

EA8PV ADVANCE

Uniting High-accuracy Technology with High-speed FP-V Power Supply Control Technology

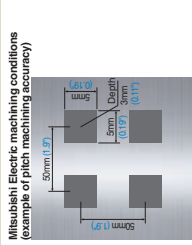


MVH20T-ATC C-axis Automatic elevation tank (option)

C-axis (option)

Machining accuracy $\pm 0.003\text{mm}$ (0.00011") achieved (Note 1)
Compact, high-performance, high-accuracy EDM

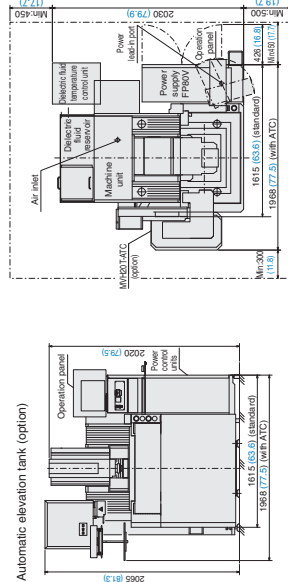
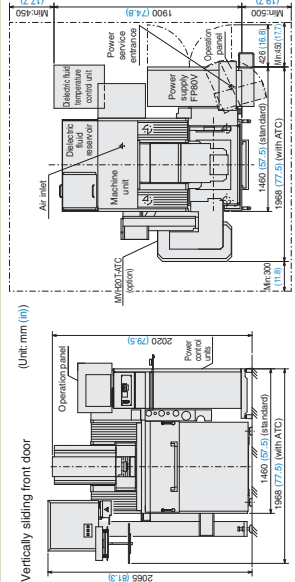
(Note 1) The machining accuracy follows the Mitsubishi Electric machining conditions.



- Standard functions**
- Tungsten carbide machining circuit
 - Ultrafine matte finish circuit (NP2 circuit)
 - Fine matte finish circuit
 - Glossy mirror finish circuit (GMZ circuit)
 - Narrow gap circuit
 - Thermal displacement compensation system
 - X-Y-Z axis linear scale
 - 7-axis mirror finish circuit
 - LAN
- Options**
- High-accuracy built-in C-axis (eight nozzles) + Automatic changerover, with shuttle ATTC (not possible)
 - Dielectric fluid distributor (0.15 (0.006) to 2.0 (0.079) mm/min)
 - High-precision manual operation box
 - Energy saving automatic changerover
 - FP-V power supply extension unit

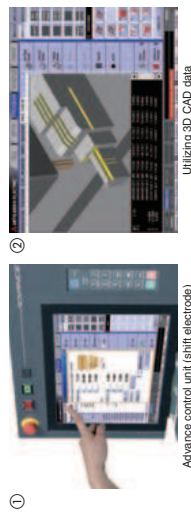
Standard delivery entrance

Standard specifications	Width [mm (in)]	Height [mm (in)]
Shuttle-ATC specifications	1572 (61.9)	2120 (83.5)
Shuttle-7T ATC specifications	1743 (68.6)	2120 (83.5)
MVH-20T ATC specifications	1616 (63.6)	2120 (83.5)



Outstanding screen operability —①—

- 15-inch LCD touch panel
- Machining conditions search (shape EXPERT)
- Utilizing CAD data —②—
- Machining instruction information (EPX) can be read from CAD/CAM/3D data (Parasolid) can be read in
- High-speed FP-V power supply —③—
- Machining speed and electrode wear are both improved
- Tungsten carbide machining circuit is standard equipment
- Energy-saving power supply is standard equipment (20% reduction compared to Mitsubishi Electric FP power supply)
- FP-V power supply extension unit suitable for processing resistant material (option)

