

Sure First

Electric Discharge Machine



[Http://www.surefirst.com.tw](http://www.surefirst.com.tw)

**The only manufacturer in Taiwan
with supplying comprehensive range
of mould making machinery**



ALIC

Sure First

Since 1974



FM-70193



ED-251



ED-251

· 此機種授權辰丰機電（張家港）有限公司生產銷售。



DM-408



DM-433 / DM-543

· 此機種授權辰丰機電（張家港）有限公司生產銷售。

工件樣品 Working Examples



- 電極：石墨
Electrode: Graphite
- 工件：SKD-11
Workpiece: SKD-11



- 電極：銅
Electrode: Cu
- 工件：鋼 St (S55C)
Workpiece: St (S55C)



- 電極：銅
Electrode: Cu
- 工件：鋼 St (S55C)
Workpiece: St (S55C)

■ Other products: (detailed catalogues are available) 其他產品

放電機系列

深孔系列



Tool-type EDM device Series.



Auto Z axis NC function EDM Series



CNC EDM w/SURE FIRST controller Series



CNC EDM w/SURE FIRST controller Series



SUPER DRILL EDM Series

OPTIONAL ACCESSORIES



DM-540



DM-640

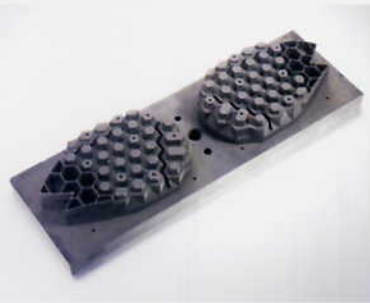


DM-860



DM-860雙頭

全系列放電機電極:適用石墨 紅/銅



石墨、電極、低消耗、高效率

國家設計獎 National Design Prize



優良產品設計獎
OUTSTANDING PRODUCT
DESIGN PRIZE

- 1983年(Year)
- 1984年(Year)
- 1985年(Year)
- 1986年(Year)

品：（歡迎索取目錄）

切割系列 ·——· CNC雕銑機系列 ·——· 石墨機系列 ·——·



WIRE CUT EDM
es



CNC ENGRAVING
MILLING MACHINE



CNC ENGRAVING
MILLING MACHINE



CNC GRAPHITE
CUTTING M/C Series



CNC ENGRAVING
MACHINE Series



CNC GRAPHITE
MACHINING

技術領先、服務第一、操作簡單、維護容易

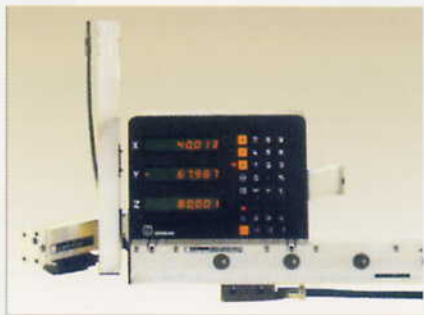
特 性

- 機械結構採用先進CAD電腦輔助設計，剛性強，無撓曲變形之虞。
- 機體採用高級強韌米漢納鑄鐵 (F30以上) 並經調質，應力消除...等處理，剛性強，穩定性佳。
- 採用瑞士進口之線性滾柱滑軌，精度高，伺服回應性極佳。
- 具有多重安全裝置。如：油溫自我檢測，光感與溫感之自動滅火系統，以確保工作之安全性。
- 所有PC板電路均以電腦CAD (PCB LAYOUT) 設計，並採用最新IC膜板，配合全新式PCB板式組合，換裝迅速，維護容易。
- 具21段脈波條件設定，可依各種不同加工情況做選擇，效率高，電極消耗小。
- 伺服控制迴路採用類比 (Analog) 電路設計，配合高性能之直流伺服馬達 (DC SERVO MOTOR) 提高伺服靈敏度，且降低加工之振動，使細加工穩定性增加。

