

FA Large Series

## Options

○: Standard equipment ○: Can be field retrofitted ●: Factory installation only ×: Not available

Option Name	FA40VM ADVANCE specification	FA50VM ADVANCE specification
φ0.1 (.004"), 0.15 (.006") automatic threading <sup>*1</sup>	×	×
Wire processing unit	○ <sup>*2</sup>	○ <sup>*2</sup>
Linear scale (XY)	○	○
Linear scale (UV)	×	×
Long stroke taper unit (±75mm) (±3.0")	○	○
Long stroke taper unit (±100mm) (±3.9")	×	×
Angle Master (S/W)	○	○
Angle Master guide kit (H/W)	○	○
AT Master guide Kit	×	×
20/25kg (44/55lb) wire spool unit	○	○
50kg (110lb) wire spool unit	○	○
Fine machining system (excluding insulation jig)	×	×
Working tank door automatic lock	○	○
Ion exchange resin 20L (0.7cu.ft.) specifications (Organo)	○	○
4-piece filter specifications	○	○
Advanced manual control box (with axis display)	○	○
Instruction Manual (Paper edition)	○	○
Wire alignment device	○	○
Lighting	○	○
Tools (tool box)	○	○
Workpiece clamp set	○	○
LAN/W	○	○
DNC	○	○
FTP	○	○

<sup>\*1</sup> The φ0.1 (.004") and φ0.15 (.006") wires cannot be used with the wire processing unit. (These sizes can be used with continuous wire feeder after removing the wire processing unit.)  
<sup>\*2</sup> Incompatible with continuous wire feeder method.

# MITSUBISHI ELECTRIC WIRE EDM FA Large series

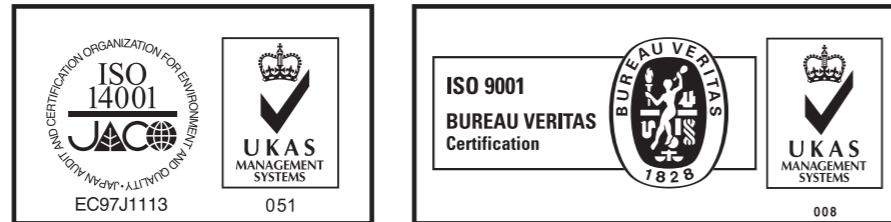
# FA

Large series



[YouTube] [YouTube logo] is a trademark or registered trademark of Google Inc.

Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001 (standards for quality assurance management systems)



**MITSUBISHI ELECTRIC CORPORATION** HEAD OFFICE: TOKYO BLDG., 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN



### FA40V ADVANCE specification

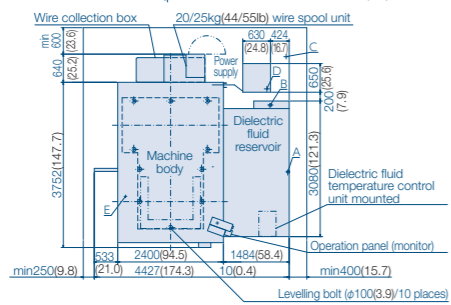
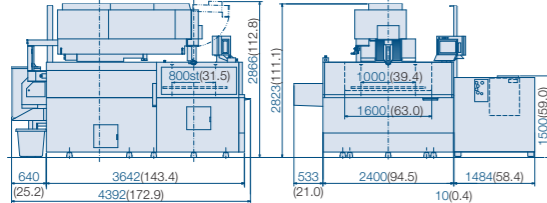


**Default machine dimensions**  
 Width 2490mm\*(98.0")  
 Height 2723mm(107.2")

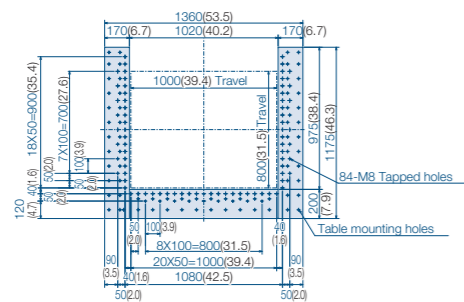
- A: Clean tank drain port Fitted with PT1 screw valve (60mm(2.4") from floor)
- B: Dirty tank drain port Fitted with PT1 screw valve (60mm(2.4") from floor)
- C: City water supply faucet install here for convenience
- D: Power supply port 200/220VAC±10% 50/60Hz, 17.5kVA
- E: Primary air side 0.5MPa(70psi), 42L/min(1.5cu.ft./min.) or more 1/4" hose connection (hose sleeve outer diameter: φ9mm(0.4"))

