

MICRO EDM DRILL MASTER

OSCARMAX

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SD450 CNCW



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Persist Innovation • Aspire Perfection

Persistent quality and performance · Consistent technology and worth /
/ Innovations and breakthroughs resulting from endless endeavors

Since its establishment in 1985, Oscar E.D.M. Co. Ltd. continues to launch new generations of Electric Discharge Machines based on its business philosophy - endless innovations and breakthroughs, combined with powerful R&D capabilities for meeting customer requirements. With the exclusive and self-owned brand- OSCARMAX, Oscar EDM has been marketing to more than 30 countries in the world. All staff members work together as a team, single-mindedly insisting on precision and challenging existing technologies time and again with abundant manufacturing knowhow and experiences accumulated that are highly acknowledged by the industry.

R&D is fundamental for a thriving enterprise. Oscar has long engaged in a policy of continuous R&D activities. Our EDM machines of the Moving Column Series, which is currently the leading model in Taiwan, have reached a travel of 3000mm in the X-axis, 1000mm in the Y-axis, and an unprecedented 1000mm in the Z-axis as well. It is not only providing more optimal model selections but also offering more versatile electric control systems, ranging from a traditional electrical controlling system to a more advanced CMAX template control system that is capable of all-directional 3D process applications. Combined with a fourth axis or even a fifth axis, an EDM machine can be further enhanced to deliver state-of-the-art performance. All models of the series have attained the CE certification of the SGS system. Combining internal R&D talent with top research centers

aiming for fully autonomous control of key technologies, Oscar has become the top EDM manufacturer in Taiwan by establishing an EDM product line that provides the widest range of professional machines with fully covered specifications.

Oscar fulfills perfection with a series of innovative products. The OSCARMAX brand has entered a new era of precision and excellence resulting from precision manufacturing. With high-accuracy production lines, we perform standardized production via high-efficiency processes integrated for the entire plant. From material prior preparation to the process of final product assembly, strict quality standards are specified over each and every step including warehousing, processing, assembly, and QC, with utmost attention paid to every detail of each production process. In order to secure the highest processing precision, each machine is subjected to multiple inspections and tests before its delivery, for achieving persistent reliability in long-term operations.

OSCARMAX continuously strives to promptly fulfill customer requirements. We never stop delving into brand new EDM technologies. Under leadership of the CEO and president, OSCARMAX will continuously refine themselves to reach an even better realm of EDM technologies that can assist customers in quickly entering the markets to ensure their competitiveness within

Discovering Beyond Imagination!



• Since 1985 • Made In Taiwan •



High Speed • High Efficiency

Contents • Product series

SD CNCW

SD ZNC



Tungsten carbide drilling example:
Electrode: Ø0.1mm Copper
Depth:3.3mm(HRA 90)

Measurement Results Roundness

Electrode	Actual Dia.	Electrode	Roundness
dia.0.1	0.1321	dia.0.1	0.0024
dia.0.15	0.1805	dia.0.15	0.0026
dia.0.20	0.2306	dia.0.20	0.0023

Dimension in mm Tol.±0.01mm

Deep Hole Drilling
Thickness: 200mm
Tool diameter: 1.0mm



Multi. Holes Drilling
Thickness: 10mm
Tool diameter: Ø3/0.5/1.0mm



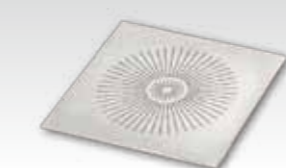
Spherical Surface Drilling (25 holes)
Diameter: 50mm
Tool diameter: 1.0/0.8/0.5/0.3mm



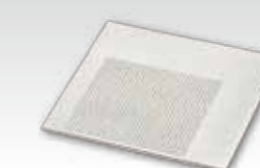
Variable Depth Control Drilling
Thickness: 25/50/75mm
(Z) 4th axis
(OPT:CNCD)



