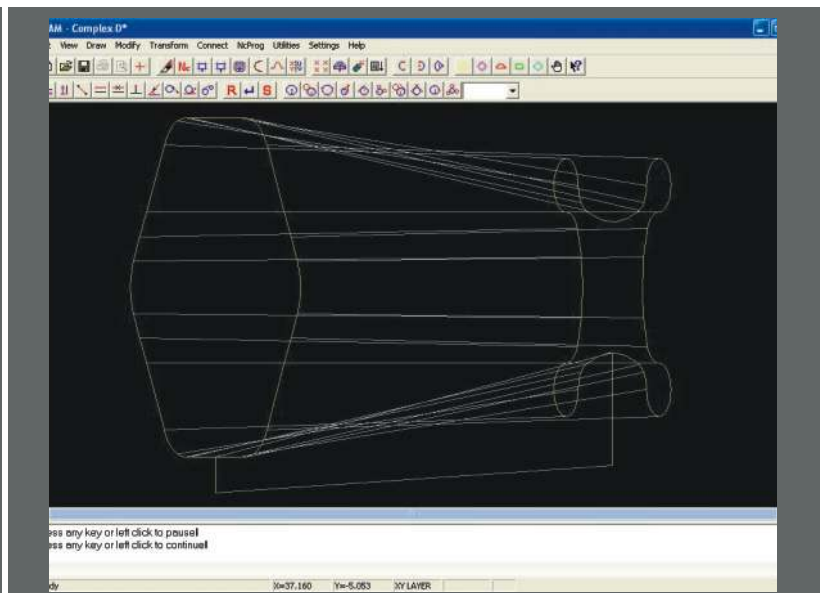
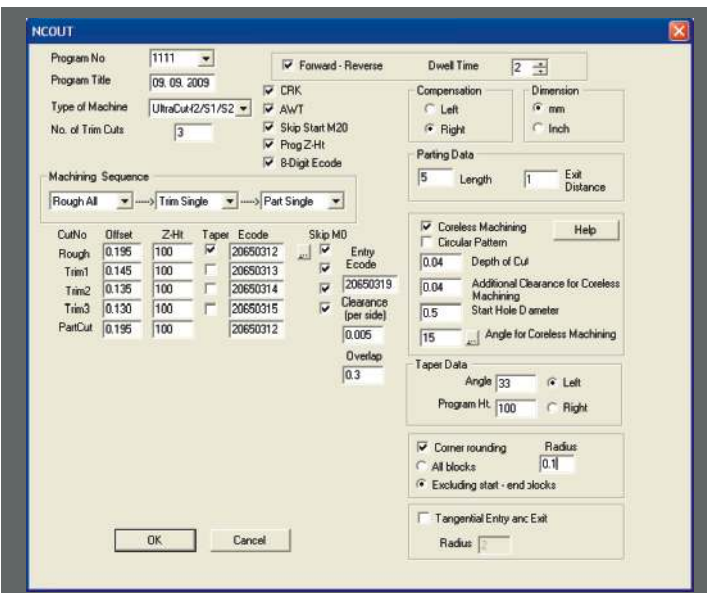
De-coiler unit 16-45 kg (optional)

ELCAM

Powerful Part Programing Software-II

- Windows-based editor (more flexibility in operation)
- Automatic installation facility
- Single screen with all toolbars around
- Powerful path generation and edit functions
- Icon-based (symbolic) toolbars (less language dependent)
- Context-sensitive descriptive help (no need to refer to the manual)
- Automatic Start & End block generation at appropriate blocks in NC program
- Automatic tangential Entry & Exit
- 3D graphic simulation of complex profiles
- Taper or offset change and marking
- DXF interface
- Auto parameter selection
- Programmable, multiple Try & Skip cavity function for AWT
- Multiple language support
- Program generation for core-less machining

of constant radius blocks is possible





Complex Profile

Material : HcHcr
 Wire dia : 0.25 mm
 Thickness : 80 mm
 No. of cuts : 1
 Machining time : 2hr. 45min.
 Surface finish : 2.6 μ Ra



