

SMALL HOLE DRILLING EDMs

ZNC Series



Machine Specifications

Model	Unit	H32Z	H43Z	H54Z	H75Z
Worktable Size	mm	400x260	600x300	800x450	1100x600
X, Y Axis Travel	mm	300x250	400x300	550x400	700x550
Max. Size of Workpiece [WxDxH]	mm	610x420x250	990x460x355	1075x540x395	1630x690x595
Max. Weight of Workpiece	kg	120	450	1000	2600
Max. Electrode Guide Movement [Z axis travel]	mm	---	200	200	300
Max. Electrode Guide Movement [W axis travel]	mm	345	345	345	345
Guide Axis Travel	mm	150	150	150	150
Diameter of Electrode	mm	ø0.1~ø3.0	ø0.1~ø3.0	ø0.1~ø3.0	ø0.1~ø3.0
Max Length of Electrode	mm	400	400	400	400
Distance from Worktable to Guide	mm	100~250	5~355	45~395	145~595
Dielectric Capacity	L	60	60	60	60
Dielectric Fluid	---	pure water	pure water	pure water	pure water
Machine Dimensions	mm	1523x1183x2158	1888x1344x2155	3661x1531x2369	3980x2007x2374
Machine weight [incl. Power Supply, Water System]	kg	830	1070	2080	2980

Filtering System

Model	Unit	H32Z	H43Z	H54Z	H75Z
Micron Rating	µm	10	10	10	10
Quantity of Filter		2	2	2	2
Machine weight[WxDxH]	mm	610x470x545	610x470x545	610x470x545	610x470x545
Net Weight	kg	17	17	17	17

Standard Power Box

Model	Unit	H32Z	H43Z	H54Z	H75Z
Max. Working Current	A	50	50	50	50
Power	KVA	4.6	4.6	4.6	4.6
Net Weight	kg	NA	NA	250	250

Power System

Unit	
Power Input	6 KVA
Wave Source	Power FET
Max. Working Current	50A
No of Current	7
Setting of wave width	T-on: 26 steps T-off: 15 steps



Small hole drilling EDMs are designed for drilling less than 6.0mm diameter holes, especially 1.0mm, or even less than 0.5mm, in hard metal. These jobs are not possible to be done by conventional drills. The maximum drilling depth of the ZNC series is 345mm.

Hardware Features

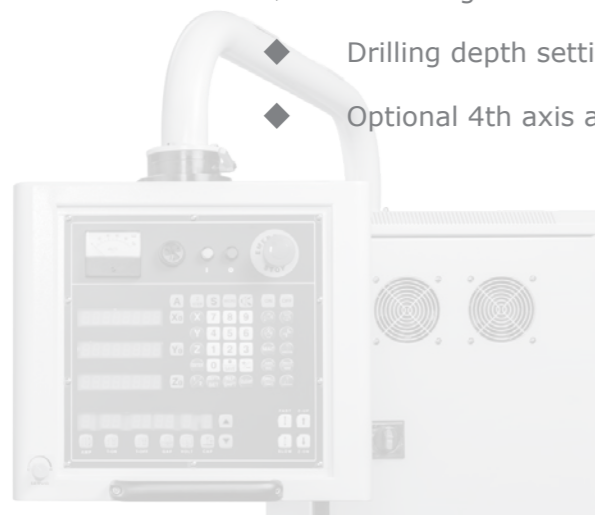
- ◆ Processing circuit is driven by high speed MOSFET with high, middle and low voltage selections, and good for small hole drilling
- ◆ Auto stop device
- ◆ Solid design on span and contacts of casting iron structure with turcite sheet to ensure high accuracy under heavy loading
- ◆ Standard auxiliary electrode brass tube clamp is good for $\Phi 1.5\text{mm}$ or less brass tube machining
- ◆ Attached stainless steel tank for easy change of dielectric fluid
- ◆ Rotary spindle will move away from the workpiece after machining
- ◆ Z axis will reset to zero when touching the workpiece
- ◆ Switching between machining depth screen and coordinates screen
- ◆ Drilling depth setting
- ◆ Optional 4th axis and single axis control system

