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https://www.castek-edmdrill.com/

CASTEK

MD30iCNC

EDM Mill and Drill machine

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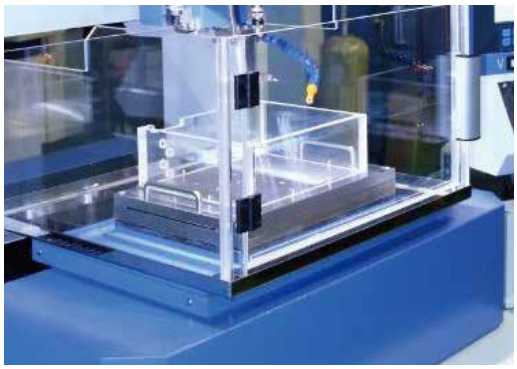
Structure

High-Rigidity Structural Model – MD30

To meet the increasingly stringent precision requirements of modern EDM micro-drilling applications, the MD30 model adopts a newly engineered high-rigidity framework. Developed through advanced computer-aided structural analysis, the MD30 achieves superior mechanical stiffness and dynamic stability. This enhanced rigidity enables ultra-precise positioning and supports minimal electrode-to-workpiece gap tolerances, ensuring optimal performance in high-accuracy EDM operations.

Spindle Coolant System

To mitigate thermal distortion and maintain dimensional stability during high-speed spindle operation, an integrated spindle coolant system is employed. This system effectively regulates spindle temperature, minimizing thermal expansion and ensuring consistent machining accuracy under prolonged duty cycles.



Granite Table

A precision-grade granite layer is integrated into the machine table to effectively suppress parasitic capacitance. The inherently stable dielectric properties of granite minimize unintended capacitive coupling between the workpiece and machine structure, thereby enhancing integrity and ensuring higher accuracy in EDM and micro-machining applications.

Specification

Machine specification

ITEM			unit
X travel	AC servo	300	mm
Y travel	AC servo	200	mm
Z travel electrode length	AC servo	350 400	mm
W travel workpiece height	AC servo	185 15-200	mm
Table size	FLAT table	350 x 225	mm
MAX workpiece size		450 x 500 x 200	mm
MAX workpiece weight		50	KGW
Machine size with panel opened		910 x 1070 x 2200 1410 x 1070 x 2200	mm
NET weight		750	KGW
XY resolution		1 μm	
Position accuracy of XY		±2 μm 2σ	
Position repeatability of XY		±5 μm 2σ	

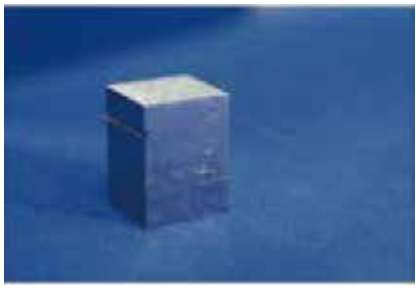
Machine Required

Electricity supply	220 VAC, single phase, with PE MAX power consumption, 2.8KW (13 AMP)
Compressed air supply	Required Pressure 5–8 kgf/cm², Flow 4 L/min (MAX)

Generator

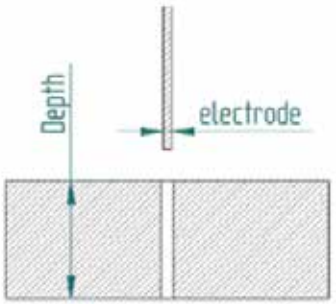
MD power

The MD30 is equipped with CASTEK' s high-precision MD Power circuitry, engineered specifically for ultra-fine EDM drilling applications. This advanced generator architecture delivers exceptional discharge stability, enabling the formation of micro-diameter holes and holes with extremely high depth-to-diameter ratios. Its optimized pulse-control technology significantly enhances machining capability, making previously unattainable micro-milling and drilling performance achievable in practical operation.