\* Dimensions with sealing plate cover removed

#### FA40V Outline/Layout diagrams



#### FA40V Table diagram



### FA50V ADVANCE specification

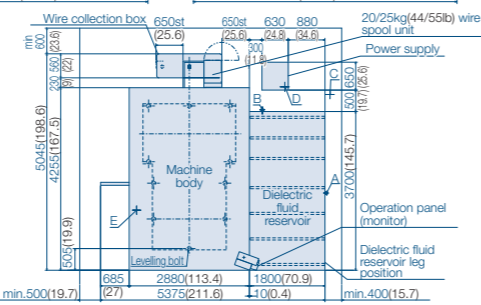
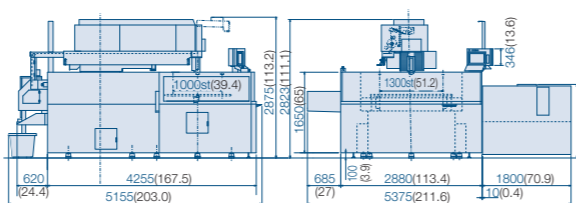


**Default machine dimensions**  
 Width 2985mm\*(117.5")  
 Height 2723mm(107.2")

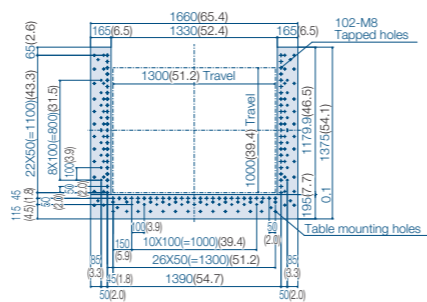
- A: Clean tank drain port Fitted with PT1 screw valve (60mm(2.4") from floor)
- B: Dirty tank drain port Fitted with PT1 screw valve (60mm(2.4") from floor)
- C: City water supply faucet install here for convenience
- D: Power supply port 200/220VAC±10% 50/60Hz, 19kVA
- E: Primary air side 0.5MPa(70psi), 42L/min(1.5cu.ft./min.) or more 1/4" hose connection (hose sleeve outer diameter: φ9mm(0.4"))

\* Dimensions with sealing plate cover removed

#### FA50V Outline/Layout diagrams



#### FA50V Table diagram



#### Machine specifications (standard specifications)

Model		FA40VM ADVANCE specification	FA50VM ADVANCE specification	
Machine unit	Maximum workpiece dimensions (W×D×H)	1550(61.0)×1300(51.2)×395(15.6)	2000(78.7)×1600(63.0)×395(15.6)	
	Maximum workpiece weight	4000(8818)	4000(8818)	
	Table dimensions	1360(53.5)×1175(46.3)	1660(65.4)×1375(54.1)	
	Machining travel (X×Y×Z)	1000(39.4)×800(31.5)×400(15.7)	1300(51.2)×1000(39.4)×400(15.7)	
	Machining travel (U×V)	±75(±3.0)×±75(±3.0)	±75(±3.0)×±75(±3.0)	
	Max. taper angle	15 (with 260mm(10.2") workpiece thickness)	15 (with 260mm(10.2") workpiece thickness)	
	Wire diameter	0.2(.008) to 0.36(.014) (0.36(.014): AT impossible) *	0.2(.008) to 0.36(.014) (0.36(.014): AT impossible) *	
	Weight	11000(24200)	10000(22000)	
	Dielectric fluid reservoir	Tank capacity	2425(640)	3200(845)
		Filtration method	Paper filter (four)	Paper filter (four)
Filtered particle size		3	3	
Water purifier (ion exchange resin)		20(0.7)	20(0.7)	
Dielectric fluid chiller unit		Unit cooler	Unit cooler	
General input	Weight (when dry)	680(1500)	1000(2205)	
	3-phase 200/220 AC±10%/50/60Hz power factor 0.9	17.5	19.0	
Required air rate	Required air rate	0.5 to 0.7(70 to 100)	0.5 to 0.7(70 to 100)	
	Fluid rate	42(1.5) or more	42(1.5) or more	

\* 1 φ0.2 (.008") D.D guides come as standard. (φ0.25 (.010") D.D guides come as standard for the USA and European market)