Software Features

- ◆ Two-stage machining current circuit prevents crater holes on the workpiece
- ◆ Fast save and retrieve machining parameters
- ◆ S code is for machining aluminum and alloy steel
- ◆ Micro current machining is for $\Phi 0.12\text{mm}$ and smaller brass tubes
- ◆ Depth setting for blind holes
- ◆ Parameters can be changed during machining
- ◆ Capable of machining super hard alloy steel, irregular, spherical, and curvy shapes
- ◆ Microprocessor control
- ◆ After inputting machining current, the rest of parameters will be generated automatically
- ◆ Machining data can be saved for 10 years after unexpected power cutoff
- ◆ Dual coordinates systems
- ◆ Special aluminum and metal machining circuit
- ◆ Micro holes high power resistor circuit
- ◆ Signal for job finished

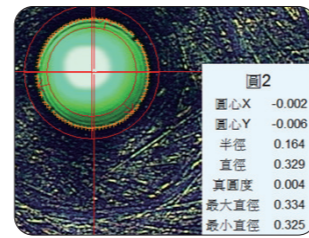
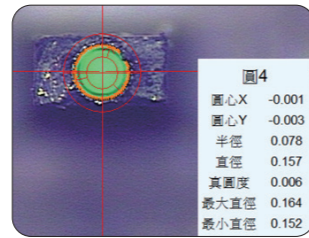
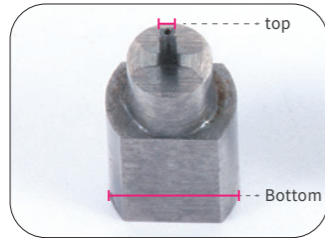
Auto Stop

When the brass tube (negative) drills through the workpiece (positive) and touches the auto stop plate, the voltage change will be a signal to cut off power in order not to drill further to the work table.

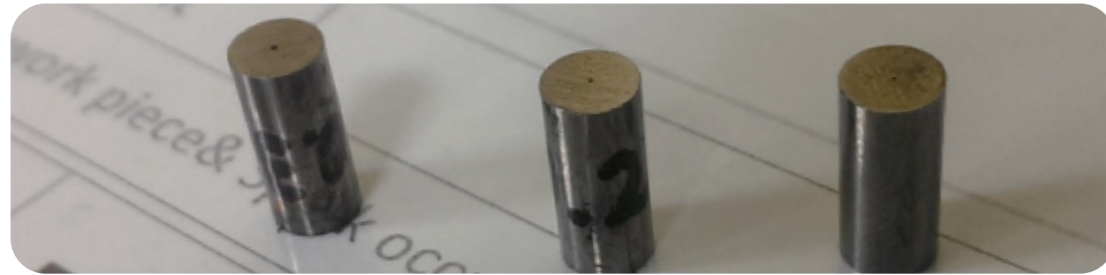


Machining Samples

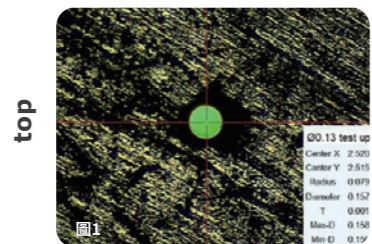
- Workpiece dimensions: 0.2mmx0.38mm (top) 2mmx3mm (bottom)
- Workpiece material: TF10 (Tungsten Steel)
- Brass tubes: $\Phi 0.12\text{mm}$ (Top) $\Phi 0.3\text{mm}$ (Bottom)



- Workpiece material: Tungsten Steel | Depth: 11mm
- Machining time: 6 min | Consumption: 1:3