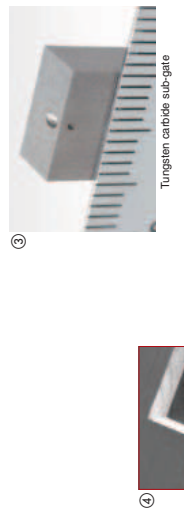


Advance control unit (shuttle electrode)

Utilizing 3D CAD data

Ultrafine finish machining —④—

- Ultrafine matte finish surface NP2 is provided
- Machine narrow pitch connectors using the narrow gap circuit



Tungsten carbide sub-gate

Steel material Rz: 0.4μm Ra: 0.05μm

Ultrafine matte surface finishing (10mm (NP2 circuit))

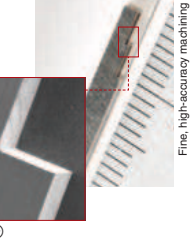
Power positioning unit (not in standard)

Thermal displacement compensation function

Fluid circulation function (standard)

Back of the machine

C-axis/ATC (option)



Fine, high-accuracy machining

Fluid circulation function (standard)

Back of the machine

C-axis/ATC (option)

Outstanding machine operability —⑥—

- Maintenance space has been arranged at the back of the machine to improve workability
- Easily clean sludge in the dielectric fluid reservoir
- Three sided drop tank of automatic elevation tank (option)



Machine unit (standard specifications)

*-> Values in parentheses are for automatic elevation tank.

Model	EASPVM ADVANCE	
Machine unit	1696 x 1000 x 2075 (mm)	1915 x 2250 x 2275* (mm)
Total system weight	2000 (4400) kg (lb)	2330 (5130) kg (lb)
Axis stroke (X x Y x Z)	380 x 260 x 250 (mm)	380 x 260 x 250 (mm)
Distance between table and electrode mounting surface	223 to 183 (mm)	223 to 183 (mm)
Spindle	25 (55) kg (lb)	25 (55) kg (lb)
Method	Vertical front door	Vertical front door
Working tank	<Automatic elevation tank> 2993 x 2903 x 2420 (mm) (118.2 x 114.3 x 95.3") 301 to 180 (mm) (11.8 to 7.1") (optional) 305 to 210 (mm) (12.0 to 8.3") (optional)	
Fluid level adjustment range (from top of table)	500 x 350 (mm)	500 x 350 (mm)
Max. workpiece dimensions (W x D)	740 x 470 x 130 (mm)	740 x 470 x 130 (mm)
Max. workpiece dimensions (W x D x H)	520 x 488 x 180 (mm)	520 x 488 x 180 (mm)
Distance between floor and top of table	900 (35.4) mm (ft)	900 (35.4) mm (ft)
Max. loading weight	550 (121.0) kg (lb)	550 (121.0) kg (lb)
T-slot	Two slots at 134-120 pitch	Two slots at 134-120 pitch
Capacity	165 (43.6) L (gal)	165 (43.6) L (gal)
Dielectric fluid reservoir	One fine paper filter	One fine paper filter
Dielectric fluid temperature control unit	Unit cooler	Unit cooler

Distance between table and electrode mounting surface (70mm granite table specifications)

	3R-MACRO	EROWA	3R-Combi
C-axis	156 to 408 (mm)	175.5 to 425.5 (mm)	168 to 418 (mm)
Spindle	161 to 411 (mm)	175.5 to 428 (mm)	172 to 421 (mm)
Automatic clamp	221 to 471 (mm)	230.5 to 480.5 (mm)	231 to 481 (mm)

Note 1) For MACRO, 3R-Combi and C-axis/ATC, the weight is 2.5kg (5.5lb) electrode. The magazine total is 10kg (22lb).
 Note 2) When using four electrodes, the dimensions are 70 x 70 x 100mm (2.7 x 2.7 x 3.9in).
 Note 3) For MACRO, the weight is 2.5kg (5.5lb) electrode, and is 2.9kg (6.5lb) electrode with MACRO.
 Note 4) ATC can be used with EROWA/TSSO, but not with EROWA Compact (manual only).
 Note 5) The working tank automatic elevation specifications and shuttle-type ATC cannot be combined.

