CHMER

Non-traditional Machining Solution Provider

Automation of Die Sinker EDM

DX Series

Specifications

Machine Specifications			
Item	Unit	DX432L	DX655C
X,Y,Z Axis Travel	mm	400 x 300 x 280	600 x 500 x 500
Work Table Dimensions	mm	650 x 400	900 x 600
Oil Tank Capacity	mm	1100 x 640 x 350	1500 x 1000 x 560
Max. Workpiece Size	mm	1100 x 600 x 250	1350 x 900 x 450
X、Y、Z Driving System		X, Y, Z Axis Linear Motor	X, Y, Z Axis Ball Screw
X、Y-axis Feed Rate	mm/min	Max.6000	Max.6000
Z-axis Jump Speed	mm/min	Max.18000	Max.8000
Distance from Ram Platen to Work Table	mm	300 ~ 580	300 ~ 800
Max. Weight of Electrode	kg	30	300
Max. Weight of Workpiece	kg	500	3000
Machine Dimensions	mm	1445 x 1750 x 2400	1790 x 2400 x 2850
Machine Weight	kg	2500	3500

Specifications of Dielectric Tank			
Item	Unit	DX432	DX655
Dielectric Capacity	L	390	1300
Filter	method	Paper filter	Paper filter
Pump Power	HP	0.5 x 1 & 1 x 1	0.5x1 & 1x1
Weight	kg	80	290
Dimensions of Dielectric Tank	mm	1250 x 800 x 610	1750x800x610 +1020x550x610

Specifications of Automatic Tool Change System		
Item	Unit	60N
Max. Working Current	A	60
Max. Input Power	KVA	5
Electrode Consumption Rate	%	0.2
Best Surface Finish	μm/Ra	0.1
Off TimeDimensions	mm	705x1530x1850
Weight of Power Supply Unit	kg	180

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

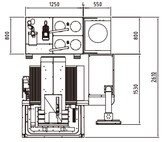
CHMER
CHING HUNG MACHINERY & ELECTRIC INDUSTRIAL CO., LTD.

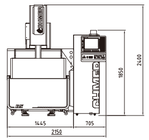
No. 3, Jingke 1st Rd, Nantun Dist., Taichung, 408, TAIWAN
TEL:+886 4 2350 9188
E-Mail：overseas@mail.chmer.com
http://www.chmer.com
Wire cut, Die Sinker, Hole Drilling, Milling, Precision Laser

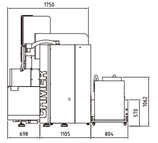
SDX000Ev02

Installation Dimensions

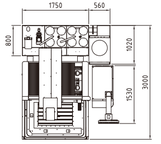
DX432L

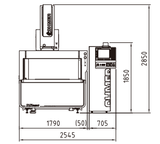


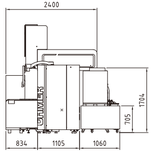




DX655C







【Medical & Biotechnological Molds】

- Workpiece Material: NAK80
- Electrode Material: Copper

【Fine Finish-Ra0.50μm】

- Electrode Size: Φ50mm
- Processing Depth: 7.5mm
- Roughing Time: 40 min
- Fine Finishing Time: 4 hr 15 min
- Surface Roughness: Ra0.5~0.6μm

【Mirror Finish】

- Electrode Size: Φ20mm
- Processing Depth: 0.3mm
- Processing Time: 3 hr 45 min
- Surface Roughness: Ra0.08~0.1μm

【Fine Finish-Ra1.20μm】

- Electrode Size: Φ50mm
- Processing Depth: 7.5mm
- Roughing Time: 15 min
- Fine Finishing Time: 2 hr 12 min
- Surface Roughness: Ra1.20~1.30μm

DX SERIES

FEATURES

01 The 3rd Generation of Electrical Discharge Circuit, EDM 3.0

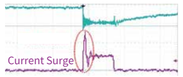
50+ ▲ ***Energy-Saving Circuit:*** Reduces input power from 5 kVA to 3.5 kVA, cutting energy use by 50%.

30+ ▲ ***DPG3 Module:*** Upgraded firmware boosts machining speed by 30%.

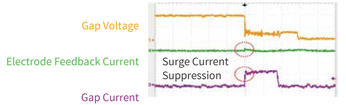
30+ ▲ ***Graphite Machining Circuit:*** Reduces carbon buildup and improves efficiency by 30%.

25+ ▲ ***Optimized Finishing Circuit:*** Enhances current efficiency, improving surface roughness by 25%.

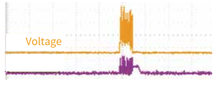
▲ ***Stable Power System:*** AVR voltage and NR current stabilization ensure machining stability.

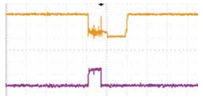


▌Problem of high frequency fine finish current – re-openings



▌Eliminating the fine finish current re-openings





1.Modular Display

2.Expert Programming

[Auto Generation]
Automatically generates processing programs with one click after setting the single-side trimming amount.
[Versatile Applications]
Built-in professional processing modes for deep grooves, mirror finishes, terminals, etc.
[Strategy Optimization]
Freely select "Low Electrode Wear" or "High Processing Speed" priority paths.
[Smart Protection]
Protects the delicate pattern at the electrode tip to avoid damage caused by high current.
[Comprehensive Output]
Synchronously generates roughing, semi-finishing, and finishing programs to streamline the workflow.

