



# EX Series

Latest Technology CNC Wire EDM For Future

5  
Axes  
Control

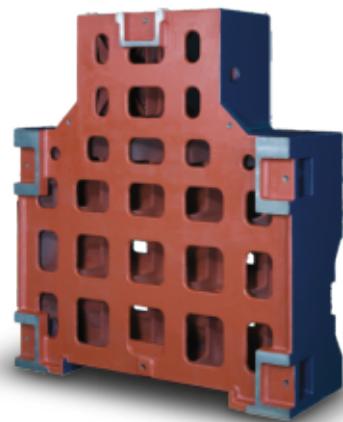
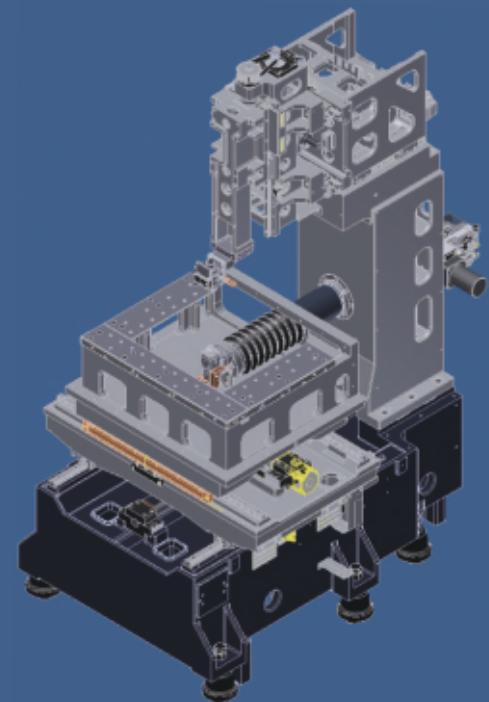


Co - Produced in India with Technology from  
**EXCETEK** - A **YCM** group company

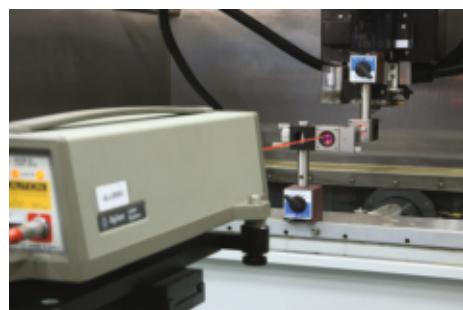
- To ensure thermal balance, rib location is designed by Finite Element Analysis (FEA) assuring an optimized rigid structure.
- Rigid U & V axis design.
- High response AC servo motor to provide good accuracy.
- Water-cooled lower arm prevents thermal expansion resulting improvements on job accuracy.
- LED type work Lamp

# EX40

# EX400



A rugged cast iron design is the foundation of precision



Ensured Position Accuracy by Laser Calibration



Close Loop Linear Scale (Option).

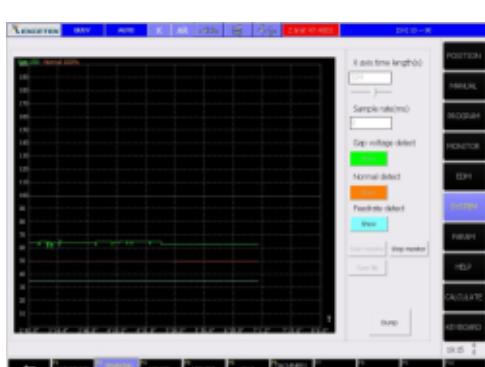
## High Frequency Calculating and Pulse Control

Used by embedded system. This reduces loading of the control circuit.

Sparking relevant information can monitor real time feedback and it makes spark stability.