Graphite Electrode

Material : Graphite
 Wire dia : 0.25 mm
 Thickness : 50 mm
 No. of cuts : 1
 Machining time : 9hr.10 min.
 Surface finish : 2.2 μ Ra



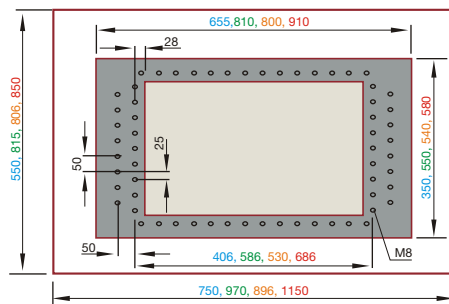
Height Cutting

Material : HcHcr
 Wire dia : 0.25 mm
 Thickness : 200 mm
 No. of cuts : 1
 Machining time : 6hr. 30min.
 Surface finish: 2.0μ Ra

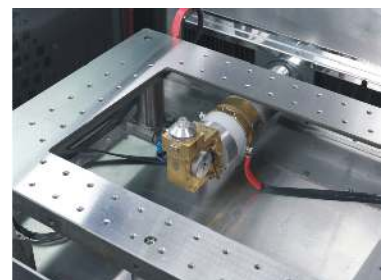
Technical Specifications

Machine Tool	New ULTIMA 0 *		ULTIMA 1		ULTIMA 2		New ULTIMA 3 *	
	F	S	F	S	F	S	F	S
Main axes traverse	320 x 220 mm		500 x 300 mm		400 x 300 mm		600 x 400 mm	
Max. workpiece height	200 mm		260 mm		250 mm		350 mm	
Max. workpiece weight	300 kg		500 kg		800 kg		1000 kg	
Aux. axes traverse	80 x 80 mm		100 x 100 mm		120 x 120 mm		120 x 120 mm	
Max. taper angle	30°/50 mm		35°/50 mm		35°/50 mm		35°/50 mm	
Max. cutting speed	250mm ² /min. (with 0.30 mm dia. Special wire on 50 mm workpiece height)							
Best surface finish	0.25*μ Ra							
Work table size	655 x 350 mm		810 x 550 / 720 x 490 mm		910 x 580 mm		1145 x 800 mm(C type)	
Max. JOG speed	1500 mm/min.		2000 mm/min.		2000 mm/min.		2000 mm/min.	
Resolution	0.0005 mm							
Max. wire spool capacity	8 kg (16-45 kg optional with de-coiler)							
Wire electrode diameter	0.25 mm (standard) 0.1, 0.15, 0.2, 0.3 (optional)						0.25 mm (standard) 0.2, 0.3 (optional)	
Wire spool size	DIN 125, DIN 160, P-3-R, P-5-R							
Wire feed rate	0-15 m/min.							
Wire tension	0 - 2.5 kg							
Pulse Generator								
Pulse peak voltage	3 steps							
Max. machining current	25 A							
CNC controller	EMT 100W-5							
Controlled axes	X,Y,u,v,Z simultaneous/independent							
Interpolation	Linear and circular							
Least input increment	0.001 mm							
Least command input (X,Y, u, v)	0.0005 mm							
Max. programmable dim. (X,Y, u, v)	± 99999.999 mm							
Input power supply	3 phase AC 415V (+/- 1%) 50 Hz (Alternate voltage/frequency ratings available on request)							
Connected load	13 kVA							
Average power consumption	11 kVA							
Data input/output	Keyboard : standard ASCII, Track ball, Isolated RS-232C serial interface, USB port, Ethernet port (LAN)							
Dielectric Unit								
Dielectric fluid	De-ionised water							
Dielectric tank capacity	480 Liters		500/800 Liters		500/925 Liters		500/1750 Liters	
De-ion capacity	16 Liters							
Paper filter	Inside out type, 10 μ							
Dielectric cooling capacity	2100 kCal.							

