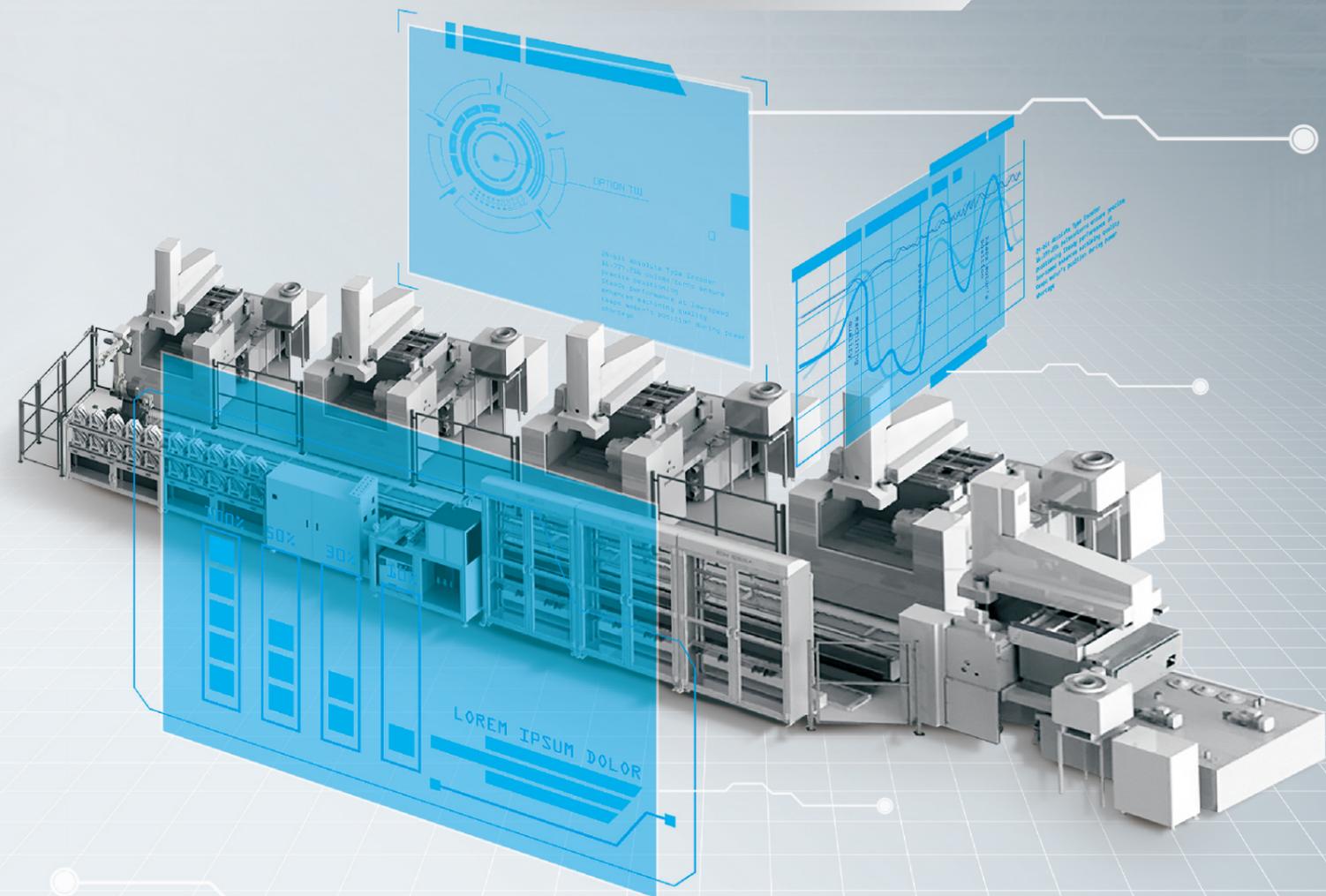


EX

Electrical Discharge Machine



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Persistent Quality and Performance
 Consistent Technology and Worth
 Service and Enthusiasm Oriented
 Keep Innovations and Breakthroughs



COUNTRY				
1 Canada	9 Norway	17 Lebanon	25 India	33 Philippines
2 U.S.A.	10 Germany	18 Algeria	26 Sri Lanka	34 Malaysia
3 Mexico	11 Poland	19 Tunisia	27 Korea	35 Indonesia
4 Colombia	12 Czech Republic	20 Egypt	28 China	36 Singapore
5 Peru	13 Slovenia	21 South Africa	29 Thailand	37 New Zealand
6 Brazil	14 Italy	22 Saudi Arabia	30 Vietnam	38 Australia
7 Argentina	15 Ukraine	23 Romania	31 Japan	
8 UK	16 Turkey	24 Russia	32 Taiwan	

Profile

Excellent quality products with reasonable prices has been increasingly welcomed by worldwide buyer, OscarMax EDMs have been sold to over 40 countries in the world. With an aim to present excellence, we OscarMax has constantly conduct problem analysis in detail, conclusion and arrangement and execution adjustment.

Extreme Efficiency Outstanding Quality

Persistent Quality and Performance
 Consistent Technology and Worth
 Service and Enthusiasm Oriented
 Innovations and Breakthroughs Resulting from Endless Endeavors

EX series Electrical Discharge Machine Launched:

Under the era of post-pandemic, the requirements of the molding market have been changed rapidly. OSCARMAX has been observing and evaluating customer's requirements, where orders of precise, highly advanced and customized machines in low volumes are needed. Hence, to develop the electrical discharge machines which can be versatile to meet all market demands. With experienced R&D department and manufacturing experience over 40 years, OSCARMAX hereby present the EX series Electrical Discharge Machine with self-designed user interface running on Windows platform.

