

topedm

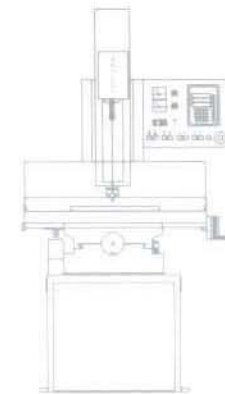
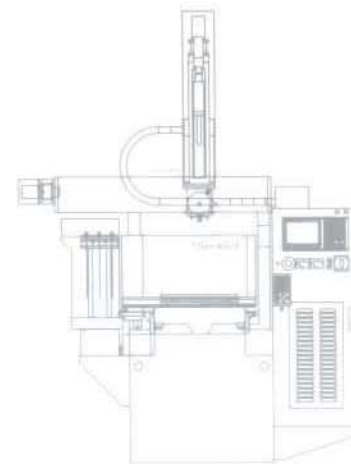
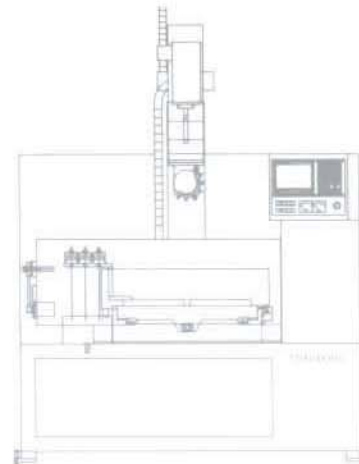
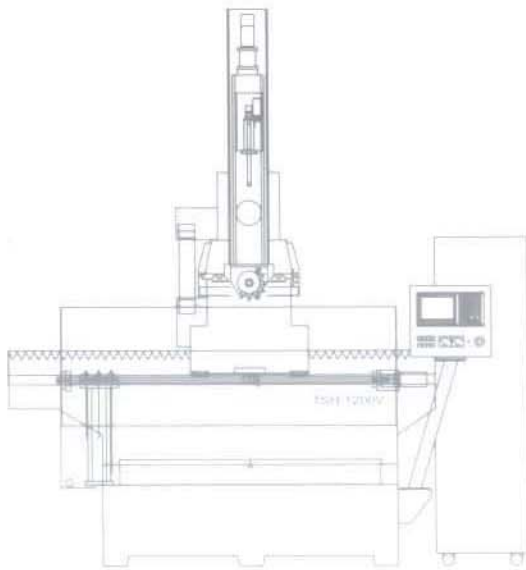
SINCE 1965

CE
TUV Rheinland
Approved

Patents



*Inventor of High Speed Drilling EDM
First Electric Discharge Machine in Taiwan
More than 40 patents in the world
2 National Invention Prizes*



NEW TECHNOLOGY TO DRILL HOLES IN PRODUCTION

Come to us for any Aerospace drill problem
 TOPEM design and build customized machine



TSH-1200V CNC

X axis travel : 1270 mm
 Y axis travel : 1020 mm
 W axis travel : 600 mm



- Drill fast – over 50 mm per minute for inconel,...
- Drill deep – over 400 mm in depth
- Enhance production efficiency and reduce cost
- Excellent finished quality – metal physical properties exceeding aerospace specifications
- Environmental friendly (uses water as dielectric)

The New TOPEM High Speed Drilling EDM :

1. High speed compare to other methodologies.
2. Large parts – drill at any angle on parts up to 1000mm in diameter.
3. Fully automatic – 8 axes CNC, automatic tool changer and guide changer.
4. High precision rotary-tilt table – A,B, and all other axes use one integrated control.