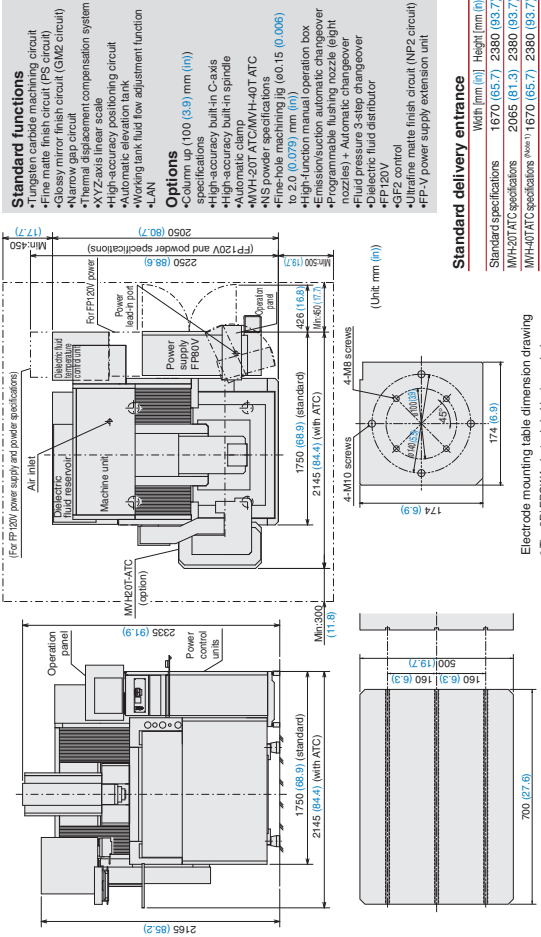
EA12V ADVANCE

Best-selling EDM Featuring Highly Advanced Accuracy and Productivity



High-performance die-sinking EDM with FP-V power supply

Working tank inner dimensions : 850x600x350mm (33.4x23.6x13.7")
 Axis stroke : 400x300x300mm (15.7x11.8x11.8")
 Machine unit dimensions : 1750x2050mm (68.9x80.7")
 System total weight : 3725kg (8200lb.)
 Dielectric fluid reservoir capacity : 340L (89gal.)



Electrode mounting table dimension drawing
 *The 3R EROWA electrode holder is used when the built-in C-axis automatic clamp (option) is provided.

Outstanding screen operability

- 15-inch LCD touch panel
- Machining conditions search (shape EXPERT)
- Utilizing CAD data
- Machining instruction information (EPX) can be read from CAD/CAM
- 3D data (Parasolid) can be read in

High-speed FP-V power supply

- Provides greatly improved machining speed and the tungsten carbide circuit is standard
- Energy-saving power supply is standard equipment
- Power supply for automatic FP-V
- FP-V power supply extension unit suitable for processing resistant material (option)

High-grade machining

- No-polishing glossy surface machining
- Easy-to-polish fine matte surface finish machining
- Ultrafine matte finish surface NP2 (option)

Advanced machining control

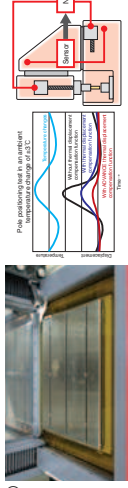
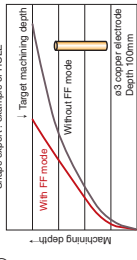
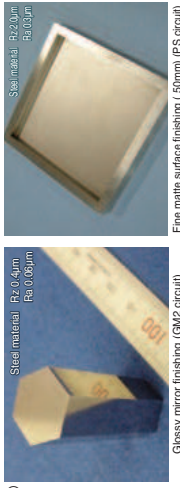
- High-speed jump is realized with machining stabilizing jump control SS Jump 4