Zero-Training Concept

During our R&D process, we believe that "less is more", how we manage to use the fewest resources to create a maximum value. OSCARMAX aimed to promote a ZERO-training concept. Once the machine has been installed, it can be used directly with minimal time spent by training, even with no previous experience with EDM machining. By the rich experiences from previous machines, designing the user interface running on Windows platform for user-friendly and intuitive operation. Focused on quicker learning, to maximize the productivity. Therefore, engineers can focus more on products design and other production lines.

Quick Integration

Integration of EtherCAT communication between all machine electronics allows to share the information, accelerate the integration process, display the utilization rate, alarm warnings etc. EX series was designed with parametric AI system, which by receiving feedbacks from actual sparking conditions, online diagnosis, characteristics analyzing and quality monitoring collects the data to optimize the efficiency of machine.

Automatic Production Line

With ethernet connectivity and remote control, Electrical Discharge Machines can be easily integrated with existing automatic manufacturing production line. Once the EX series is integrated in automatic production line, the processing system is able to analyze inputs and outputs through the application programming interface (API) and turn into one working unit. By application programming interface (API), operator therefore is capable to make integration modularly and systematically.

Build the Smart Industry

With the concept of Zero-training, latest advanced technical solutions and professional service, OSCARMAX has expanded its market from automotive to aerospace industry. With the requirements of low volume, wide variety market, OSCARMAX continues to enhance the technology of EDM, as well as the integration of automation. By choosing EX series EDM, OSCARMAX expect to continue offer support for customers into building a better industrial market. We are now in the fourth industrial revolution, also referred to as Industry 4.0. Characterized by increasing automation and the employment of smart machines and smart factories. Let's build the smart industry world together!





T-ON AND T-OFF With Perfect Combination.

We are dedicated to develop the best EDM with Perfect Combination T-ON and T-OFF Just like how we should balance between work and life.

EX System Features

● **APC adaptable parameters control**
Check Page 9 to find out more!



● **ATC (option)**



● **UV Fire Detection System**
UV fire sensor, automatic fire extinguisher, oil level float switches.



● **DELTA AC**
Delta A3 drive inside.



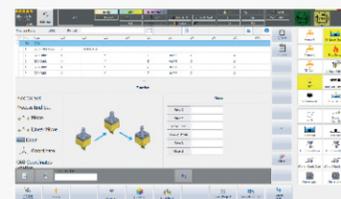
● **Automatic door**
Programmable oil level. Available for S500-S1060
Compatible with robot automation connection to load/unload workpiece.

● **Movable Controller with ECO stand-by mode for power saving.**

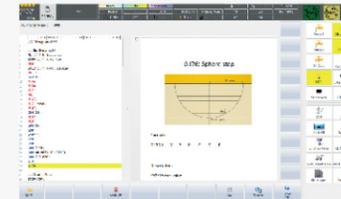
Ease of operation, touch screen on remote control box



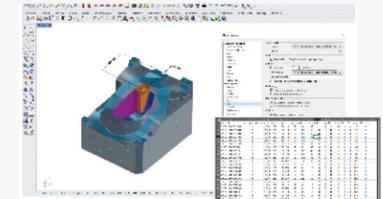
Application Features



- Conversational user interface – quick and easy program edit with pictures and description.
- Easy G-code insert for more complex programs.



- Built-in search function – GM code generated by simply enter command.



- Able to process CAM software output through API, to generate a program that including parameters, positioning, mold edging etc. Hence, it saves time and eliminate human error. [post processor is not included]



- FUZZY mode allows to simply choose materials and suggest the suitable program.
- Operators are allowed to edit the FUZZY parameters to optimize.



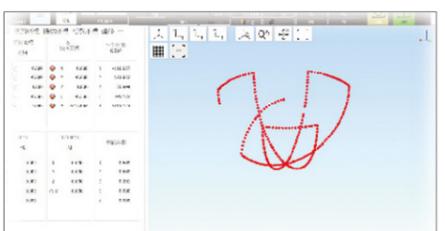
- Ergonomic remote controller with touch screen for easy operation and access inside the machine work space.



- Remote access allows OSCARMAX technicians assist with training, troubleshooting and problem diagnosis.

System Feature

- Windows 10 Operating system with industrial CPU i3(or above)64-bit.
- 21.5" multi-touch screen with movable controller.
- Equipped with digital voltmeter, current meter etc., to monitor the machine status easily.
- Up to 6 axes control – XYZCUV – equipped by rotary table to satisfy complex job.
- Color touch-screen on remote controller, unique design improves user convenience.
- ECO stand-by mode: Equipped by a motion sensor for power saving.
- UV fire sensor.
- Auto Door [Suitable for EX500-EX1060].
- Able to process CAM software output through API.
- Allow online training, problems diagnosis and system update remotely.

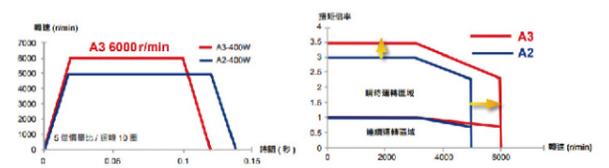


EtherCAT Feature

- EtherCAT, AC servo system and I/O control platform equipped.
- Delta ASDA-A3 Servo Drive: Higher responsiveness and shorter settling time.
- EtherCAT I/O card with great stability and easy for integration with other applications.
- Multi-touch screen with keyboard, easy for operation.