Auto Conicity Control



Sparking Efficiency Graph



Software Boundary Limit

- 5-Axes close loop CNC control.
- Front loading machine.
- Programmable Z-Axis
- Auto wire verticality alignment system.
- Auto guide span (DA/DB) calibration system.
- Hand held remote control unit with axes coordinate display

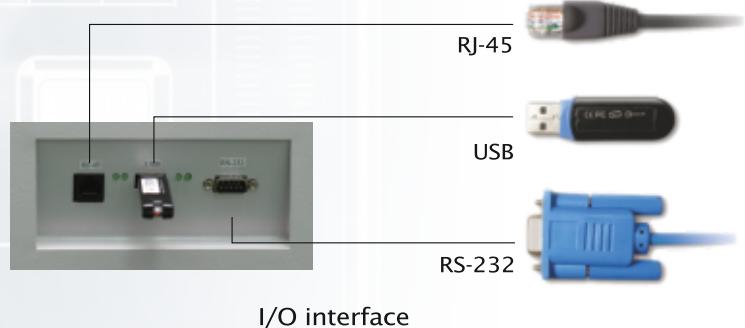
# EX50

# EX500



## EX-Series W6 controllers

- CNC Device: Window based Industrial standard PC.
- CPU: Pentium 64-bit high speed CPU.
- Operational Interface: 15" TFT Monitor, Keyboard, Mouse, Buzzer.
- Three modes of data transfer namely LAN, RS-232 and USB.
- Used CRC system to verify received data.
- Memory Capacity: 2 GB industrial standard CF card.
- Min command input unit: 0.0001 mm.
- Programmable dimension  $\pm 9999.9999$  mm.
- Switchable Units: Inch/Metric.



Handheld Remote Control Unit



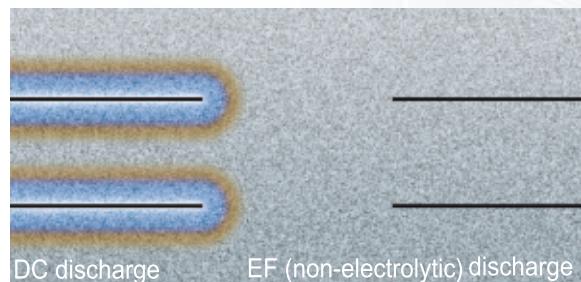
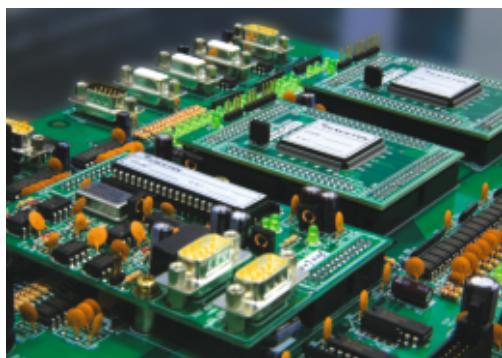
Window Based Operating System

- 3Point Referencing system
- Stainless steel worktable hardened with 50° HRC.
- 8-step programmable flushing control.
- Real-time sparking detection system gives high response feedback and makes spark erosion steady.
- Auto power recovery.

# EX60 EX600

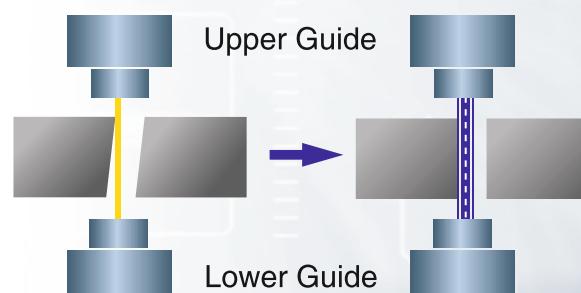


## *The generator*



### EF Electrolysis Free (AC Power Generator)

EF Electrolysis Free Generator System is a new design which provides cutting performance.



A short circuit occurs due to a start hole position error or the hole is on an angle.

Short circuit feature eliminate this condition.

### Modular Designed System

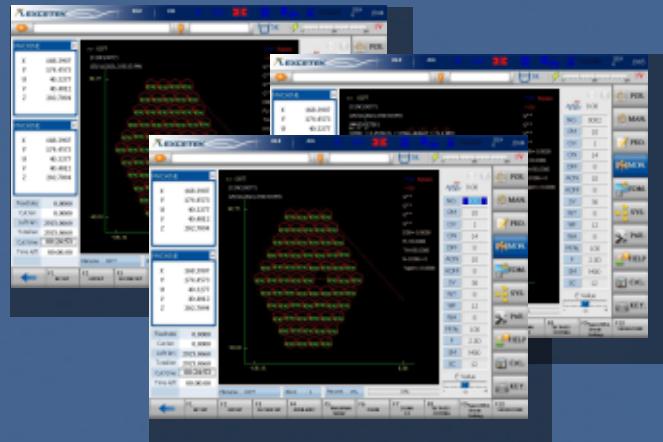
An optimal module on the electric circuit PCB, each module I/O gives an LED indication which benefits after sales, service and provides more efficient maintenance.