High-accuracy technology

- A heat-shielding cabin structure is incorporated
- The fluid displacement compensation function, refined with the MAC2000, is provided
- High accuracy attained with the fluid circulation function

Outstanding machine operability

- Three sided drop tank of automatic elevation tank (multi position function)
- Inside of working tank can be cleaned easily using the manual washing function
- Working tank has been arranged at the back of the machine to improve workability
- Filter (long-life-line-mesh) can be replaced even during machining

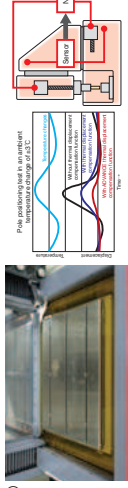
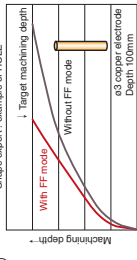
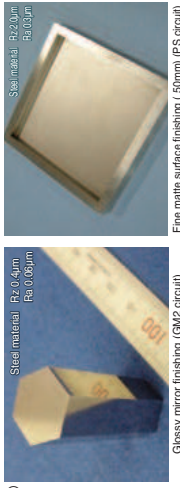


Machine unit (standard specifications)

Model	EA12V ADVANCE
Machine unit	1670 (65.7) x 2380 (93.7)
Total system weight	3725 (8195)
Axis stroke (X x Y x Z)	400 x 300 x 300
Distance between table top and electrode mounting surface	270 to 570 (10.6 to 22.4)
Max. electrode weight	50 (110)
Method	Automatic elevation tank
Inner dimensions (W x D x H) (front to rear)	100 to 300 (3.9 to 11.8)
Working tank	700 x 500 (27.6 x 19.7)
Dimensions (W x D) (front to rear)	93.8 x 23.6 x 13.8
Table	900 (35.4)
Max. loading weight	700 (1540)
T-tid	Three slots at 12:150 pitch
Dielectric fluid reservoir	340 (90/400 (106))
Capacity (unit: dielectric fluid, approx. amount)	
Filtering method	Two line paper filters
Dielectric fluid temperature control unit	Unit cooler

Distance between table and electrode mounting surface

	3R-MACRO	EROWA	3R-Combi
C-axis	1670 (65.7)	157 (5.98)	1670 (65.7)
Spindle	1670 (65.7)	1670 (65.7)	1670 (65.7)
Automatic clamp	1670 (65.7)	1670 (65.7)	1670 (65.7)



Machine unit (standard specifications)

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Max. loading weight	700 (1540)
T-tid	Three slots at 12:150 pitch
Dielectric fluid reservoir	340 (90/400 (106))
Capacity (unit: dielectric fluid, approx. amount)	
Filtering method	Two line paper filters
Dielectric fluid temperature control unit	Unit cooler

Distance between table and electrode mounting surface

	3R-MACRO	EROWA	3R-Combi
C-axis	1670 (65.7)	157 (5.98)	1670 (65.7)
Spindle	1670 (65.7)	1670 (65.7)	1670 (65.7)
Automatic clamp	1670 (65.7)	1670 (65.7)	1670 (65.7)

C-axis/ATC (option)

C-axis		3R	EROWA
Max. electrode weight	50 (110) (Note 1)	kg (lb.)	ITS COMBI
Speed	1 to 30	[mm ³ /min]	
Max. electrode weight	10 (22) (Note 1)	kg (lb.)	
Speed	1 to 1500	[mm ³ /min]	
Max. electrode dimensions	10x6 (2x3)	[mm (in)]	
Max. electrode weight	10kg (22lb.)	[electrode]	
Max. electrode weight	Magazine total: 80kg (175lb.)	[Note 2]	
Max. electrode dimensions	23x70x159	[mm (in)]	
Max. electrode weight	50kg (110lb.)	[electrode]	
Magazine total: 40kg (88lb.)	[Note 3, 4]		