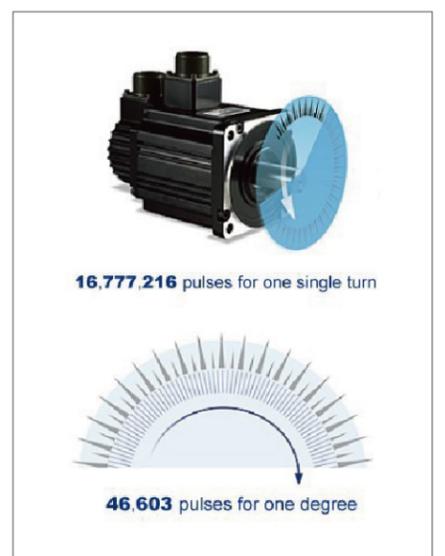
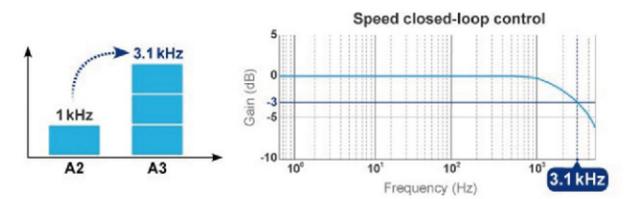


- **High speed motor with 6000 r/min and 350% peak torque**
- Increase 1000 r/min compared to A2.
- Stable current output to achieve better accuracy and roughness.



3.1 kHz Bandwidth

- Prompt respond between driver and servo motor to achieve precise positioning.
- Higher responsiveness and shorter settling time increase productivity.

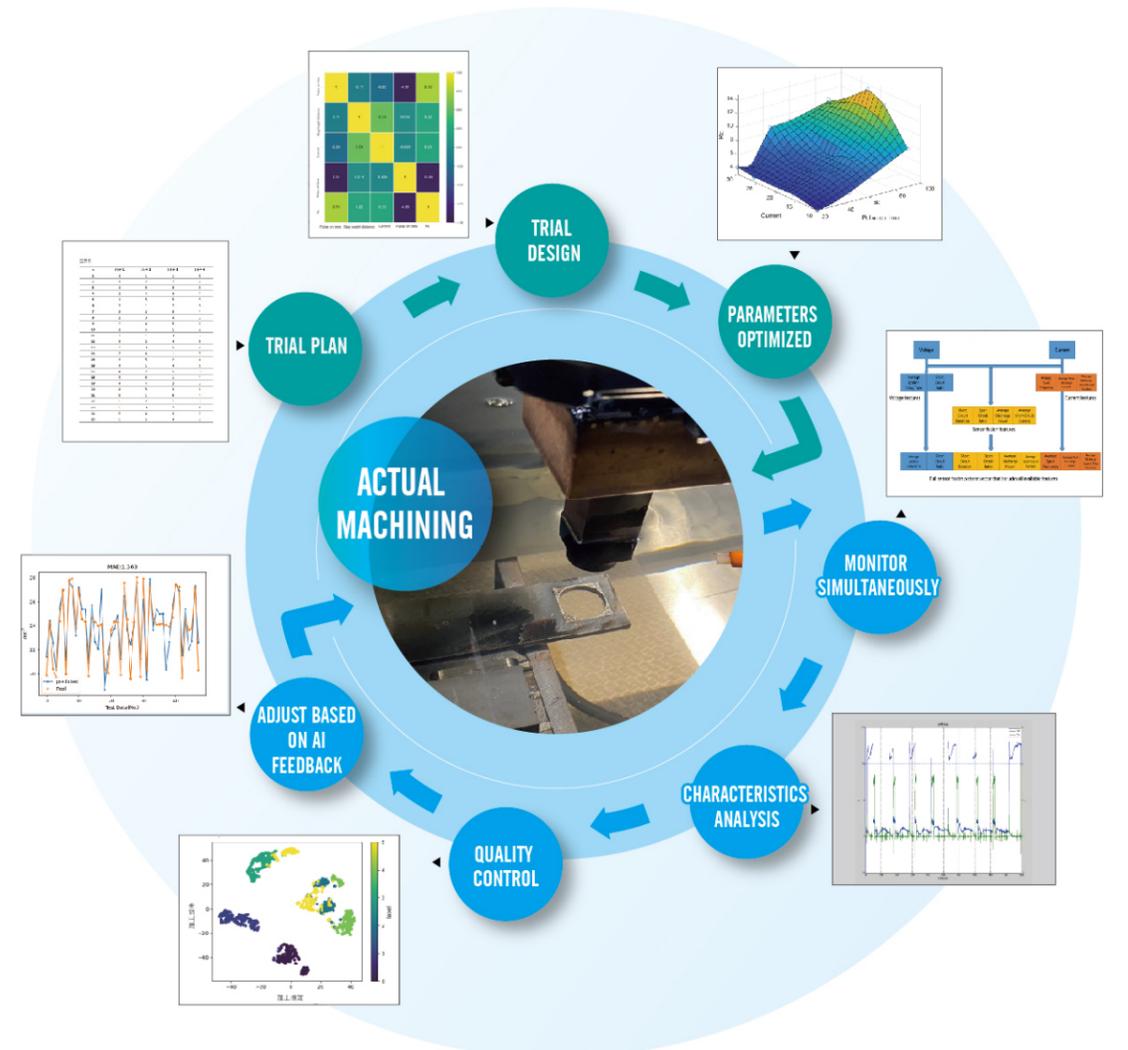
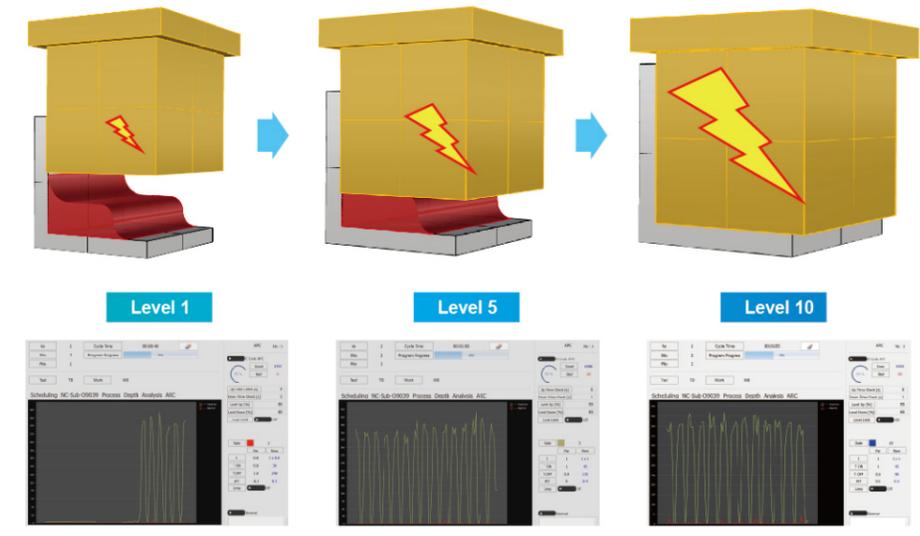


- **24-bit Absolute Type Encoder**
- 16,777,216 pulses/turns ensure precise positioning.
- Steady performance at low-speed enhances machining quality.
- Keeps motor's position during power shortage.