### Power supply & controller

Compatible model	FA40VM ADVANCE specification	FA50VM ADVANCE specification
<b>Power supply specifications</b>		
Power supply unit	WFAV	
Model	Regenerative transistor pulse type	
Cooling method	Completely sealed/indirect cooling	
Maximum output current	50A	
Anti-electrolytic power supply	Anti-electrolytic power supply in all modes	
Power supply mode	8 types	
Machine voltage selection	17 types	
Machining setting	21 types	
OFF time	16 types	
Stabilization circuit A	10 types	
Stabilization circuit B	16 types	
Stabilization circuit C	3 types	
Stabilization circuit E	5 types	
PM control	3 notches (Changeable with M code or screen) Workpiece material: Steel Applicable only for rough cut conditions Not usable with CS mode	
AVR	Built-in	
Unit dimensions [mm(in)]	650×630×1870(25.6×24.8×73.6)	
Unit weight [kg(lb)]	350 (770)	
<b>Control unit specifications</b>		
Control unit	W31FAV-2	
NC program input method	Keyboard, USB flash memory, Ethernet	
Pointing device	Touch panel, mouse	
Display	15" color TFT	
Display characters	Alphanumeric characters	
Control method	CNC closed loop	
Number of control axes	Max. 4 axes simultaneously	
Setting unit	X, Y, U, V...1/0.1μm	
Minimum driving unit	50nm	
Max. command value	±99999.999mm	
Position command format	Combined use of increment/absolute value	
Interpolation function	Linear, circular, and spiral	
Scale magnification	0.00001 to 99.999999(G code) 0.001 to 9999.999(S code)	
Optimum feed control	Automatic selection of machining speed according to gap voltage sensing	
Path-retrace control	Reverse path retrace during a short-circuit	
Wire offset	±99999.999mm Offset numbers: 1 to 900 (intersection point calculation)	
Basic screen menu	5 types (file, setup, machining support, monitor, maintenance)	4 types
Automatic 2nd cut	Interactive screen method	
Machining condition (E-pack) storage	1 to 6999	
Program number command	1 to 99999999	
Sub-program	Nesting level 30	
Sequence numbers	1 to 99999	
Manual input positioning	Input on screen	
Manual operation box	High-speed, medium-speed, low-speed, ultra-slow speed, inching (0.001mm/0.0005mm/0.0001mm) Positioning function, AT function	
Graphics	XY plane, XY-XZ plane, solid, table scaling, 3D model display, background drawing, automatic machining path drawing	
User memory capacity	1GB	
Maintenance function	Management of consumable parts (time display)	
Adaptive control	SL, CM, EM, OM, PM	
Unit dimensions [mm(in)]	494×175×346 (19.4×6.9×13.6) (excluding keyboard and mouse pad)	
Unit weight [kg(lb)]	20	

### Terms of warranty

#### 1. Terms of warranty

This will differ according to country and region of sale; please contact a Mitsubishi Electric representative for details.

#### 2. Coverage

(1) Terms of repairment free of charge  
 Parts labor and travel are included free of charge when the failure occurs during normal use for the stated Terms of the warranty (based on proper usage and maintenance as described in the operations manual and sales agreement).

Coverage exceptions:  
 ① When a failure occurs that was caused by a machine modification that directly affects the machine's functioning or accuracy.  
 ② When a failure occurs caused by the use of non-standard parts, consumables or lubricants.  
 ③ When a failure occurs caused by a natural disaster such as lightning, earthquake or storms and flooding.  
 ④ When the use of non-recommended consumables or aftermarket parts are used such as filters or flushing nozzles.

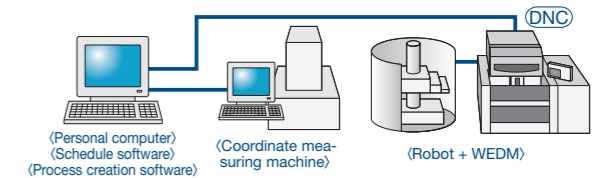
(2) Exclusion of loss in opportunity and secondary loss from warranty liability  
 Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to:  
 ① Damages caused by any cause found not to be the responsibility of Mitsubishi.  
 ② Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products.  
 ③ Special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products.  
 ④ Replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

#### 3. Post Warranty / Expected Service Life

After the warranty period expires, all standard service rates and travel expenses will apply. Normal service life expectancy is 1.1 years after installation, but there may be some cases where discontinued electrical parts such as semiconductors and motors will reduce this period.

### Wire-Cut EDM Automation System

- Accumulate workpiece measurement data  
 (Compatible for external setup using coordinate measuring machine)  
 Enables automatic measurement when measuring on EDM
- Create processes offline
- Automatically exchange workpiece using robot



\* Please contact a Mitsubishi Electric representative for details.