### Short Circuit Solution

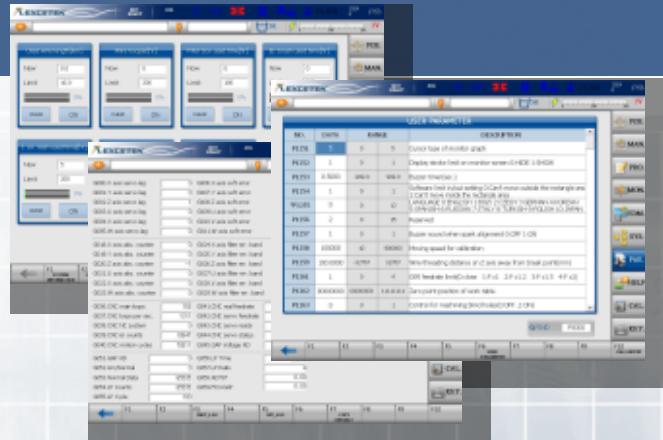
When a short circuit takes place after threading due to misalignment, A special discharge circuit will eliminate this condition and will improve machining efficiency.

# User Friendly Operations

## Watchdog Monitors During Machining

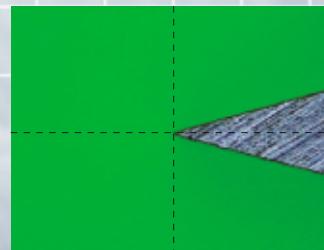


Parameters & Maintenance Information

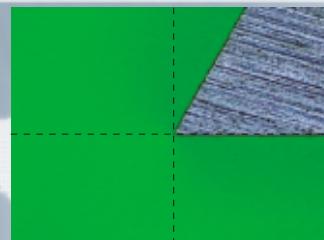


## The Corner Control

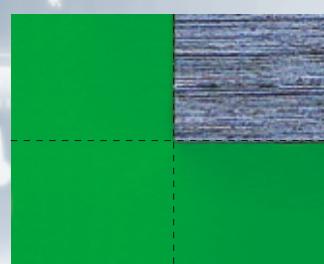
Corner control machining parameter controls the machining speed and inhibits the wire twisting phenomenon. Hence reduces cornered 'washout' and also ensures machining accuracy. Effectively improves machining quality and speed. Operator can adjust quality priority or speed priority according to wire diameter or thickness selected.