APC Description.

APC – Adaptable parameters control

- Massive efficiency improvement based on the real time condition monitoring.
- When an electrode is approaching a workpiece, there are usually sharp corners and small contact area. For this reason, parameters had to be selected carefully and were held throughout entire roughing process. APC can automatically (by voltage and ampere feedback) adjust sparking conditions to avoid arcing in the beginning of process and later increase the power to reach maximum possible speed.



EX Machine Features

EX430



EX430
X:400
Y:300
Z:300

EX500



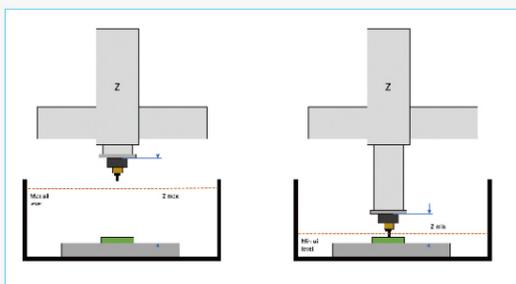
EX500
X: 500
Y: 400
Z: 450

EX750

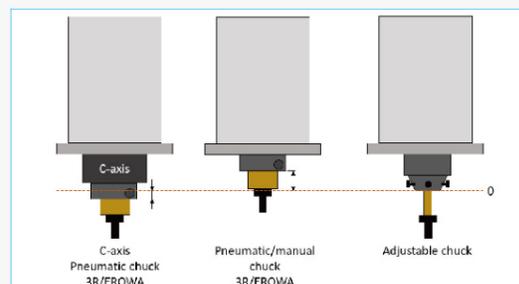


EX750
X: 700
Y: 500
Z: 500

Z axis travel



Distance between chuck and table



Structure			Table-Moving type	Column-Moving type				
Model (by size)			EX430	EX500	EX750	EX1060	EX1270	
Table Travel	X		400(16)	500(20)	700(28)	1000(40)	1200(47)	
	Y	mm (inch)	300(12)	400(16)	500(20)	600(24)	700(28)	
	Z		300(12)	450(18)	500(20)	500(20)	500(20)	
Max. workpiece dimensions (W x D)		mm (inch)	920x505 (36x20)	1020x710 (40x28)	1370x850 (54x34)	1670x990 (66x39)	1860x1120 (73x44)	
Max. filling height of dielectric tank		mm (inch)	215(8.6)	355(14)	355(14)	460(18.4)	460(18.4)	
Distance between chuck and table	mm (inch)		150-450 (6-18)	130-480 (5-19)	80-580 (3-23)	260-760 (10-30)	395-895 (15-35)	
	Max. workpiece weight		kg	550	2300	3000	4500	5000
Max. electrode weight		kg	120	200	250	350	400	
Table Size (W x D)		mm (inch)	650x350 (26x14)	850x450 (34x18)	1000x600 (40x24)	1250x750 (66x39)	1350x820 (73x44)	
Machine weight		kg	1200	3000	4500	5500	6500	
Filter	Tank capacity		l	380	850	1090	1610	1875
	Filter density		µm	20	20	20	20	20
	Filter elements		Pcs	3	6	6	6	6
Generator	Max. working current		A	60	60	60	120	120
	Overall power consumption		KVA	6	10	10	12	12
	Weight		kg	320	350	350	380	380

Structure			Column-Moving type					
Model (by size)			EX1510	EX1880	EX2210	EX2610	EX3010	
Table Travel	X		1500(59)	1800(71)	2200(87)	2600(102)	3000(118)	
	Y	mm (inch)	1000(39)	800(31)	1000(39)	1000(39)	1000(39)	
	Z		600(24)	600(24)	600(24)	600(24)	600(24)	
Max. workpiece dimensions (W x D)		mm (inch)	2070x1570 (81x61)	2420x1220 (95x48)	2710x1580 (106x62)	3290x1690 (129x66)	3915x1580 (154x62)	
Max. filling height of dielectric tank		mm (inch)	585(23)	505(19.8)	605(23.8)	585(23)	605(23.8)	
Distance between chuck and table	mm (inch)		580-1180 (22-46)	305-905 (12-35)	575-1175 (22-46)	560-1160 (22-45)	560-1160 (22-45)	
	Max. workpiece weight		kg	11000	7000	9500	10000	16000
Max. electrode weight		kg	500	500	500	500	500	
Table Size (W x D)		mm (inch)	1580x1100 (62x43)	1850x1000 (73x39)	2250x1100 (89x43)	2700x1100 (106x43)	3100x1100 (122x43)	
Machine weight		kg	14700	9000	13500	16500	19500	
Filter	Tank capacity		l	3410	2715	4035	5400	5580
	Filter density		µm	20	20	20	20	20
	Filter elements		Pcs	6	8	8	8	8
Generator	Max. working current		A	120	120	120	120	120
	Overall power consumption		KVA	12	12	12	12	12
	Weight		kg	380	380	380	380	380

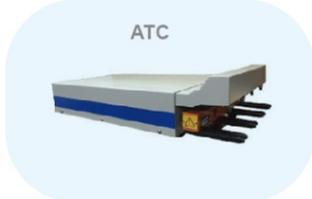
Advantage of tooling systems

Tooling systems offer quick and precise electrode change reduce the time and increase the accuracy.