Characteristics

- The machine structure is designed through CAD assistance. The structure is rigid, never deforming.
- The machine body is made of high strength cast iron (above FC30) after normalized. Strong structure & excellent stability.
- The quill is composed of high accurate steel alloy lead screw, Swiss made linear scale. High accuracy & excellent response of servo.
- Multiple safety device: Ex, Oil temperature detector, Auto fire extinguishing system.
- All the PCB circuits are designed through CAD (PCB LAYOUT), advanced process of PCB, module of PCB. Quick installation & easy maintenance.
- Equipped with 21 sections of on time setting, suit for different job, efficient and less wear rate.
- Servo control circuit is designed by analog, equipped with high quality DC servomotor to increase the sensibility of servo and to reduce the vibration of machining to stabilize fine finishing machining.

特別附件 Optional Accessories



西德光學尺 Heidenhain D.R.O.



超硬合金專用 C.P. BOX



超修細裝置 Super Finisher



3R系統 System 3R



搖動裝置 Orbit-Cut System



永久磁盤 Permanent Magnetic Chuck

· 高速機系列 ·

· 加工機系列 ·



NC GRAPHITE ELECTRODE MACHINING CENTER Series



QM-1065
High Speed
Machining Center



QM-1585
High Speed
Machining Center



CM-565
Production Type VMC



CM-565D/1065D
High Capacity Dual Table VMC

機械規格 MACHINE SPECIFICATION

(項目) ITEM	UNIT	ED-203	ED-205	ED-251	ED-252	DM-408
加工槽容積 Work tank volume (WxDxH)	mm (in)	630x410x250 (24 ¹³ / ₁₆ x16 ¹ / ₂ x9 ⁹ / ₁₆)	630x410x250 (24 ¹³ / ₁₆ x16 ¹ / ₂ x9 ⁹ / ₁₆)	770x510x270 (30 ⁵ / ₁₆ x20 ¹ / ₂ x10 ⁵ / ₁₆)	770x510x270 (30 ⁵ / ₁₆ x20 ¹ / ₂ x10 ⁵ / ₁₆)	1000x600x415 (39 ³ / ₁₆ x23 ³ / ₁₆ x16 ¹ / ₁₆)
最大工件物重量 Max. workpiece weight	kgs (lbs)	300 (660)	300 (660)	500 (1100)	500 (1100)	500 (1100)
工作檯面積 Work table area (LxW)	mm (in)	500x250 (19 ¹ / ₁₆ x9 ⁹ / ₁₆)	500x250 (19 ¹ / ₁₆ x9 ⁹ / ₁₆)	600x300 (23 ³ / ₁₆ x11 ¹ / ₁₆)	600x300 (23 ³ / ₁₆ x11 ¹ / ₁₆)	700x400 (27 ³ / ₁₆ x15 ¹ / ₁₆)
行程 (X, Y 軸) Travel (X, Y Axes)	mm (in)	250x150 (9 ⁹ / ₁₆ x5 ⁵ / ₁₆)	250x150 (9 ⁹ / ₁₆ x5 ⁵ / ₁₆)	300x200 (11 ¹ / ₁₆ x7 ⁷ / ₁₆)	300x200 (11 ¹ / ₁₆ x7 ⁷ / ₁₆)	400x300 (15 ¹ / ₁₆ x11 ¹ / ₁₆)
主軸行程 Quill stroke	mm (in)	150 (5 ⁵ / ₁₆)	150 (5 ⁵ / ₁₆)	150 (5 ⁵ / ₁₆)	300 (11 ¹ / ₁₆)	200 (7 ⁷ / ₁₆)
伺服馬達類型 Type of servo motor		DC SERVO MOTOR	DC SERVO MOTOR	DC SERVO MOTOR	DC SERVO MOTOR	DC SERVO MOTOR
機頭行程 Machine head stroke	mm (in)	150 (5 ⁵ / ₁₆)	150 (5 ⁵ / ₁₆)	150 (5 ⁵ / ₁₆)	200 (7 ⁷ / ₁₆)	200 (7 ⁷ / ₁₆)
最大電極荷重 Max. electrode load	kgs (lbs)	40 (88)	50 (110)	50 (110)	60 (132)	60 (132)
工作台至電極夾頭距離 Distance between working table and electrode holder plate	mm (in)	100-450 (3 ³ / ₁₆ -17 ¹ / ₁₆)	100-450 (3 ³ / ₁₆ -17 ¹ / ₁₆)	150-500 (5 ⁵ / ₁₆ -19 ¹ / ₁₆)	150-500 (5 ⁵ / ₁₆ -19 ¹ / ₁₆)	250-650 (9 ⁹ / ₁₆ -25 ¹ / ₁₆)
電極夾頭平板尺寸 Size of electrode holder plate	mm (in)	150x80 (5 ⁵ / ₁₆ x3 ³ / ₁₆)	150x80 (5 ⁵ / ₁₆ x3 ³ / ₁₆)	150x80 (5 ⁵ / ₁₆ x3 ³ / ₁₆)	150x80 (5 ⁵ / ₁₆ x3 ³ / ₁₆)	180x135 (7 ¹ / ₁₆ x5 ⁵ / ₁₆)
機械重量 Machine weight	kgs (lbs)	750 (1650)	800 (1760)	1000 (2200)	1060 (2332)	1500 (3300)
機械安裝尺寸 (含電氣箱) Machine Installation Dimensions (including generator)(WxDxH)	mm (in)	1380x1300x2200 (54 ³ / ₁₆ x51 ¹ / ₁₆ x86 ⁵ / ₁₆)	1460x900x2200 (57 ¹ / ₁₆ x35 ⁵ / ₁₆ x86 ⁵ / ₁₆)	1500x1250x2350 (59x49 ³ / ₁₆ x92 ¹ / ₂)	1600x1000x2000 (63x39 ³ / ₁₆ x78 ³ / ₁₆)	1520x1470x2060 (59 ⁷ / ₁₆ x57 ⁷ / ₁₆ x81 ¹ / ₁₆)
最大工件物體積 Max. workpiece dimensions (WxDxH)	mm (in)	500x250x220 (19 ¹ / ₁₆ x9 ⁹ / ₁₆ x8 ¹ / ₁₆)	500x250x220 (19 ¹ / ₁₆ x9 ⁹ / ₁₆ x8 ¹ / ₁₆)	600x300x240 (23 ³ / ₁₆ x11 ¹ / ₁₆ x9 ⁹ / ₁₆)	600x300x240 (23 ³ / ₁₆ x11 ¹ / ₁₆ x9 ⁹ / ₁₆)	700x400x350 (27 ³ / ₁₆ x15 ¹ / ₁₆ x13 ¹ / ₁₆)