Specifications	TSH-1200V CNC
X, Y & Z Axes Travel	1270 x 1020 x 610 mm
Machine Head Travel	600 mm
Stainless Steel Vice Unit (L x W)	1560 x 1160 mm
Worktank (L x W)	2000 x 1530 mm
Max. Distance Between Guide Unit / Worktable	930 mm
Tilting Head	± 35 °
Electrode Diameter	Φ 0.15 ~ Φ 6.0mm
Automatic Electrode Changer (AEC)	42 pieces
Automatic Guide Changer (AGC)	5 guides
Dielectric System	Pressure and deionization control
Max. Machining Current	50 AMP
Max. Power Consumptin	10 KVA
Machine Dimension (L x W x H)	3105 x 3705 x 3900 mm
Machine Net Weight	7000 kgs

High Efficiency CNC Drill for Your Production

TOP in EDM DRILL



TSH-400N CNC



TSH-400T CNC



TSH-600V CNC



TSH-1000V CNC

Advanced CNC System

- +/- 0.01 mm hole size repeatability
- No burr after drilling, no tool break
- Much lower machine & tooling cost
- Easy to drill stainless steel, inconel,...
- Smart drilling cycle
- Adaptive drilling control (New)

For unmanned operation

- Optional Automatic Tube Changer
- Optional Automatic Guide Changer

For complicated parts

- Optional Rotary-tilt table (A&B axes)
- Optional tilting head axes

For large parts

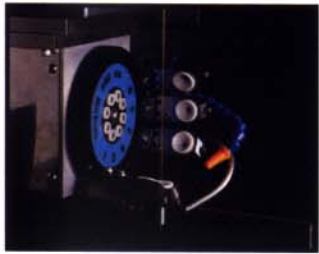
- Travel from 400, 600, 1000, 1200 mm, to customized machines

Your long term partner and solution

- TOPEDM is the technical solution, we design in house the mechanical, electronic and CNC hardware, software.

Specifications	TSH-400N CNC	TSH-400T CNC	TSH-600V CNC	TSH-1000V CNC
X, Y & Z Axes Travel	400 x 400 x 440 mm	400 x 400 x 380 mm	600 x 400 x 370 mm	1000 x 500 x 370 mm
Machine Head Travel	348 mm	300 mm	390 mm	470 mm
Stainless Steel Table (L x W)	480 x 458 mm with vice rail	480 x 458 mm with vice rail	650 x 440 mm	1090 x 615 mm
Worktank (L x W x H)	870 x 670 x 150 mm	670 x 930 x 330 mm	910 x 650 mm	1270 x 750 mm
Max. Distance Between Guide Unit / Worktable	355 mm	315 mm	520 mm	620 mm
Tilting Head	none	none	± 35 °	± 35 °
Electrode Diameter	Φ0.15 ~ Φ6.0mm	Φ0.15 ~ Φ6.0mm	Φ0.15 ~ Φ6.0mm	Φ0.15 ~ Φ6.0mm
Submersible tank	no	yes	no	no
Automatic Electrode Changer (AEC)	none	21 pieces	21 pieces	21 pieces
Automatic Guide Changer (AGC)	none	5 guides	5 guides	5 guides
Dielectric System	Pressure and deionization control	Pressure and deionization control	Pressure and deionization control	Pressure and deionization control
Max. Machining Current	50 AMP	50 AMP	50 AMP	50 AMP
Max. Power Consumptin	6 KVA	6 KVA	7.5 KVA	7.5 KVA
Machine Dimension (L x W x H)	2440 x 1900 x 2460 mm	2700 x 1900 x 2680 mm	1930 x 1660 x 2390 mm	2020 x 1710 x 2680 mm
Machine Net Weight	1900 kgs	2100 kgs	2300 Kgs	2600 Kgs

• All specifications and designs are subject to change without further notice.