Corner angle 30° / Zoom-in x 100

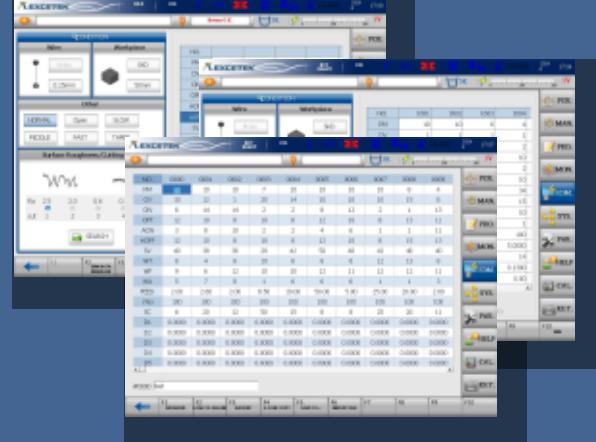


Corner angle 60° / Zoom-in x 100

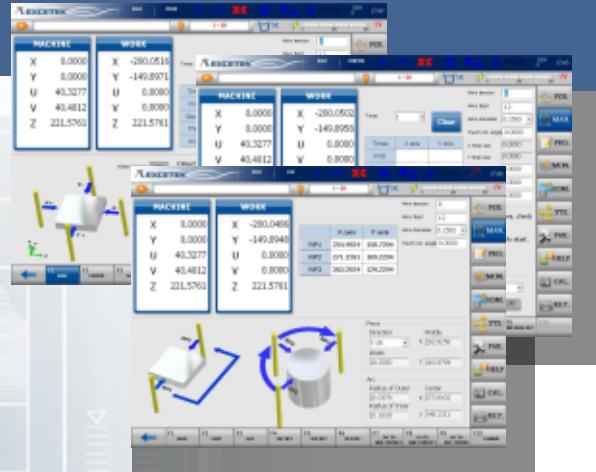


Corner angle 90° / Zoom-in x 100

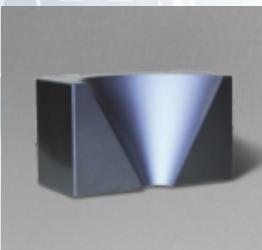
## Cutting Technology Condition



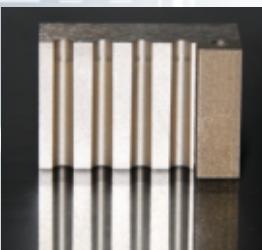
Auto Measuring Cycles



Work piece	SKD-11
Wire	0.25mm / Brass
Taper of Angle	30°
Thickness	50mm
No. of cut	1 cut 3 skim
Cutting Time	5 hour 30min



Work piece	SKD-11
Wire	0.2mm / Brass
Taper of Angle	0.5°
Thickness	30mm
No. of cut	1 cut 3 skim
Cutting Time	40min



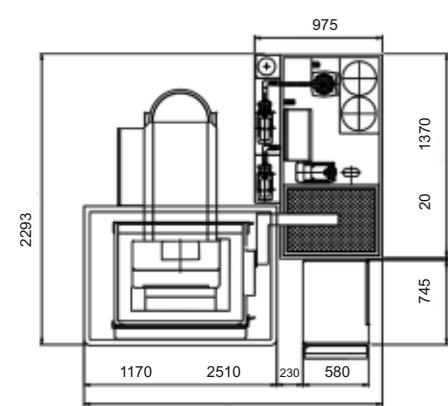
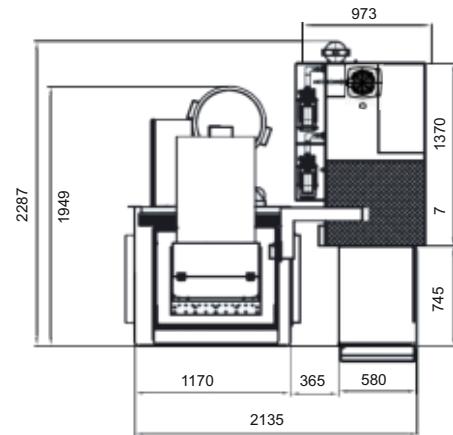
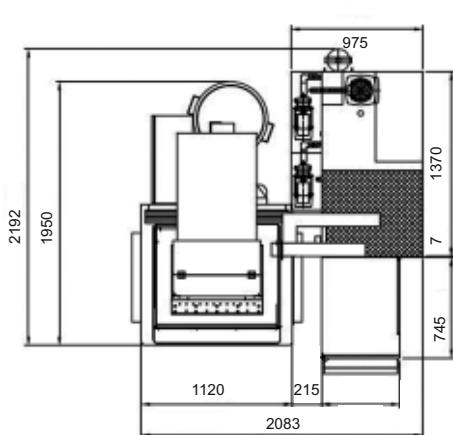
Work piece	SKD-11
Wire	0.2mm / Brass
Thickness	50mm
No. of cut	1 cut 2 skim
Cutting Time	Punch 3h 40min Die 4h 35min