Circle Pattern Drilling (1100 holes)
Hole deepness: 5mm
Tool diameter: 1.0mm



Rectangle Pattern Drilling(1089 holes)
Hole deepness: 5mm
Tool diameter: 1.0mm



SD400
CNCW

X :400MM
Y :300MM
W:345MM
Z :350MM

- ATC & AGC included (Option)
- Stainless & Submerged Work Tank & Dielectric Tank (Option)



SD550
CNCW

X :550MM
Y :400MM
W:345MM
Z :350MM

- ATC included (Option)



SD450L
CNCW

X :450MM
Y :350MM
W:345MM
Z :350MM

- ATC included (Option)
- Stainless & Submerged Work Tank & Dielectric Tank (Option)
- X, Y, Z-axes Linear guideway (Option)



SD600
CNCW

X :600MM
Y :400MM
W:345MM
Z :400MM

SD755
CNCW

X :700MM
Y :550MM
W:345MM
Z :520MM

- ATC included (Option)



SD300
ZNC PLUS

X :300MM
Y :200MM
W:345MM
Z :250MM



SD450
ZNC PLUS

X :450MM
Y :350MM
W:345MM
Z :350MM



SD550
ZNC PLUS

X :550MM
Y :400MM
W:345MM
Z :350MM



SD400
ZNC PLUS

X :400MM
Y :300MM
W:345MM
Z :350MM



SD350
ZNC PLUS

X :350MM
Y :300MM
W:345MM
Z :350MM



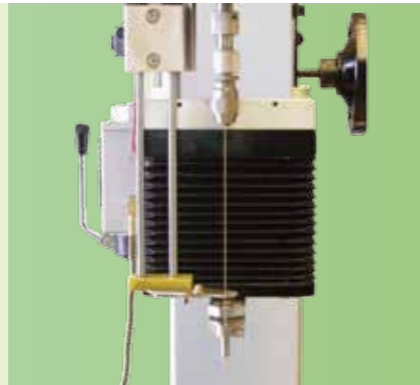
SD600
ZNC PLUS

X :600MM
Y :400MM
W:345MM
Z :400MM

● Accessories ●

SPLIDLE

- Special spindle design combined with servo motor and high precision electrode holder to ensure stable & accurate machining.
- An encoder equipped on W axis provides accurate W axis positioning. (for Electrode Tube below Ø1.5mm.)
- Electrode Anti-Bend device.



Electrical Pump

- Electrical pump can provide steady pressure automatically. Quiet during operating, and easy for maintenance.



(made in Japan)
Detached Flushing Pump



Filter



ER Precision Chuck
■ Ø0.1~Ø3.0mm



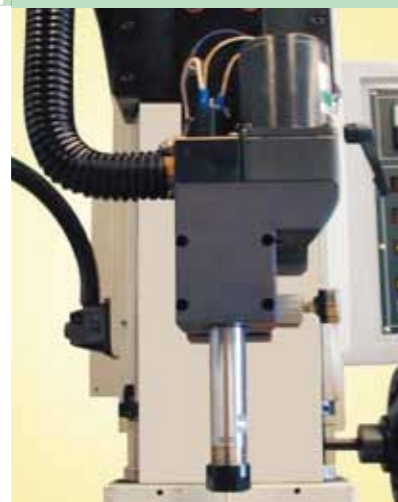
Precision Chuck
■ Ø0.1~Ø3.0mm



Pneumatic Chuck: Precision Type (Option)
■ Ø0.1~Ø3.0mm



Pneumatic Chuck: ER Type (Option)
■ Ø3.0~Ø6.35mm



ER Type Spindle (Option)
for ER16 collect Ø0.3~Ø6.35mm

Electrode & Guide

- Electrode Ø1.0mm: 1 PC & Guide Ø1.0mm: 10 PCS



▼ Automatic Tool & Guide Changer System



▼ Automatic Tool Changer System



▼ Z-axis ±45°C Rotary Device



Rotary Table

ITEM	B axis	AB axis
Axis	1 axis (Rotary axis)	2 axis (Rotary/swiveling axis)
Protection Class	IP 68	
Rotary Table	Ø 115mm	
Min. Indexing Step	0.001°	
Table Rotating Accuracy	0.005mm	
Indexing Accuracy	40-60 sec.	40-60 sec.
Precision of Encoder System	±10 sec.	
Speed Max.	10r.p.m	
Speed Reduction Ratio	144:1	144:1
Swiveling Range	B axis: 0~360°	A axis: +105°~100° B axis: 0~360°
Max. Radial Load	15 Kgs	10 Kgs
Total Weight	12 Kgs	40 Kgs