Common Accessories:

system 3R



ATC

EROWA
system solutions



C axis

HIRSCHMANN



Adapter
Pneumatic Chuck Quick Chuck

or



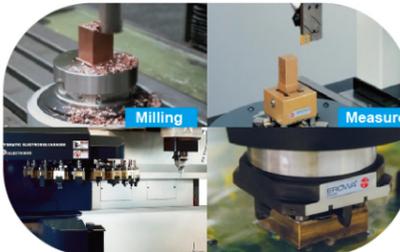


Drawbar



Centering Plate

Practical example:



Milling Measure



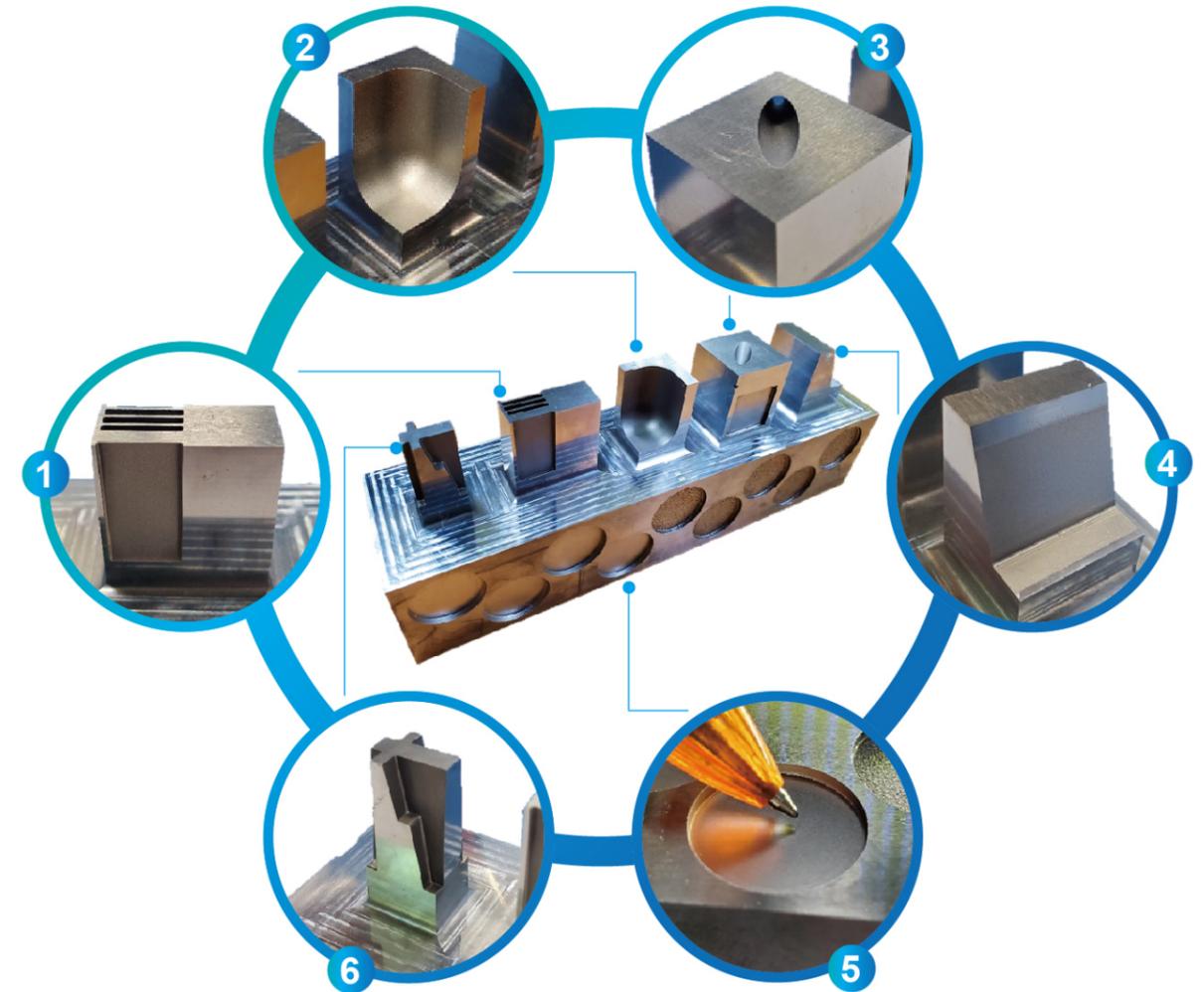
Oil cooling unit with circulating system help to stabilize the temperature of processing and increase the stability of the job.



3 X 220V electricity input with optional transformer. Stabilizer to ensure works' quality and better protection for the generator.

Quality Control

- All products are well tested, measured by high-tech tools to ensure quality of machines.
- Mechanical geometric measurement.
- QC procedures including accuracy test by laser. Dynamic test including operation and idle mode.