Automatic Guide Changer (AGC)

Patented Automatic Guide Changer (AGC)

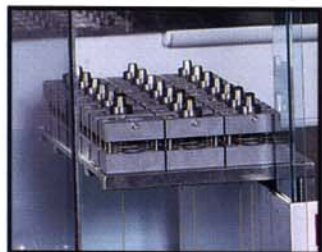
- With 5 positions for different Guide sizes to automatic complete different hole sizes without stop.
- Long term accuracy, no worn out due to guide changing
- Two seconds guide change
- Detects electrode not being threaded into the guide
- Crash-protection prevents the guide from crashing the work-piece



Tilting Head

Tilting Head

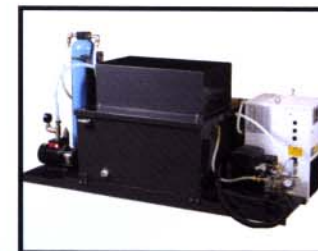
- Tilt the machine head when the workpiece is not easy to tilt by rotary table
- High precision, 0.001 degree resolution
Controlled by one program together with all other axes
- Easy programming, the tilting head axis is integrated in the drill cycle and tube/guide changing cycle.



Automatic Electrode Changer (AEC)

Patented Electrode Changer (AEC)

- Stores 21 or more electrodes
- Easy use, automatically select another electrode to finish the holes, self triggered, no additional program code needed, even in the middle of the hole
- Buffer and thread design, no leaking and long term accuracy are assured
- Simple design, easy and low cost maintenance
- Detectors check loading and unloading sequences



Dielectric System

Dielectric System

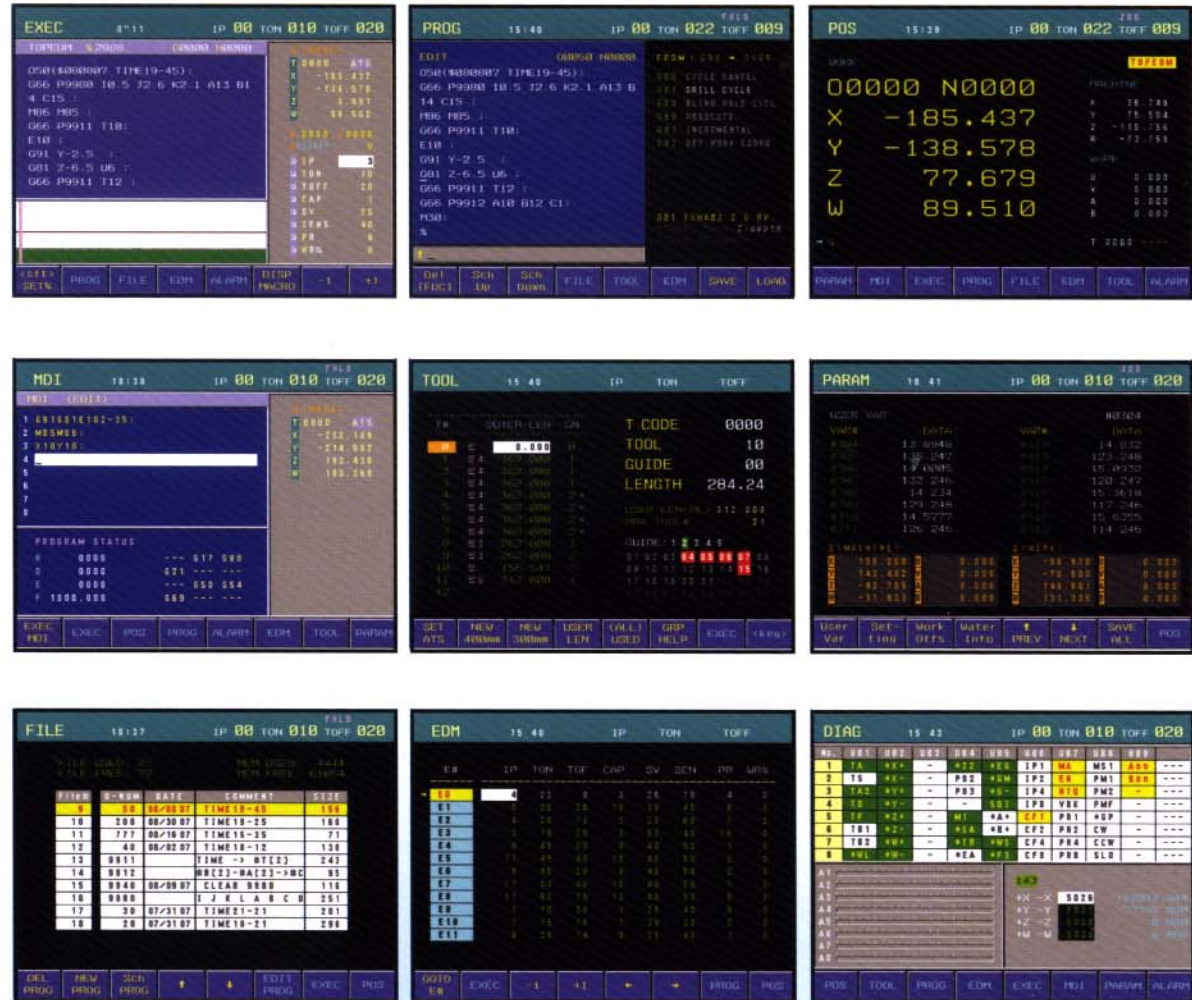
- Use water, large capacity fiber tank
- Equipped with large size filter
- With D/I (de-ionization) unit, water conductivity probe, water conductivity is controlled and monitored by CNC controller
- With high pressure sensor, water pressure is programmable in the part program
- Quick-fill pump for submersible tank
- Standard for all CNC models