(Note 1) For MACRO Jr, 3R-Combi and Compact of EROWA/COMBI the weight is 2.5kg (5.5lb.) [electrode]. (Note 2) MACRO Jr, 3R-Combi and Compact of EROWA/COMBI the weight is 2.5kg (5.5lb.) [electrode] with MACRO Jr. In both cases, the magazine total is 40kg (88lb.). (Note 3) ATC can be used with EROWA/ITS500, but not with EROWA/Compact (manual only). (Note 4) The maximum weight of the electrode holder is 5kg (11lb.). The maximum weight of the electrode or filing device is required when treating the system.

EA28V ADVANCE

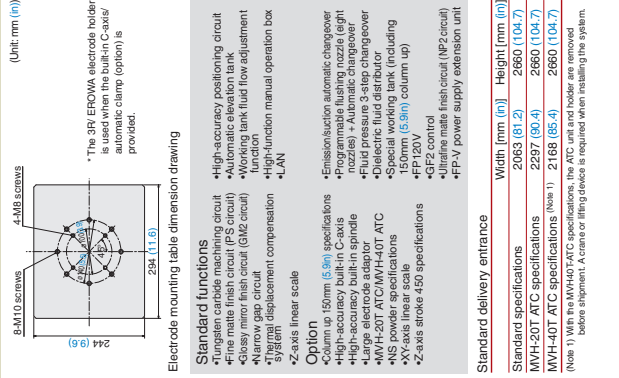
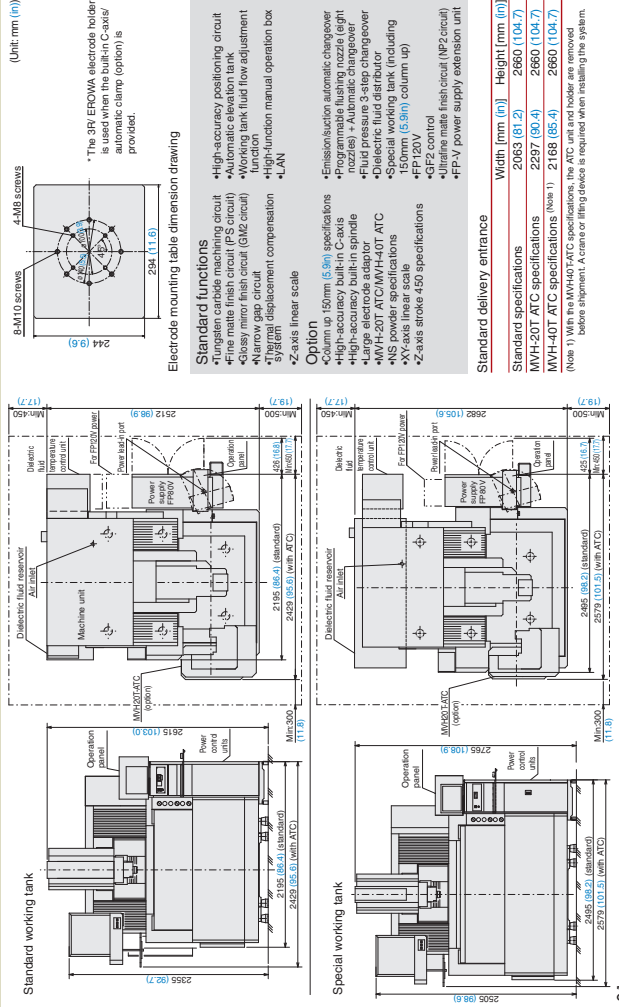
New High-speed, High-accuracy Medium-sized Model with Outstanding Operation and Maintenance Performance



MVH20T-ATC
C-axis (option)

High-performance die-sinking EDM with FP-V power supply

Working tank inner dimensions : 1100x810x450mm (43.3x31.7x17.7")
 Axis stroke : 650x450x350mm (25.6x17.7x13.8")
 Machine unit dimensions : 2195x2512x2615mm (86.4x98.9x103.0")
 System total weight : 5400kg (11880lb.)
 Dielectric fluid reservoir capacity : 390 L (103gal.)