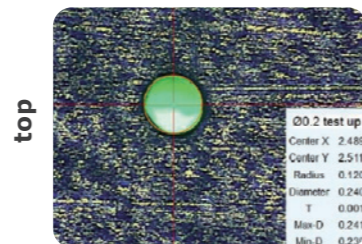


Brass tube $\Phi 0.13\text{mm}$



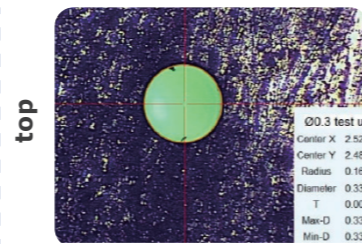
Center X	2.520
Center Y	2.515
Radius	0.079
Diameter	0.157
T	0.001
Max-D	0.158
Min-D	0.156

Brass tube $\Phi 0.2\text{mm}$

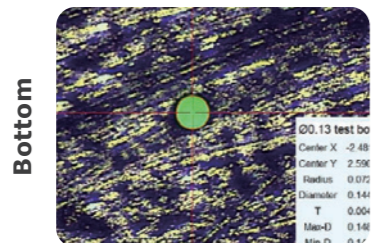


Center X	2.489
Center Y	2.511
Radius	0.120
Diameter	0.240
T	0.001
Max-D	0.241
Min-D	0.239

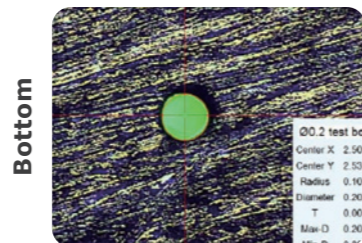
Brass tube $\Phi 0.3\text{mm}$



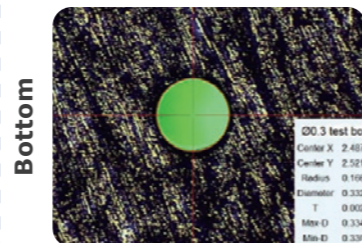
Center X	2.520
Center Y	2.488
Radius	0.167
Diameter	0.333
T	0.001
Max-D	0.334
Min-D	0.332



Center X	-2.481
Center Y	2.590
Radius	0.072
Diameter	0.144
T	0.004
Max-D	0.148
Min-D	0.141



Center X	2.509
Center Y	2.531
Radius	0.101
Diameter	0.202
T	0.001
Max-D	0.203
Min-D	0.200

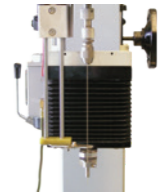


Center X	2.487
Center Y	2.521
Radius	0.166
Diameter	0.332
T	0.002
Max-D	0.334
Min-D	0.330

Descriptions of Standard/ Optional Accessories

Spindle

With servo motor and high precision chuck, this special rotary spindle ensures the stability of machining accuracy. The W axis encoder converts accurate movement of W axis. Brass tube anti-bending auxiliary guide device is for $\Phi 1.5\text{mm}$ brass tubes.



Electric Pump

Electric autonomous and stable pressure supply function. Quiet operation and easy maintenance.



Precision three-jaw chuck

Capable of clamping $\Phi 0.1\sim 3.0\text{mm}$ brass tubes.



Filter

Standard filter x 1



Japan made discrete flushing pump



Parallel spacers



Guide correction bars

$\phi 6\text{mm} \times 1$
 $\phi 3\text{mm} \times 1$



Brass tubes & guide

$\Phi 1.0\text{mm}$ brass tubes x 10
 $\Phi 1.0\text{mm}$ guide x 1

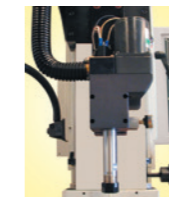


Wire cut EDM type filter



Optional ER type spindle

Used with ER16 collet and $\Phi 0.3\sim 6.35\text{mm}$ brass tubes.



Optional ER type precision chuck

Capable of clamping $\Phi 0.1\sim 3.0\text{mm}$ brass tubes.



Optional ER type precision collet set

Capable of clamping $\phi 0.3\sim 6.35\text{mm}$ brass tubes.