CNC control model 8H is designed specifically for EDM drill and some of the features are

- 8-axes simultaneous CNC, AC servo technology for all of the X, Y, Z, W, U, V, A, B axes
- Smart tool management let you use different electrode with different diameter easily
- Macro programming capability with mathematical function & interactive code
- Complete EDM data, including pressure control
- Smart program editor with real-time GM code help
- Machining condition monitor responses fast let you virtually see the drill performance
- Diagnostic page display all I/O status, servo output and keypad code at real time

Unique adaptive servo control

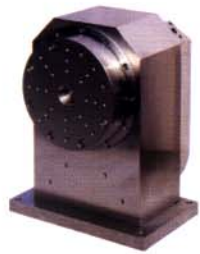
- Monitoring the machining condition to achieve fast drilling efficiency
- Changing the technology used at hole entry to minimize the burr, and to achieve fast and accurate drilling after hole break out



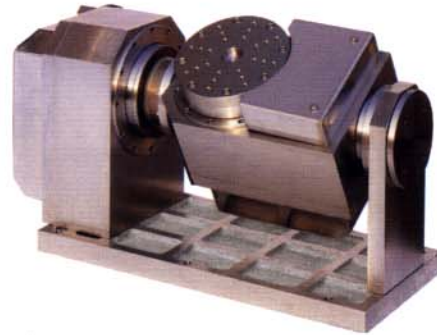
Drill Accurate Holes at Critical Angles Easily

TOPEDM

Rotary/Tilt Tables - High accuracy 360,000 divisions



NR250W-A



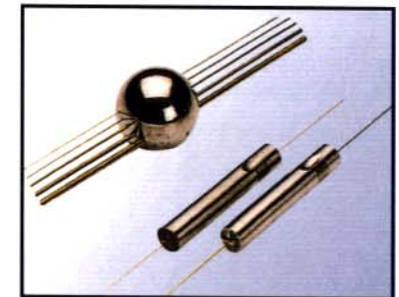
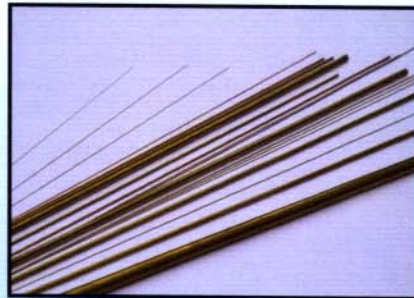
NR250W-AB

Features

- All stainless steel constructions for IP68(submersible) protection
- No backlash & extremely accurate even at heavy load
- Direct encoder feedback eliminates the error caused by loading
- Equipped with brake to hold heavy parts when power off
- Full close loop control with 0.001 degree resolution and +/- 0.001 degree accuracy
- Simultaneous movement with all other axes, and all axes can be assigned with a single block drill cycle.
- Air pressurized & monitored to assure no water can get in.
- Designed, build, integrated and controlled by the same manufacturer, TOPEDM.