Outstanding screen operability —①—

- 15-inch LCD touch panel
- Machining conditions search (shape EXPERT)

Utilizing CAD data —②—

- Machining instruction information (EPX) can be read from CAD/CAM 3D data (Parasolid) can be read in 3D model
- Machining conditions calculated from 3D model to optimize machining conditions (3D-EXPERT)

High-speed FP-V power supply —③—

- Finishing performance and rugged carbide machining performance equal to the EA12V ADVANCE
- Optimized machining technology enables low-wear machining with graphite electrode
- FP-V power supply extension unit suitable for processing resistant material (option)

Advanced machining control —④—

- Machine medium-to-large-sized workpieces or deep ribs with advanced SS Jump 3
- Adjustable high-volume fluid flow rates increase the range of no-flush machining
- Machining performance using graphite electrodes improved with GF2 control (option)
- Greatly improve machining speed for rib shapes and electrode wear in formed mold shapes

High-rigidity and high-accuracy technology —⑤—

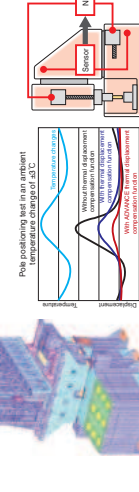
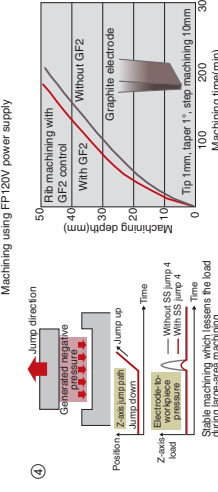
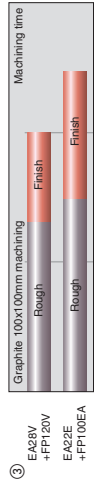
- Machining stability is improved by increasing the machine structure's rigidity
- Misalignment Electric original thermal displacement compensation
- Machine temperature fluctuation suppressed to a minimum with fluid circulation function

Outstanding machine operability —⑥—

- Three-sided drop tank improves access for work set-up (with working tank multi-position function)
- Standard high-function manual operation box with coordinate display
- Easy workpiece loading using hand lifter
- Machine zero point position at center of the XY-axis stroke corresponding to inboard to large electrodes



Utilizing 3D CAD data



C-axis	3R		EROWA	
	Macro/Combi	ITS	COMBI	ITS
Max. electrode weight	50 (110) (Note 1)	lg (lb.)	0	0
Speed	T to 30	[min/r]	0	0
Max. electrode weight	10 (25) (Note 1)	lg (lb.)	0	0
Speed	T to 1500	[min/r]	0	0
MVH	10kg (22lb.)	Magazine total 50kg (110lb.) (Note 5)	0	0
20T	10kg (22lb.)	Magazine total 50kg (110lb.) (Note 6)	0	0
ATC	40T	Magazine total 46g (88lb.) (Note 2, 4)	0	0

(Note 1) For MACRO or 3R-Combi and Combi of EROVA-COMBI the weight is 2.5kg (5.5lb.) electrode with (Note 2) MACRO of 3R-Combi, the weight is 5kg (11lb.) electrode, and is 2.5kg (5.5lb.) electrode with (Note 3) MACRO Jr. In both cases the magazine total is 50kg (110lb.) Combi (magazine only) (Note 4) Storable electrode weight specifications of 10kg (22lb.) electrode (magazine total 50kg (110lb.)) are also available with the MVH40T-ATC (Note 5) MVH40T-ATC electrodes exceeding the specified dimensions. (Note 6) MVH40T-ATC electrodes exceeding the specified dimensions cannot be mounted even if space is provided in the magazine because there will be interference with the machine.