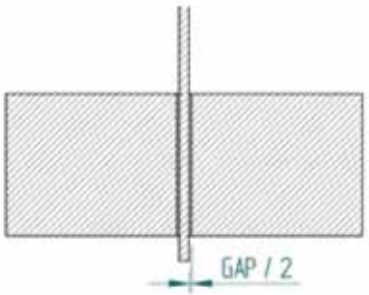
Picture	Size	depth / diameter	Gap
	electrode 0.03 Hole size 0.06 Depth 0.6	10	0.015
	electrode 0.05 Hole size 0.08 Depth 1.2	15	0.015
	electrode 0.08 Hole size 0.11 Depth 3	25	0.015
	electrode 0.1 Hole size 0.13 Depth 4	30	0.015

Machining capability

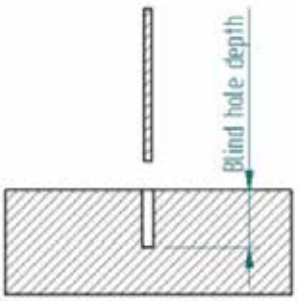
	electrode size	Repeatability	Depth/electrode Recommended
Drill	0.03	+0.02 / +0.03	< 20
	0.05-0.1	+0.03 / +0.04	< 30
	0.15-0.3	+0.03 / +0.05	< 50
	0.3-1.0	+0.05 / +0.1	< 80
Blind hole	Depth	+0 / +0.02	< 30
Orbit	Diameter	+0 / +0.01	< 20
EDM mill	Contour	+0 / +0.01	< 20



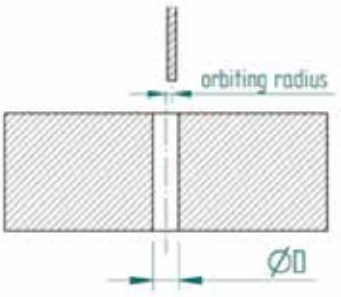
Depth / Electrode ratio



Sparking gap. hole size - electrode



Blind hole



Orbiting

Controller

Hardware

Panel - 10 inches
Keyboard
Function key
USB/LAN

Software

Auto mode	Program execute Real time EDM power setting
Handle mode	Home Position EDGE Single hole drill
Edit mode	Read / Save/ Convent / Edit Program
MDI mode	Manual data input
Parameter mode	EDM power setting table
DGNOS mode	Machine data, MLC/ PLC ladder / history
ALARM mode	Warning / Alarm
Custom mode	Customer / system setting
AUX mode	Version / Shut down

Controlled Axes

	Standard	OPTION
EDM axes	X Y Z	X Y Z C (rotary axes)
Move axes	X Y Z W	X Y Z W A C (rotary axes)

Minimum Command Unit

0.001 mm / 0.0001 inch / 0.001 degree / 0.01 sec

Program

Work coordinates, 60 sets
G/M code, upto 10000 lines
DXF / Wire-cut convert function
EDM parameter 999 sets

G codes

Position
position / no guard / ABS / inc

Coordinate
G53 machine coordinate
G54-G59, G154-G159, ..., G954-G959, 60 sets

EDGE
one-side / one-axis center / two-axis center

Machine
Drill / Bore / Blind hole / mill compensate

Others
Pause / electrode redress

Languages

English
Chinese
Deutsch
Français

Accessories

Standard

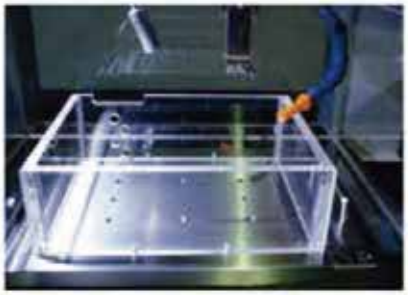
EH02 sus, Electrode holder, 0.03-1.0mm
GD02, guide 0.2mm
BR022, Brass electrode 0.2mm
Submerged tank
LED lamp
Flushing set
Auto lubricant system
WFLT50, Wire-cut level filtration system (oil)
HP, high pressure pump

OPTION

SFFC, super fine finish circuit
Filtration system,
WFLT150L oil or water,
WFLT100L oil & water
Rotary table, C axis or C and A axes
AC power stabilizer

Spare parts

Electroder holder, EH0115, EH02 sus
Guide, dia. 0.03-1.0mm, length 30mm- 100mm
Electrode, 0.03 - 1.0mm
Filters
EDM oil