精密度和電源供應 ACCURACY AND POWER SUPPLIES

最大加工速度 +Cu: St Max. working speed +Cu: St	g/min	1.34	1.34	2.01	2.01	3.06
最大加工速度 +Gr: St Max. working speed +Gr: St	g/min	1.79	1.79	2.69	2.69	3.52
最好的表面粗糙度 Best surface roughness	μm	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14
最小電極磨耗率 Min. electrode wear rate	% less	0.2	0.2	0.2	0.2	0.2
最大電流 Max. process current	A	20 (30, 50)	20 (30, 50)	30 (50, 75)	30 (50, 70)	50 (30, 75)
最大電源消耗 Max. power consumption	KVA	3 (4, 6)	3 (4, 6)	3 (4, 6)	4 (6, 9)	6 (4, 9)
電氣箱尺寸 Power supply dimensions	mm(in)	540x470x1220 (21 ¹ / ₄ x18 ¹ / ₂ x48)	540x470x1220 (21 ¹ / ₄ x18 ¹ / ₂ x48)	540x470x1220 (21 ¹ / ₄ x18 ¹ / ₂ x48)	540x470x1220 (21 ¹ / ₄ x18 ¹ / ₂ x48)	600x480x1220 (23 ³ / ₁₆ x18 ¹ / ₂ x48)