3.Remote Monitoring

After the machine status is uploaded to the central control unit, the control unit can remotely start, stop, and switch executive programs on the machine. The central control unit can also send electrode compensation data to the machine controller, realizing unmanned operation at the machine side.

02 Optimized Structural Design

To meet comprehensive machining needs, the machine features a moving column structure with a fixed worktable design to ensure high accuracy. The rigid construction, optimized and verified through 3D simulation and FEM (Finite Element Method), effectively prevents deformation and guarantees strict control over machining precision.

03 Industry 4.0

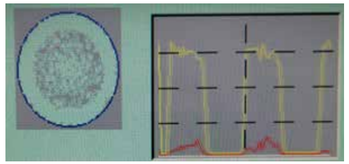
Equipped with a 3-sided automatic elevating work tank, the machine perfectly supports automated production line layouts. Integrated with CHMER's proprietary tool magazine system, it realizes 24/7 uninterrupted unmanned machining, significantly reducing the need for manual operation.

Intelligent Discharge Expert System

Equipped with simple and intuitive dialogue interface, the proprietary controller can generate a program of processing conditions by simply inputting machining options.

Selects corresponding materials of electrode and workpiece, processing modes, processing shapes, and electrode reservation

Intelligent processing route code setting (E code), instead of NC codes, i.e. G, M codes

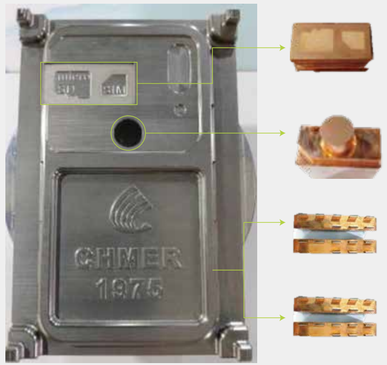


Real time recording of discharge efficiency and arcing rate

Machining Samples

【Smart Phone Middle Plate Mold】

▌Workpiece Material: NAK80 ▌Electrode Material: Copper



【Shape Machining】
▌Electrode undersize on one side: 0.05mm
▌Processing Time: 95 min ▌Surface Roughness: Ra0.45μm

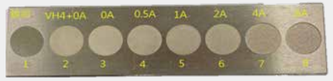
【Mirror Finish】
▌Electrode undersize on one side: 0.05mm
▌Processing Time: 75 min
▌Surface Roughness: Ra0.10μm

【Clear Corners on 3 Holes】
▌Radius Consumption: 0.03mm ▌Roughing Time: 30 min
▌Surface Roughness: Ra0.80μm ▌Fine Finishing Time: 8 min

【Clear Corners on 5 Holes】
▌Radius Consumption: 0.03mm ▌Roughing Time: 40 min
▌Surface Roughness: Ra0.80μm ▌Fine Finishing Time: 11 min

CHMER Surface Finish Table

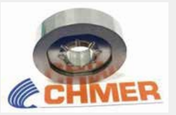
No.	Setting	Ra	Ry	Rz	VDI 3400
1	Mirror	0.09	1.1	0.7	2
2	VH4+0A	0.37	2.6	2.2	12
3	0A	0.60	4.6	3.5	15
4	0.5A	0.85	6.9	4.8	18
5	1A	1.16	7.9	5.9	21
6	2A	1.59	10.2	6.7	24
7	4A	2.74	15.7	10.7	29
8	6A	3.86	24.4	15	32



▌Workpiece Material: MAK80
▌Electrode Material: Red Copper vs. Steel
▌Area: 13 × 13 mm

“Mirror Finish 1”

▌Workpiece Material: SKH9
▌Electrode Material: Copper
▌Processing Depth: 1.275mm
▌Roughing Time: 14 min 20 sec
▌Fine Finishing Time: 2 hr 37 min
▌Surface Roughness: Ra0.14μm

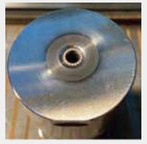


“Mirror Finish 2”

▌Workpiece Material: S50C
▌Electrode Material: Copper
▌Electrode Size: 37 x 37 mm
▌Processing Depth: 1.22mm
▌Processing Time: 3 hr 36 min
▌Fine Finishing Time: 2 hr 37 min
▌Surface Roughness: Ra0.24μm

“Tungsten Steel Mold”

▌Workpiece Material: Tungsten Steel
▌Electrode Material: Copper
▌Electrode undersize on one side: 0.05mm
▌Processing Depth: 0.7mm
▌Processing Time:
Rough Processing=12 min Fine Processing=40 min
Surface Roughness: Ra1.2μm



“Graphite Machining”

▌Workpiece Material: MAK80 ▌Machining Depth: 5 mm
▌Electrode Material: Graphite ▌Machining Time: 2 hours 50 minutes
▌Electrode Area: 50 × 50 mm ▌Electrode Wear: 15 μm
▌Applicable Industries:
- Shoe Molds
- Motorcycle Engine Heat Sinks
- Hardware Motor Heat Dissipation Covers
- Automotive Bumpers