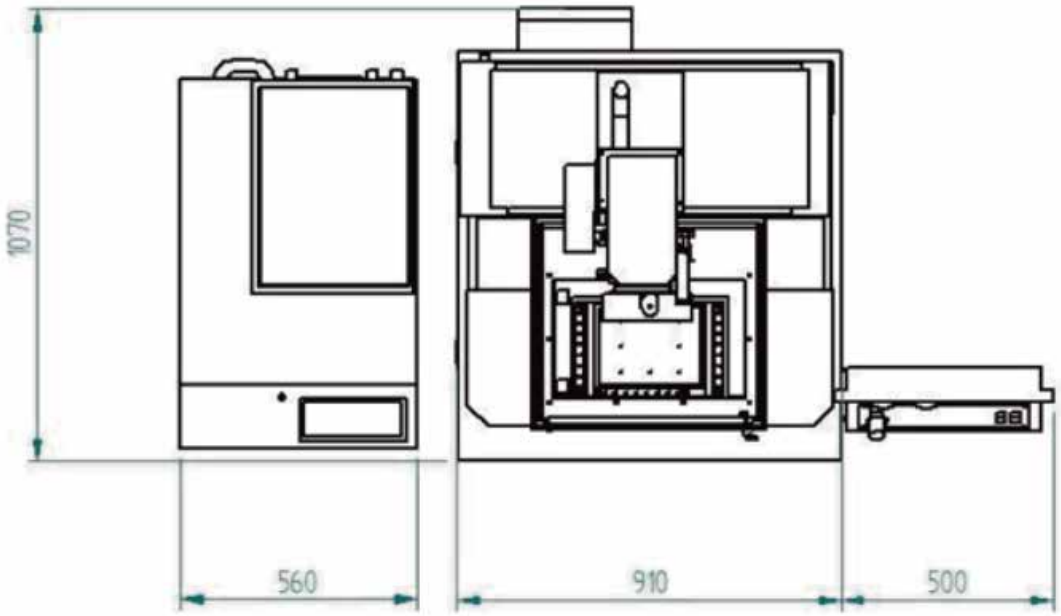


Submerged tank

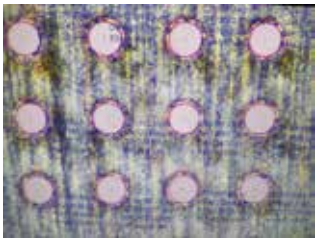
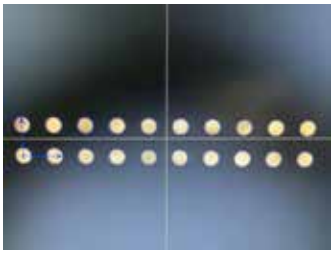
Wire-cut level filter oil / water 100L Optional

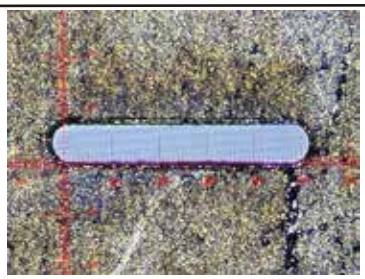
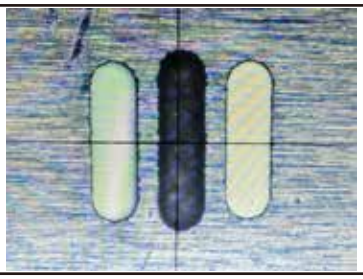
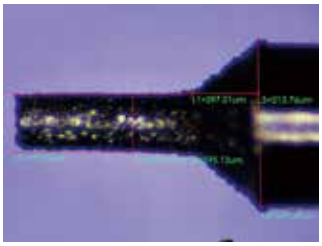
Indexer80 (two axes) Optional

Floor Required



What we can do

Picture	Description	Application
	Hole size 0.05 Depth 0.2	Drill
	Hole size 0.08 Depth 1.2	Drill
	Hole size 0.09 $^{+0.005}_{-0}$	Orbit
	Hole size 0.12 $^{+0.005}_{-0}$	Orbit
	Hole size 0.25 $^{+0.005}_{-0}$	Orbit
	Hole size 0.5 $^{+0.01}_{-0}$	Orbit 2 axes rotary table

Picture	Description	Application
	Slot 0.15x 1mm	Mill
	Slot 0.25x 0.8mm blind Slot 0.25x 0.6mm	Mill
	Oval 0.19x0.35	Mill
	0.2 cylinder and taper	Mill
	T4 torx and holder	Mill
	0.5 slot with angle	Mill 2 axes rotary table