MACHINE FEATURES :

SD CNCW SERIES

- Chinese and English display. Japanese, Germany, and French languages are available with optional fonts.
- Optional metric and imperial unit of measure.
- Mechanical, working, and relative coordinates display.
- Three manual modes of continuous, step, and protection free.
- Mechanical homing and centering function.
- Auto finding edge, center of two points, center of circle, and vertex of right angle and coordinates rotation and mirroring functions.
- Genuine G/M code editing with workpiece program capacity up to 10,000 nodes.
- DXF and linear cutting machining program file conversion function.
- Dialog based program editing function.
- Square and circular array special module organization program editing function.

- Machining subroutine calling function (up to 8 layers of subroutines).
- Multiple machining condition libraries.
- Each library can hold up to 100 operator machining conditions and machining depth.
- Single and multi-hole machining. Variable thickness machining.
- Program setup (beginning and ending line number setup).
- Electrode auto detection for machining depth and return to preset height for machining surface when given depth is reached.
- Auto total machining depth compensation after electrode replacement in case the electrode is used up during single- and multi-holes positioning machining.
- Back gap and pitch error compensation function.
- Auto electrode replacement with ATC (auto electrode replacement) assembly (requires special accompanying hardware accessory).
- 6 axes linear interpolation and acceleration and deceleration motion (requires special accessory).
- Auto error diagnosis function.
- I/O points, C points, S points, A points, timer and counter status.
- 15" LCD panel with touch control.
- Programmed simulation function.
- Machining path display.
- Software & hardware limit and anti-crash protection function.

SD ZNC SERIES

- High speed MOSFET driven machining circuit for fast machining and high, medium, and low voltage options. Ideal for fine hole (with reduced copper tube wastes) and special substance machining.
- Micro-computer based control system. Intelligent deep hole machining. Simply enter desired machining current and all other machining parameters are set automatically.
- Parameter changes during machining.
- Power failure memory can last for 10 years.
- Auto rotate release of workpiece after machining is completed.
- X and Y axis optical scale with resolution up to 0.005mm and Z-axis decoder.
- Auto Z-axis reset for machining re-counting.
- W-axis starts job and count from zero automatically. Be able to set machining depth, electrode tube wear, returning distance after finishing job.
- Capable of machining super hard alloy metal in irregular, sphere, and curve shapes.
- Machining copper tube of diameter above 0.21mm with pure water for better safety while those of diameter between 0.8 and 0.2mm are machined with EDM oil for more precise hole diameter.
- Two-stage machining function, processing depth in the preceding paragraph will automatically reduce processing current crater formation on the surface of the workpiece.
- Reminder function: after the processing completed, it triggers the buzzer.
- Switchable loop while processing special aluminum iron materials.
- Switchable current processing circuit, for the use of copper tube ϕ 0.1mm or below.
- Save up to 100 sets of processing parameters.
- Automatically stop after the processing complete and touch the surface of the CIRCUIT
- Finish Stop Device. The Z axis will raise to the assigned altitude and trigger the reminder function. Enhance processing efficiency and prevent from machining to work table.(option)



MACHINE SPECIFICATION : (SD CNCW & ZNC SERIES)