Standard/ Optional Accessories

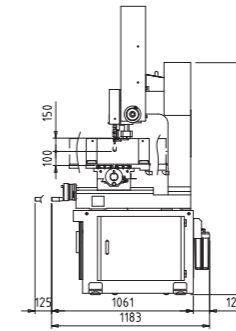
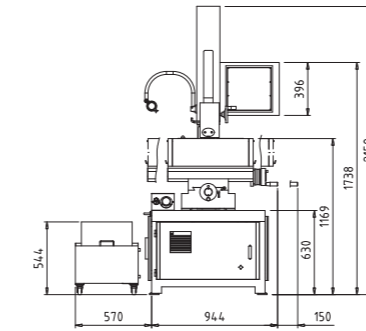
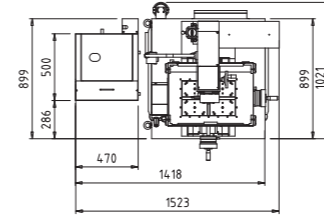
Standard ● Optional ○

Accessory	Spec	Quantity	H32Z/H43Z	H54Z/H75Z
Filter		2	●	●
Stainless Work Tank	60L+PUMP	1	●	●
Toolbox		1	●	●
5μm Linear Scale for X, Y Axes	5μm	1	●	●
Electrode Guide	∅1.0mm	1	●	●
Precision Electrode Spindle		1	●	●
Precision Electrode Chuck	∅0.1~3mm	1	●	●
Electrode Brass Tube	∅1.0mm	10	●	●
Guide correction bars	∅6mm + ∅3mm	1	●	●
Quartz Lamp		1	●	●
Parallel Spacers		1	●	●
W Axis Encoder		1	●	●
X, Y, W Axes Precision Ballscrews		1	●	●
Auto Stop Device		1	●	●
LED Work Lamp		1	○	○
ER Type Precision Collet	∅0.3~6.35mm	1	○	○
ER Type Precision Chuck	∅0.1~3mm	1	○	○
Single Axis Rotary Worktable (B Axis)		1	○	○

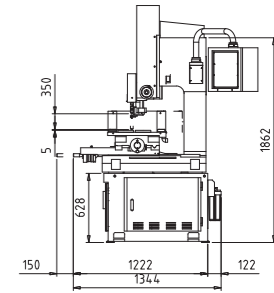
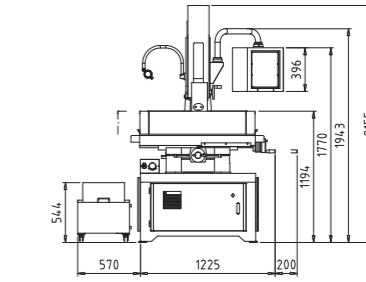
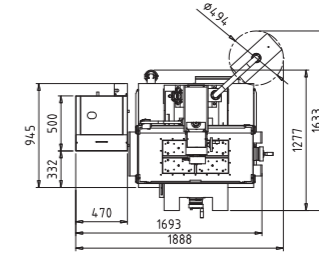
※Due to continuous improvements, the design and specifications are subject to change without prior notice

Installation Dimensions

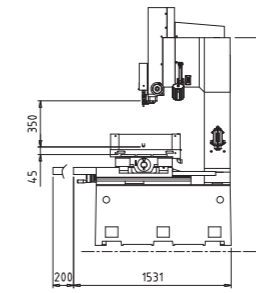
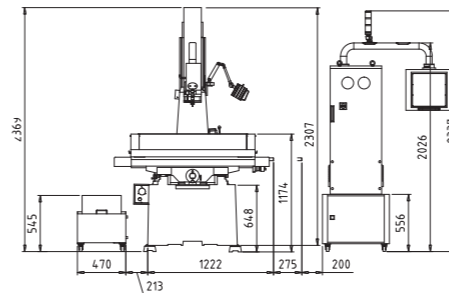
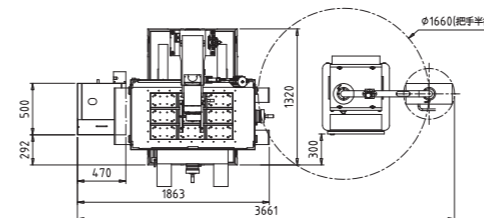
H32Z



H43Z



H54Z



H75Z