加工油油箱 DIELECTRIC FLUID TANK

油箱尺寸 Tank dimensions	mm(in)	950x985x580 (37 ¹ / ₄ x38 ³ / ₄ x22 ¹ / ₁₆)	1280x670x600 (50 ³ / ₈ x26 ³ / ₈ x23 ³ / ₁₆)	1045x950x525 (41 ¹ / ₁₆ x37 ¹ / ₄ x20 ¹ / ₁₆)	1400x700x500 (55 ¹ / ₁₆ x27 ³ / ₁₆ x19 ¹ / ₁₆)	1470x1150x490 (57 ⁷ / ₁₆ x45 ¹ / ₄ x19 ¹ / ₁₆)
幫浦流量 Pump flow	ℓ/min	80	80	80	80	80
幫浦馬達 Pump motor	kw	0.375	0.375	0.375	0.375	0.375
油箱重量 Tank weight	kgs(lbs)	-	-	-	-	-
加工液容量 Volume of dielectric fluid	ℓ(gal)	440 (116)	300 (79)	450 (119)	330 (87)	600 (159)

機械規格 MACHINE SPECIFICATION

(項目) ITEM	UNIT	DM-433	DM-540	DM-640	DM-860
加工槽容積 Work tank volume (WxDxH)	mm (in)	1000x600x415 (39 ³ / ₁₆ x23 ³ / ₁₆ x16 ¹ / ₁₆)	1300x750x520 (51 ¹ / ₁₆ x29 ¹ / ₂ x20 ¹ / ₂)	1300x750x520 (51 ¹ / ₁₆ x29 ¹ / ₂ x20 ¹ / ₂)	2000x1000x600 (78 ⁷ / ₁₆ x39 ³ / ₁₆ x23 ³ / ₁₆)
最大工件物重量 Max. workpiece weight	kgs (lbs)	500 (1100)	1800 (3960)	2200 (4850)	4500 (9900)
工作檯面積 Work table area (LxW)	mm (in)	700x400 (27 ³ / ₁₆ x15 ¹ / ₄)	850x450 (33 ¹ / ₁₆ x17 ¹ / ₁₆)	850x450 (33 ¹ / ₁₆ x17 ¹ / ₁₆)	1200x750 (47 ¹ / ₁₆ x29 ¹ / ₂)
行程 (X, Y 軸) Travel (X, Y Axes)	mm (in)	400x300 (15 ¹ / ₁₆ x11 ¹ / ₁₆)	500x400 (19 ¹ / ₁₆ x15 ¹ / ₁₆)	600x400 (23 ³ / ₁₆ x15 ¹ / ₁₆)	800x600 (31 ¹ / ₁₆ x23 ³ / ₁₆)
主軸行程 Quill stroke	mm (in)	300 (11 ¹ / ₁₆)	200 (7 ⁷ / ₁₆)	300 (11 ¹ / ₁₆)	250 (9 ⁹ / ₁₆)
伺服馬達類型 Type of servo motor		DC SERVO MOTOR	DC SERVO MOTOR	DC SERVO MOTOR	DC SERVO MOTOR
機頭行程 Machine head stroke	mm (in)	-	200 (7 ⁷ / ₁₆)	-	200 (7 ⁷ / ₁₆)
最大電極荷重 Max. electrode load	kgs (lbs)	60 (132)	125 (275)	85 (187)	85 (187)
工作檯至電極夾頭距離 Distance between working table and electrode holder plate	mm (in)	250-550 (9 ⁹ / ₁₆ x21 ¹ / ₁₆)	245-645 (9 ⁹ / ₁₆ -25 ¹ / ₁₆)	420-720 (16 ¹ / ₂ -28 ³ / ₁₆)	450-900 (17 ¹ / ₁₆ -35 ¹ / ₁₆)
電極夾頭平板尺寸 Size of electrode holder plate	mm (in)	180x135 (7 ¹ / ₁₆ x5 ⁵ / ₁₆)	230x125 (9x4 ¹ / ₁₆)	230x125 (9 ¹ / ₁₆ x4 ¹ / ₁₆)	230x125 (9x4 ¹ / ₁₆)
機械重量 Machine weight	kgs (lbs)	1800 (3960)	2500 (5500)	4000 (8800)	4800 (10500)
機械安裝尺寸 (含電氣箱) Machine Installation Dimensions (including generator)(WxDxH)	mm (in)	1400x1500x2300 (55 ¹ / ₁₆ x59x90 ¹ / ₂)	1700x1850x2750 (66 ¹ / ₁₆ x72 ³ / ₁₆ x108 ¹ / ₄)	3500x2040x2480 (137 ³ / ₁₆ x80 ³ / ₁₆ x97 ³ / ₁₆)	3920x3250x2730 (154 ¹ / ₁₆ x128x107 ¹ / ₁₆)
最大工件物體積 Max. workpiece dimensions (WxDxH)	mm (in)	700x400x350 (27 ³ / ₁₆ x15 ¹ / ₁₆ x13 ¹ / ₁₆)	850x450x470 (33 ¹ / ₁₆ x17 ¹ / ₁₆ x18 ¹ / ₁₆)	850x450x520 (33 ¹ / ₁₆ x17 ¹ / ₁₆ x20 ¹ / ₁₆)	1200x750x520 (47 ¹ / ₁₆ x29 ¹ / ₂ x20 ¹ / ₁₆)