1 Rib 1x10mm

Depth: 20mm
Electrode: Gr ISO-63
Number of El.: 2 (2 x 0.15)
Roughness: VDI18/Ra0.8
Time: 1h 10min

2 Corner radius 12x12mm

Depth: 20mm
Electrode: Gr ISO-63
Number of El.: 2 (0.3 + 0.1)
Roughness: VDI16/Ra0.6
Time: 1h 10min

3 Tunnel gate

Depth: 15mm
Electrode: Cu
Number of El.: 1 (0.05)
Roughness: VDI18/Ra0.8
Time: 45min

4 Angled surface connection

Depth: 20mm
Electrode: Gr
Number of El.: 1 (0.1)
Roughness: VDI16/Ra0.6
Time: 40min

5 Surface polishing

Depth: 1.5mm
Electrode: Cu
Number of El.: 2 (0.1)
Roughness: VDI6/Ra0.2
Time: 2h 45min

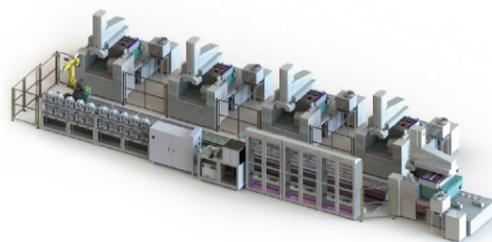
6 Connector

Depth: 20mm
Electrode: Gr ISO-63
Number of El.: 2 (2 x 0.1)
Roughness: VDI16/Ra0.6
Time: 45min

Auto-Production Line Integration manufacturing execution system



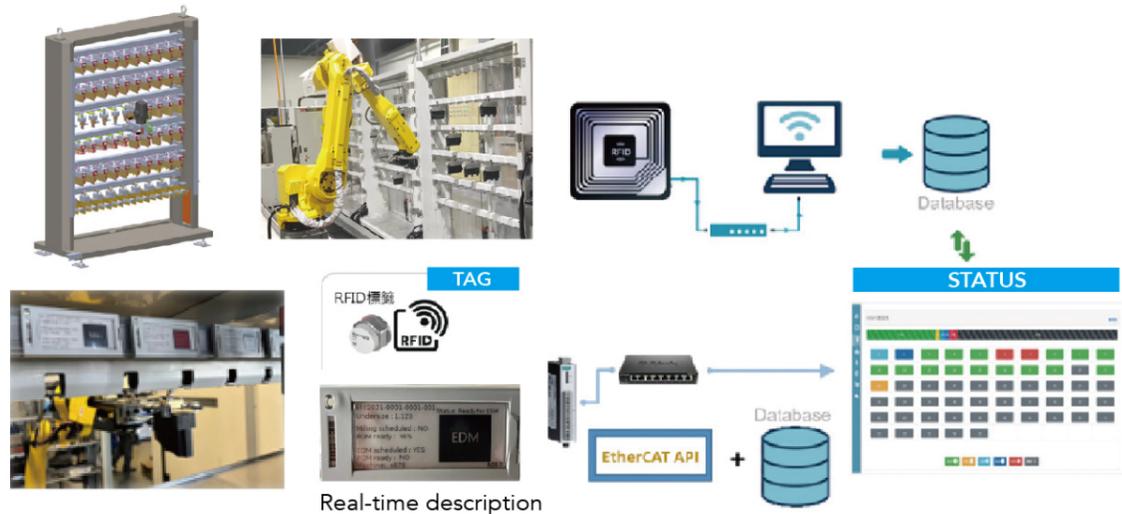
- MES can be displayed via API where available to collect the information of all production lines, utilization rate, status, and processes.
- Available to support on customized tools design projects.
- Integration with online measurement, warehouse management. With RFID tag, all information can be updated instantly.
- By equipping RFID, able to manage the tools and display work details, easy to manage and track.



Tools and Workpiece Management

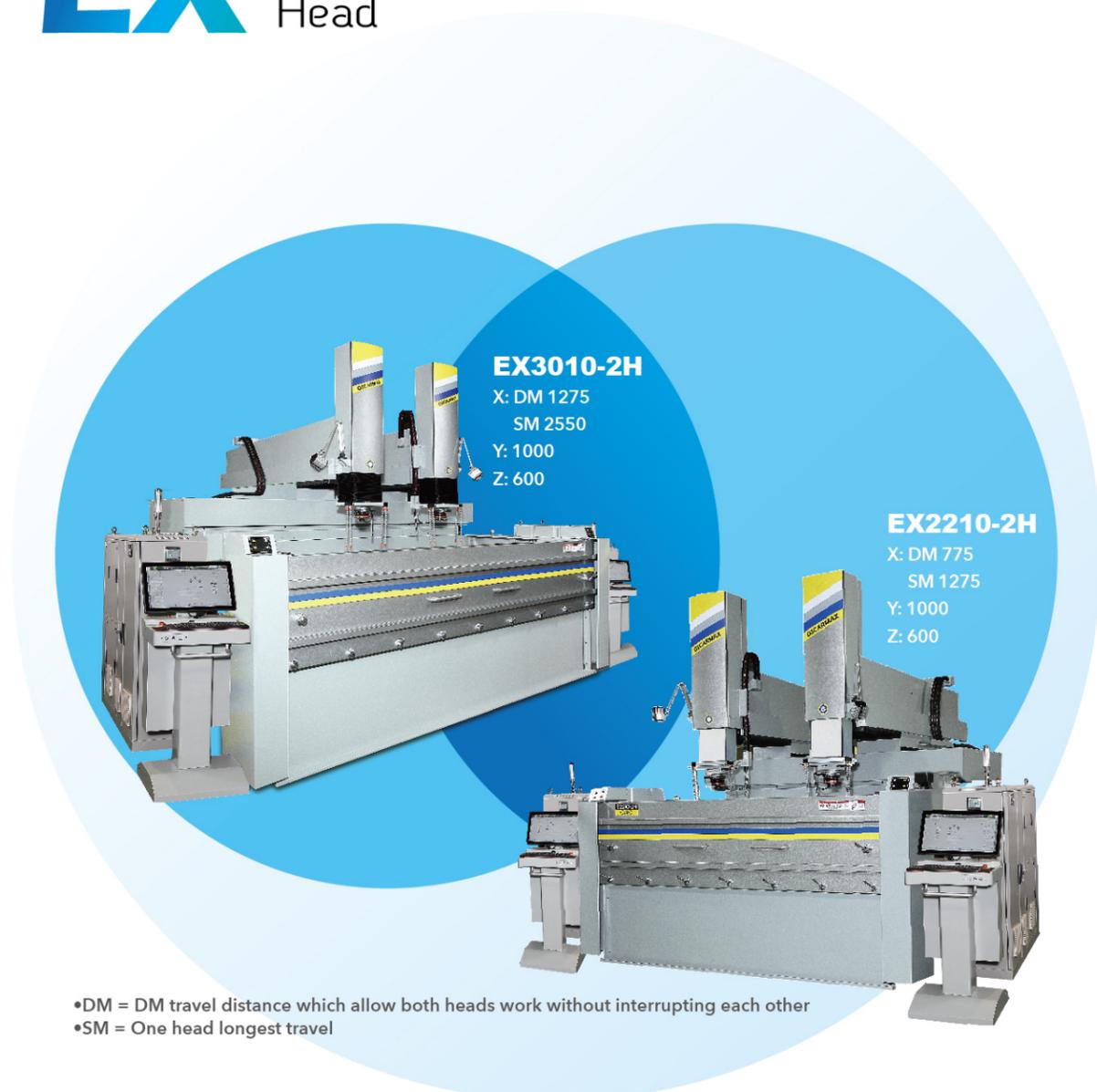
Easy management with real time information.