Specifications	NR120W-A	NR120W-AB	NR250W-A	NR250W-AB
Axis	1 Axis (Rotary)	2 Axes (Rotary/Tilt)	1 Axis (Rotary)	2 Axes (Rotary/Tilt)
Protection	IP68 (Submersible)	IP68 (Submersible)	IP68 (Submersible)	IP68 (Submersible)
Dimension LxWxH (mm)	230 x 164 x 292 mm	482 x 293 x 232 mm	240 x 242 x 300 mm	600 x 260 x 317 mm
Table Weight	30 kg.	60 kg.	60 kg.	120 kg.
Max. Load Torque	100 Nm	100 Nm	200 Nm	200 Nm
Max. Radial Load	100 kg.	75 kg.	200 kg.	150 kg.
Indexing Resolution	0.001°	0.001°	0.001°	0.001°
Table Diameter	105 mm	105 mm	160 mm	160 mm
Table Accuracy (Flatness)	5µm	5µm	5µm	5µm
Table Brake	Yes	Yes	Yes	Yes
Motor	Brushless Servo Motor	Brushless Servo Motor	Brushless Servo Motor	Brushless Servo Motor
Driver & Control	Brushless Servo Motor	Brushless Servo Motor	Brushless Servo Motor	Brushless Servo Motor

Accessories special guides and tubes available



ZNC High Speed Drill EDM $\phi 0.15 \sim \phi 3.0\text{mm}$, Optional: $\phi 4.0 \sim \phi 6.0\text{mm}$



TSH-3AA



TSH-5AA

Specifications	TSH-3AA	TSH-5AA
X, Y & Z Axes Travel	250 x 200 x 370 mm	400 x 300 x 370 mm
Machine Head Travel	200 mm	280 mm
Stainless Steel Table (L x W)	400 x 190 mm	450 x 310 mm
Worktank (L x W x H)	560 x 390 mm	930 x 540 mm
Max. Distance Between Guide Unit / Worktable	220 mm	300 mm
Dielectric Fluid	Water	Water
Dielectric Volume	140 Liters	140 Liters
Max. Machining Current	25 AMP	25 AMP
Machine Dimension (L x W x H)	750 x 1030 x 2120 mm	1300 x 1059 x 2250 mm

FEATURES

- Equipped with 3-axes pulse scales and DRO (Digital Read Out)
- Full function DRO features homing, drill depth setting, center/edge finding, inch/mm selection and 2-coordinates.
- Wide drilling capability: $\phi 0.15 \sim \phi 3.0\text{ mm}$; optional $\phi 4.0 \sim \phi 6.0\text{mm}$.
- Compact PC board design for reducing servicing cost.
- Patented Guide for vertical adjustable to $2\mu\text{m}$.
- Z-axis Linear way and ball screw for long accuracy life.
- High performance Dielectric System is standard.
- Endurable, productive and easy operation

APPLICATIONS

1. Initial/Starting Hole of Wire EDM.
2. Hardened Metal Drilling.
3. Tungsten Carbide.
4. Oblique, Spherical and Irregular Surface of Workpiece.
5. Exhausting Holes at all Kinds of Molds or Dies.
6. All Kinds of Electrical conductive Material.



Guide Unit



Filtration System



TSH-3AA/Control Panel



TSH-5AA/Control Panel



PASSION FOR MOVING FORWARD



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