ITEMS	UNIT	SD300	SD350	SD400	SD450	SD550	SD600	SD755
Work Table	mm (inch)	400×260 (15.7×10.2)	600×300 (23.6×11.8)	600×300 (23.6×11.8)	600×300 (23.6×11.8)	800×450 (31.5×17.7)	800×450 (31.5×17.7)	1100×600 (43×24)
X-axis Travel	mm (inch)	300 (11.8)	350 (13.8)	400 (15.7)	450 (17.7)	550 (21.7)	600 (23.6)	700 (29.5)
Y-axis Travel	mm (inch)	250 (9.8)	300 (11.8)	300 (11.8)	350 (13.8)	400 (15.7)	400 (15.7)	550 (21.7)
W-axis Travel(A) (Working Travel)	mm (inch)	345 (13.5)	345 (13.5)	345 (13.5)	345 (13.5)	345 (13.5)	345 (13.5)	345 (13.5)
Z-axis Extra Trave(A) (Manual Electrode Guide Travel)	mm (inch)	NA+150 (9.8)	200+150 (13.8)	200+150 (13.8)	200+150 (13.8)	200+150 (13.8)	250+150 (15.7)	300+150 (17.7)
W-axis Travel(B) (Working Travel)	mm (inch)	500 (19.7)	500 (19.7)	500 (19.7)	500 (19.7)	500 (19.7)	500 (19.7)	500 (19.7)
Z-axis Extra Travel(B) (Electrode Guide Servo Travel)	mm (inch)	350 (13.8)	350 (13.8)	350 (13.8)	350 (13.8)	350 (13.8) 500 (19.7)	350 (13.8) 500 (19.7)	350 (13.8) 500 (19.7)
Distance between Platen & Table	mm (inch)	157~7 (6.2~0.3)	370~20 (14.6~0.8)	375~25 (14.8~1)	375~25 (14.8~1)	415~65 (16.3~2.6)	465~65 (18.3~2.6)	615~95 (24.2~3.7)
Max. Workpiece Weight	Kgs	150	370	450	450	1000	1000	1500
Machine Weight (net)	Kgs	500	1000	1200	1350	1950	2100	2950
Max. Machining Current SD-CNCW	A	NA	60	120	120	120	120	120
Max. Machining Current SD-ZNC	A	50	50	50	50	50	50	50

• A: Standard Model. B: ATC/AGC/Z-axis $\pm 45^{\circ}\text{C}$ Rotary Device/ Pneumatic Chuck Device/Z-axis & W-axis lengthening Model.
 • SD300 is unavailable for CNCW series. • All specifications and designs are subject to change without notices.

Standard Accessories :

- Filter
- Stainless Water Tank [with Detached Flushing Pump (made in Japan)] (ZNC : 46L) (CNCW : 80L)
- Tool Box
- Electrode Guide ϕ 1.0mm
- Precision Electrode Holder ϕ 0.1~3.0mm
- Electrode Tube ϕ 1.0mm
- Calibrating rod ϕ 6.0mm & ϕ 3.0mm
- Halogen Work Lamp
- Leveling Pad
- X,Y-axes Linear Scale(CNC:1 μ) (ZNC:5 μ)
- Z,W-axes Encoder(for CNC)
- ZNC Series: X,Y,W-axes Ball Screw
- CNCW Series :X,Y,Z-axes Double-Nut Ball Screw
- CNCW Series :W-axis Ball Screw

Optional Accessories

- Filter
- LED Lamp
- Electrode Guide
- Electrode Tube
- ER Type Precision collet holder: ϕ 6.35mm
- ER-Precision Adapter
- Automatic Tool Changer / ATC16/32T
- Automatic Guide Changer / AGC10G
- Rotary Axis : B / AB axis(for CNC series)
- Rotary Axis: B-axis(Submerged) with Control System(for ZNC series)
- 80L Stainless Water Tank
- Stainless & Submerged Work Tank & Dielectric Tank
- W-axis optional: W-axis(500mm)+Z-axis(350mm) (for SD300/350/400/450/550/600/755)
- Z-axis optional: Z-axis(500mm)+X-axis(500mm) (for SD550/600/755)
- Finish Stop Device