Tools can be inserted in random position, RFID tags are scanned by robot and sorted according to scheduled operations and priorities.



Real-time description

EX Twin Head



- DM = DM travel distance which allow both heads work without interrupting each other
- SM = One head longest travel

Examples of Application



- One mold sparked simultaneously by two spindles can greatly reduce processing time.
- 2 spindles with independent ball-screws share the work tank therefore save space and machine cost (compare to 2 machines)
- Long axis travel allows to spark wide range of workpiece sizes. From large molds to small precise parts.

Key Features

- X, Y, Z assembled with AC servo motor where all the travel positioning speed able to reach 5M/min, increase the utilization rate.
- Ergonomic remote controller with touch screen for easy operation and access inside the machine work space.
- Strong, rigid FC25 cast iron body designed to ensure accuracy and stability.
- All axes have independent double nut ball-screw (grade C5 or above) and extended P-class linear guides to ensure precision and increase machine life-time.
- Quick work tank oil filling with automatically operated pumps to shorten the idle time.
- Special design for manual sliding door, easy open and close without fail.(EX1270 - EX3010-2H)
- 65 HRC heat treated work table.



Structure			Specification of Twin-Head Column-Moving type.				
Model (by size)			S1510-2H	S2210-2H	S2610-2H	S3010-2H	
Specification	Table Travel	X DM/SM	430/860(17/34)	775/1550(31/61)	1075/2150(42/85)	1275/2550(50/100)	
		Y	mm (inch)	1000(39)	1000(39)	1000(39)	1000(39)
		Z	mm (inch)	600(24)	600(24)	600(24)	600(24)
	Max. workpiece dimensions (W x D)	mm (inch)	2070×1570 (81×61)	2890×1590 (113×62)	3290×1690 (129×66)	3830×1590 (150×62)	
	Max. filling height of dielectric tank	mm (inch)	585(23)	585(23)	585(23)	585(23)	
	Distance between chuck and table	mm (inch)	560-1160 (22-45)	575-1175 (22-46)	560-1160 (22-45)	560-1160 (22-45)	
	Max. workpiece weight	kg	11000	10000	10000	19000	
	Max. electrode weight	kg	500	500	500	500	
	Table Size (W x D)	mm (inch)	1580×1100 (62×43)	2250×1100 (89×43)	2700×1100 (106×43)	3100×1100 (122×43)	
	Machine weight	kg	16200	15000	18000	21000	
Filter	Tank capacity	l	3410	4655	5400	5910	
	Filter density	μm	20	20	20	20	
	Filter elements	Pcs	12	12	12	12	
Generator	Max. working current	A	120	120	120	120	
	Overall power consumption	KVA	12	12	12	12	
	Weight	kg	380	380	380	380	

Standard Accessories

Item	EX430	Moving Column (EX500-EX3010-2H)
X \ Y \ Z axis Double Nuts Ballscrews	√	√
X \ Y \ Z P-Type Linear Guide way	√	√
X \ Y \ Z axis Linear Scale 1μm	√	√
X \ Y \ Z axis Servo Motor	√	√
21.5" touch screen	√	√
Auto Fire Extinguisher	√	√
UV sensor	√	√
Stainless Oil Level Sensor	√	√
LED Work Lamp	√	√
Clamping Plate	√	√
Leveling Pad	√	√
Flushing Nozzle	√	√
Adjustable Electrode Holder	√	√
Filter	√	√
Drill Chuck	√	√
Tool Box & Basic Tools	√	√
Remote Controller	√	√
Signal Tower Light	√	√
Groundfos Pump	√	√
Automatic door	-	√ EX500-EX1060
Automatic lubrication system	√	√
EZ spark circuit for extra hard materials.	√	√
TURBO high speed circuit	√	√

√:Standard □: available —:unavailable

Optional Accessories

Item	EX430	Moving Column (EX500-EX3010-2H)
3R/EROWA - wheel type ATC 16/20	-	□
3R/EROWA - linear type ATC 4/5/6/8	ATC4/ATC4 X2	□
3R/EROWA - C axis	□	□
3R/EROWA - Manual Chuck	□	□
3R/EROWA - Automatic Chuck	□	□
Oil Mist Collector	□	□
AB axes rotary table	□	□
ROBOT - 180 Tool Changer	-	□
EDM oil cooler	□	□
Permanent Magnetic Table	□	□
Measuring Probe	□	□
Electrode Holder 75 & 100 type	□	□
Transformer 3Ø - 380V \ 400V \ 415V	□	□
Uninterruptible Power Supply	□	□