Work tank



- OS
- 1F
- 1S
- 2S



Ultima Series

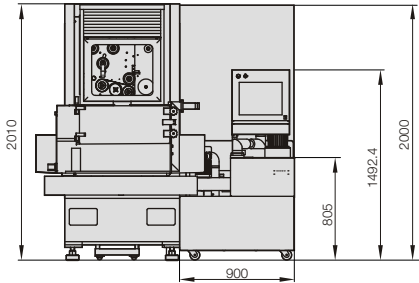
CNC Wirecut EDM

High Precision, High speed

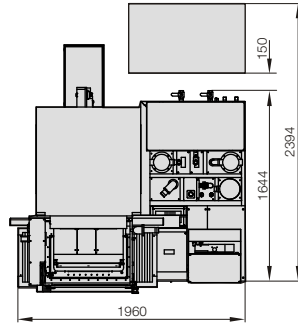
Floor Plan

Ultima 0F/ 0S

Front view

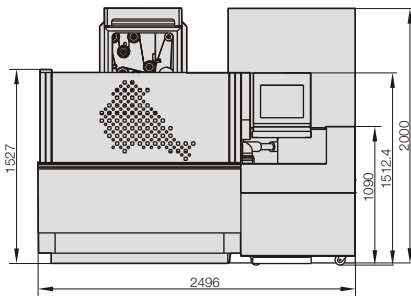


Top view

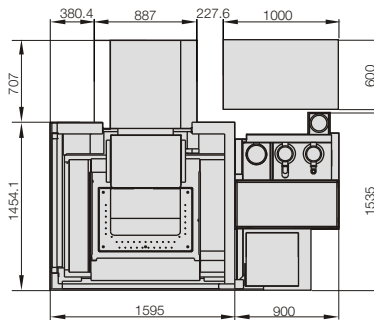


Ultima 1F

Front view

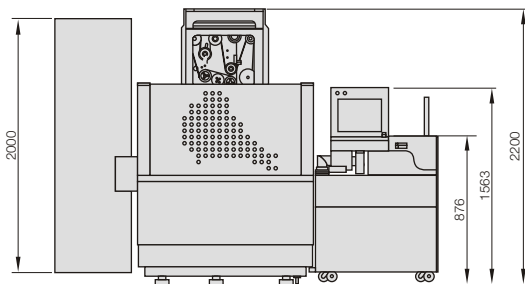


Top view

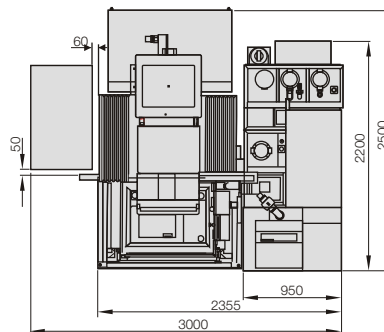


Ultima 1S

Front view

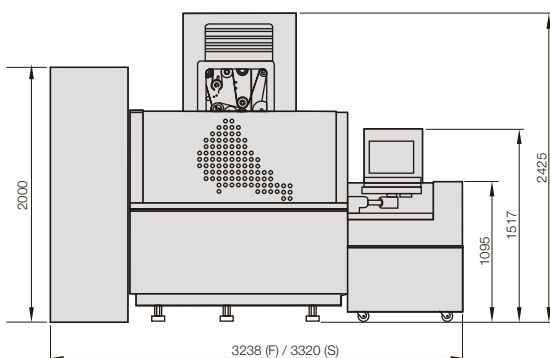


Top view

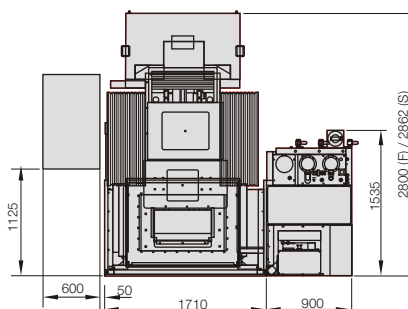


Ultima 2F/2S

Front view



Top view





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In keeping with our constant endeavour to meet ever changing market needs, we reserve the right to alter or change the specifications mentioned without prior notice.

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