精密度和電源供應 ACCURACY AND POWER SUPPLIES

最大加工速度 +Cu: St Max. working speed +Cu: St	g/min	3.06	3.06	3.06	3.06
最大加工速度 +Gr: St Max. working speed +Gr: St	g/min	3.52	3.52	3.52	3.52
最好的表面粗糙度 Best surface roughness	μm	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14	RA0.3-0.5 RMS14-21 *RA0.2-0.3 RMS8-14
最小電極磨耗率 Min. electrode wear rate	% less	0.2	0.2	0.2	0.2
最大電流 Max. process current	A	50 (30, 75)	50 (30, 75)	50 (75, 100)	50 (75, 100)
最大電源消耗 Max. power consumption	KVA	6 (4, 9)	6 (4, 9)	6 (9, 12)	6 (9, 12)
電氣箱尺寸 Power supply dimensions	mm(in)	600x480x1220 (23 ³ / ₁₆ x18 ¹ / ₂ x48)	600x595x1680 (23 ³ / ₁₆ x23 ³ / ₁₆ x66 ⁵ / ₁₆)	660x920x180 (26x36 ¹ / ₄ x70 ¹ / ₁₆)	600x595x1680 (23 ³ / ₁₆ x23 ³ / ₁₆ x66 ⁵ / ₁₆)

加工油油箱 DIELECTRIC FLUID TANK

油箱尺寸 Tank dimensions	mm(in)	1230x800x450 (48 ¹ / ₁₆ x31 ¹ / ₂ x17 ¹ / ₁₆)	1000x1950x580 (39 ³ / ₁₆ x76 ³ / ₄ x22 ¹ / ₁₆)	1100x1950x600 (43 ¹ / ₁₆ x76 ³ / ₄ x23 ³ / ₁₆)	R:1950x605x600 (76 ³ / ₁₆ x23 ³ / ₁₆ x23 ³ / ₁₆) L:1950x1000x600 (76 ³ / ₁₆ x39 ³ / ₁₆ x23 ³ / ₁₆)
幫浦流量 Pump flow	ℓ/min	100	Large: 110 Small: 80	Large: 110 Small: 80	Large: 110 Small: 80
幫浦馬達 Pump motor	kw	0.375	Large: 0.75 Small: 0.375	Large: 0.75 Small: 0.375	Large: 0.75 Small: 0.375
油箱重量 Tank weight	kgs(lbs)	250(550)	300(660)	300 (600)	450(990)
加工液容量 Volume of dielectric fluid	ℓ(gal)	500(132)	900 (238)	900 (238)	1700 (430)