√:Standard □: available —:unavailable

Column-Moving type

Type	L(mm / inch)	W(mm / inch)	H(mm / inch)
EX500	2493(98.5)	2810.5(110.65)	2778(109.37)
EX750	2831(114.5)	3081.5(121.3)	2990(117.7)
EX1060	2997(118)	3234.5(127.3)	3172.5(125)
EX1270	3214(126.5)	3636(143.15)	3273(128.86)
EX1510	3747(147.5)	3944(155.3)	3374(132.8)
EX1880	3567(140.4)	4454(175.4)	3670(149.8)
EX2210	4037(159)	4554(179.3)	3680(144.9)
EX2610	4787(188.5)	4652(183.1)	3680(144.9)
EX3010	5327(209.7)	4554(179.3)	3680(144.9)

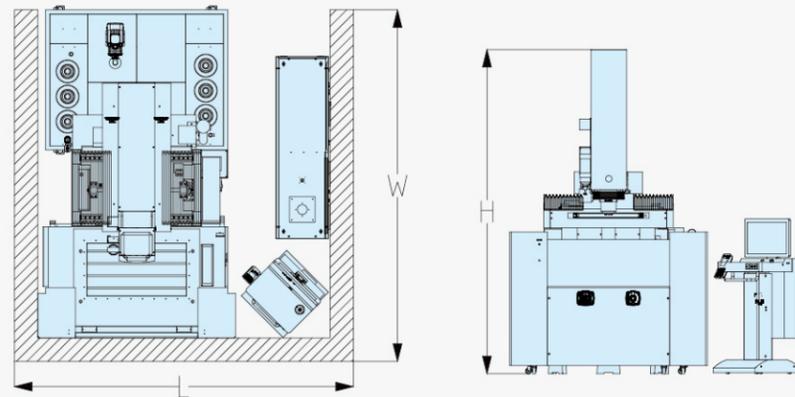
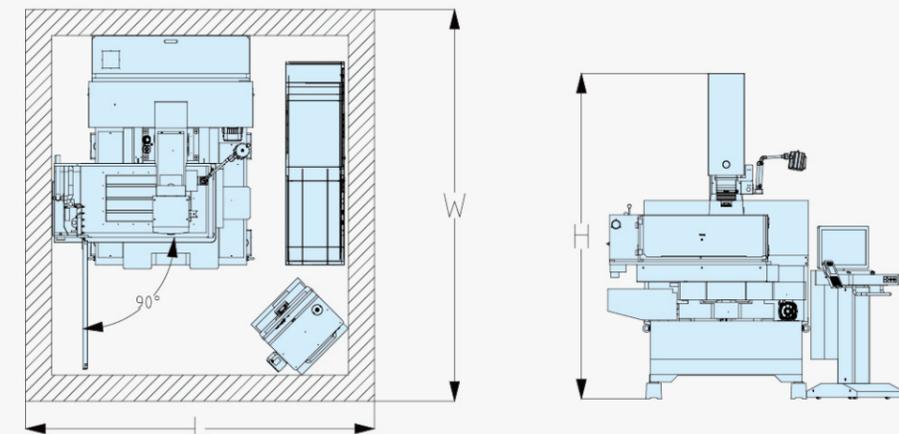
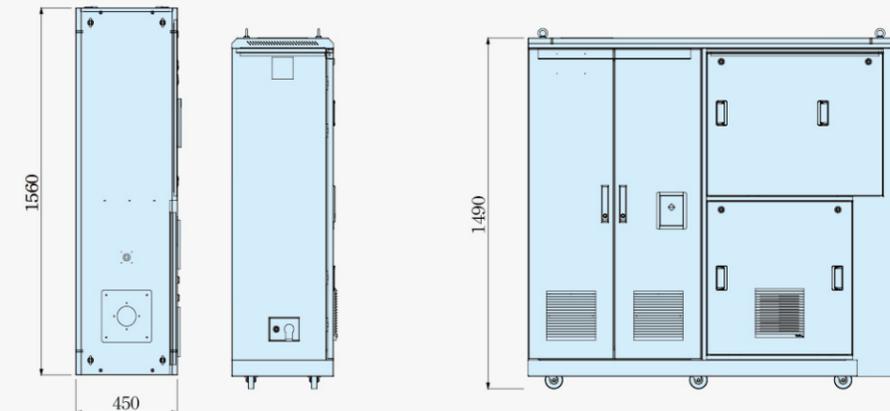


Table-Moving type

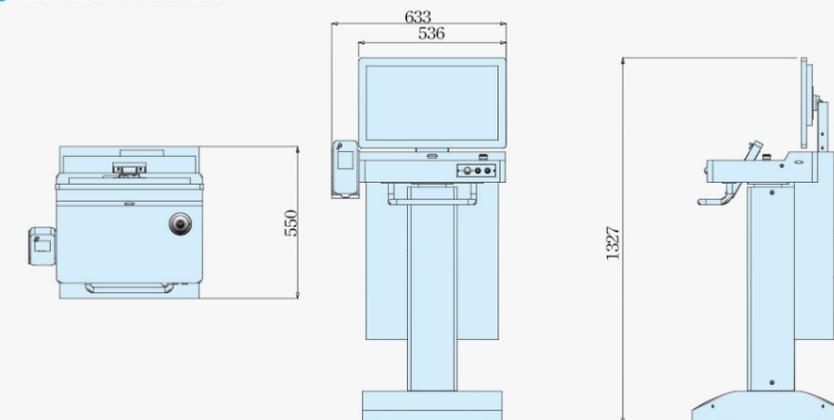
Type	L(mm / inch)	W(mm / inch)	H(mm / inch)
EX430	2242(88.27)	2407(94.76)	2368(93.23)



Generator/EX system



Movable Controller



Twin Head Column-Moving type

Type	L(mm / inch)	W(mm / inch)	H(mm / inch)	SM(mm / inch)	DM(mm / inch)
EX2210-2H	5184(204.1)	4554(179.3)	3680(144.9)	1550(61)	775(30.5)
EX2610-2H	5584(219.8)	4652(183.1)	3680(144.9)	2150(84.6)	1075(42.3)
EX3010-2H	6124(241.1)	4554(179.3)	3680(144.9)	2550(100.4)	1275(50.2)