# Machine Specifications

## Flushing Type CNC Wirecut EDM

Description	EX 40	EX 50	EX 60
Max. work piece dimension (mm)	W750 x D550 x H215	W750 x D550 x H215	W1000 x D700 x H305
Max. work piece weight(kg)	500	600	750
Travel of X, Y (mm)	400*300	500*300	600*400
Travel of U, V (mm)	80*80	80*80	120*120
Travel of Z (mm)	220	220	310
Wire diameter (mm)	0.15~0.3	0.15~0.3	0.15~0.3
Number of axes control (mm)	5 Axis AC Servo Motor	5 Axis AC Servo Motor	5 Axis AC Servo Motor
Max. Taper angle	22°/ 80 mm	22°/ 80 mm	± 26°/100mm
Machine Dimension(mm)	W2100 X D2300 X H2175	W2300 X D2290 X H2100	W2630 X D2565 X H2180
Machine weight (kg)(Machine+Generator+Tank)	2400 kg	2750 kg	3850 kg
Maximum cutting speed <small>Note: Test by 0.25 mm Brass wire /SKD- 11/50mm thickness.</small>	200mm <sup>2</sup> / min	200mm <sup>2</sup> / min	200mm <sup>2</sup> / min
Surface finish (1 + 2 Cuts)	0.49 µRa	0.49 µRa	0.49 µRa
Dielectric Tank Specifications			
Tank Capacity(L)	300L	300L	300L
Paper Filter( Pcs)	2 Pcs	2 Pcs	2 Pcs
Deionizer	Auto	Auto	Auto
Chiller unit	Auto	Auto	Auto



EX40

EX50

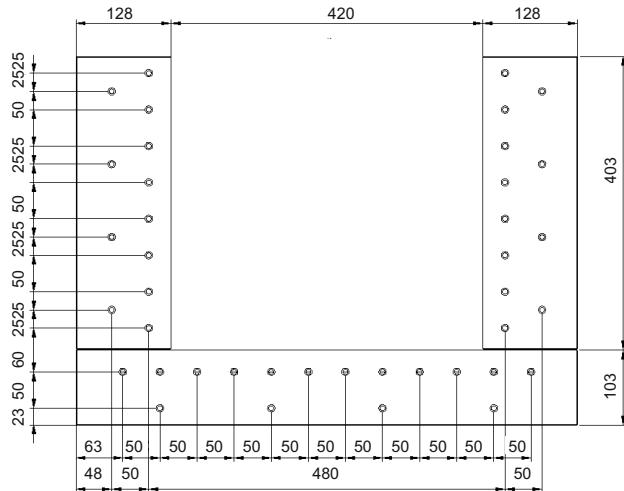
EX60

## Standard Accessories

Chiller unit  
 Ion exchange resin x 5L  
 Paper filter x 2 pcs  
 Diamond guide x 2 pcs  
 Upper and lower flushing nozzle x 4 pcs  
 Brass wire x 1 spool  
 Clamping tool 1 set  
 Multi step pump pressure control

## Options

XY axis linear scale  
 Clamping beam  
 Round job holder  
 Mineral bed filtration system

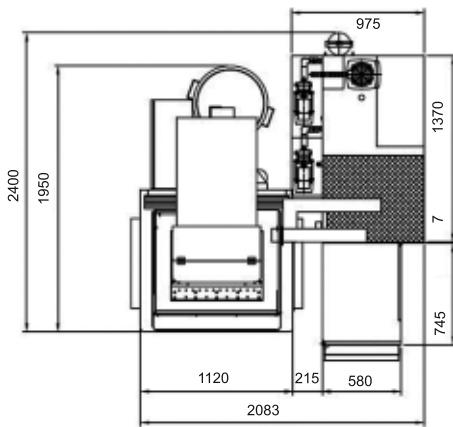


Ex40 Work Table Drawing

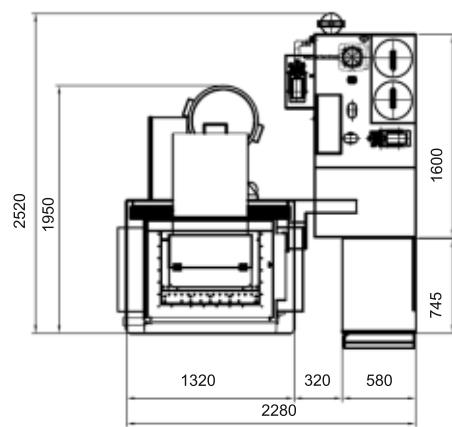
# Machine Specifications

## Submerged Type CNC Wirecut EDM

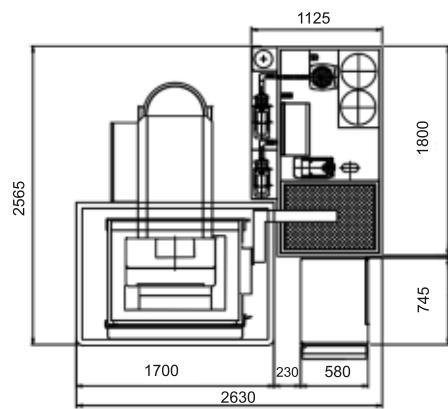
Description	EX 400	EX 500	EX 600
Max. work piece dimension (mm)	W750 x D550 x H215	W750 x D550 x H215	W1000 x D700 x H305
Max. work piece weight(kg)	500	500	750
Travel of X, Y (mm)	400*300	500*300	600*400
Travel of U, V (mm)	80*80	80*80	120*120
Travel of Z (mm)	220	220	310
Wire diameter (mm)	0.15~0.3	0.15~0.3	0.15~0.3
Number of axes control (mm)	5 Axis AC Servo Motor	5 Axis AC Servo Motor	5 Axis AC Servo Motor
Max. Taper angle	$\pm 22^\circ$ / 80 mm	$\pm 22^\circ$ / 80 mm	$\pm 26^\circ$ / 100mm
Machine Dimension(mm)	W2200 X D2400 X H2175	W2300 X D2420 X H2100	W2630 X D2565 X H2180
Machine weight (kg)(Machine+Generator+Tank)	2600 kg	2900 kg	3850 kg
Maximum cutting speed <small>Note: Test by 0.25 mm Brass wire /SKD- 11/50mm thickness.</small>	200mm <sup>2</sup> / min	200mm <sup>2</sup> / min	200mm <sup>2</sup> / min
Surface finish (1 + 2 Cuts)	0.49 $\mu$ Ra	0.49 $\mu$ Ra	0.49 $\mu$ Ra
Dielectric Tank Specifications			
Tank Capacity(L)	630L	650L	800L
Paper Filter (Pcs)	2 Pcs	2 Pcs	2 Pcs
Deionizer	Auto	Auto	Auto
Chiller unit	Auto	Auto	Auto



EX400



EX500



EX600

### Installation Condition

Select a location that satisfies the following conditions for installing the CNC Wire Cut EDM.

### Environment Condition

1. Machine must be placed in AC room, Recommended Room Temperature within  $20 \pm 1^\circ\text{C}$ .
2. Humidity: Within 30 ~ 75% RH. (With no dew condensation)
3. Floor vibration: Tolerable floor vibration level value is acceleration  $0.5\text{m/s}^2$  or less, maximum amplitude  $5 \mu\text{m}$  or less.
4. Ground connection: The CNC Wire Cut EDM must always be grounded to prevent external noise and prevent radio disturbance and earth leakage. Class C grounding (grounding resistance  $10 \Omega$  or less) as set forth in the Electric Facility Standards is recommended for the DM. (Fig. 1). Common grounding can be used if noise from other device will not enter through the common grounding; The grounding cable must be connected independently to the grounding location and use  $4\text{mm}^2$  grounding wire (Fig. 2)
5. Shield room: Install a shield room if the Wire Cut EDM affects television or other communication device in the area, observe the following points when installing the Wire Cut EDM in the shield room and grounding the Wire Cut EDM in the shield room is necessary.
6. Chiller location: Should locate in room temperature  $15 \sim 30^\circ\text{C}$ . To Evacuate the hot air ducting to be made by user in order to maintain constant room temperature during running.

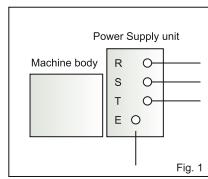


Fig. 1

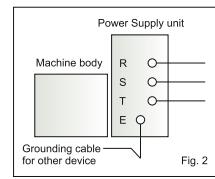


Fig. 2



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