MITSUBISHI WIRE EDM

Advance Series

Wire-cut EDM SYSTEMS

FA Advance Series

* Not all models are supported for all countries and regions.
* The specifications of machine differ according to the country and region, so please check with your dealer.
* Processing data provided in this brochure is for reference only.

NAGOYA WORKS:  1-14, YADA-MINAMI, 5-CHOME, HIGASHI-KU, NAGOYA 461-8670, JAPAN

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

BREAKTHROUGH INNOVATION

for a greener tomorrow
The DNA of the Mitsubishi Wire EDM's have evolved into the leader of today's market place. This new EDM line-up pursues the best of high cutting speed and high accuracy with a powerful new control that makes easy access to this ultimate performance.

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Product Line-up

FA-S Advance Series
Setting global standards for high machining and cost performance

High-performance EDM

FA10S Advance

Stroke(mm)/(in) X: 310(12.2)  Y: 250(9.8)  Z: 220(8.7)
Max. workspace dimensions(mm)/(in)  600(23.6)×400(15.7)×215(8.5)
Max. workpiece weight(kg)/(lb.)  500(1100)
Wire electrode diameter(mm)/(in)  0.1(.004) to 0.3(.012)

FA20S Advance

Stroke(mm)/(in) X: 500(19.7)  Y: 350(13.8)  Z: 300(11.8)
Max. workspace dimensions(mm)/(in)  1200(47.2)×800(31.5)×300(11.8)
Max. workpiece weight(kg)/(lb.)  1500(3300)
Wire electrode diameter(mm)/(in)  0.1(.004) to 0.3(.012)

FA30V Advance

Stroke(mm)/(in) X: 750(29.5)  Y: 500(19.6)  Z: 410(16.1)
Max. workspace dimensions(mm)/(in)  1300(51.1)×1000(39.3)×405(16.0)
Max. workpiece weight(kg)/(lb.)  3000(6600)
Wire electrode diameter(mm)/(in)  0.2(.008) to 0.3(.012)

Product Introduction

Control Unit
Machining Power Supply
Machining Adaptive Control
Mechanism
Options
Power Supply/Control Specifications
Machine Installation
High-accuracy fit machining

- High-accuracy machining with a surface roughness of Ra0.8µm (3σ mean value) or less is possible.
- A highly accurate fit with a straightness and shape accuracy of ±3µm (0.00012") or less is possible.
- Special machining acknowledgement is not required when using PMS or SL control.

High-accuracy stepped machining

- High-accuracy machining with a straightness of 2µm (0.0008") or less is possible even with workpiece thicknesses.
- New guide design reduces wire curl producing a smooth even surface.

Wide-angle taper machining

- Wide Angle taper machining with an angle of up to 45° is possible using the Angle Master option.
- New guide design reduces wire curl and enables high-speed machining.

High-speed machining through drilled holes

- The drilled hole section is automatically recognized from the 3D model. It prevents wire breakage and enables high-speed machining.
- Transition lines where the workpiece thickness changes are dramatically reduced, achieving a uniform machining surface.

High-speed stepped shape machining

- The features of the machined shape are automatically evaluated from a 3D model.
- The machining conditions are optimized according to the workpiece thickness which greatly improves the actual machining time. (in-house comparison 20%).

Machining Samples

[Table]

<table>
<thead>
<tr>
<th>Model</th>
<th>Function used</th>
<th>Electrode material</th>
<th>Workpiece material</th>
<th>Workpiece thickness</th>
<th>Surface roughness</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA10S Advance</td>
<td>PMS, SL control</td>
<td>ø0.2 (.008&quot;)/BS</td>
<td>STEEL (SKD11)</td>
<td>5 to 50mm (0.2 to 2.0&quot;)</td>
<td>Ra1.2µm (40µ&quot;) / Ra0.4µm (15µ&quot;)</td>
</tr>
</tbody>
</table>

High-speed stepped shape machining

- The features of the machined shape are automatically evaluated from a 3D model.
- The machining conditions are optimized according to the workpiece thickness which greatly improves the actual machining time. (in-house comparison 20%).

(Nota) JIS B0601: '01 and ISO 4287: '97/ISO 1302: '02 compliant (Rz conventional notation Ry)

* The listed machining results are all based on in-house conditions and measurements.

- New guide design reduces wire curl and enables high-speed machining.
- Transition lines where the workpiece thickness changes are dramatically reduced, achieving a uniform machining surface.

High-speed machining through drilled holes

- The drilled hole section is automatically recognized from the 3D model. It prevents wire breakage and enables high-speed machining.
- Transition lines where the workpiece thickness changes are dramatically reduced, achieving a uniform machining surface.

High-accuracy gear machining

- High-accuracy machining is possible by using Mitsubishi’s original Corner Master Control which improves shape accuracy by reducing wire lag in the corners.

Rz4.0µm (157µ") /
STEEL (SKD61)
ø0.25 (.010")/MEGA-T
Angle Master
FA20S Advance

Rz2.5µm (98µ") / 30mm (1.2")
STEEL (SKD11)
ø0.3 (.012")/BS
V500 power supply
FA30V Advance

Ra0.75µm (30µ")
Rz6.0µm (236µ") /
30mm (1.2")
STEEL (SKD11)
ø0.3 (.012")/BS
V500 power supply
FA30V Advance

- The total machining speed is improved by up to 30% compared to conventional models when machining workpieces which are 156mm (6.1") or thicker.
- The total machining speed is improved by up to 30% compared to conventional models when machining workpieces which are 156mm (6.1") or thicker.

Tight Clearance machining of thick workpieces

- The HL circuit suppresses wire vibration (barrel shaping) producing a wall straightness of 3µm (0.00012") or less.
- This is perfect for producing high-accuracy stamping and fine blanking die type work.

- RA0.32µm (13µ")
- Rz2.5µm (98µ") / 60mm (2.4")
- STEEL (SKD11)
ø0.25 (.010")/BS
- HL circuit
- FA20S Advance

- RA0.32µm (13µ")
- Die side 150mm (5.9’’)
Punch side 150mm (5.9’’)
STEEL (SKD11)
ø0.25 (.010")/BS
- FA20S Advance

- RA0.32µm (13µ")
- Rz2.5µm (98µ") / 60mm (2.4’’)
- STEEL (SKD11)
ø0.15 (.006")/BS
- CM control
- FA20S Advance

- RA0.32µm (13µ")
- Rz2.5µm (98µ") / 300mm (11.8’’)
- STEEL (SKD11)
ø0.15 (.006")/BS
- FA20S Advance

- RA0.32µm (13µ")
- Rz2.5µm (98µ") / 150mm (5.9’’)
- STEEL (SKD11)
ø0.25 (.010")/BS
- FA20S Advance

Larger frame (X500mm (19.7”)) x Y400mm (15.7”)
machining

- The standard linear scale enables high-accuracy machining realizing a pitch accuracy and shape accuracy of ±5µm (0.0002") or less even with large-scale EDMs.
- Suitable for machining large dies for automobiles or large-screen televisions.

- RA0.32µm (13µ")
- Rz2.5µm (98µ") / 30mm (1.2’’)
- STEEL (SKD11)
ø0.25 (.010")/BS
- CM control
- FA20S Advance

- RA0.32µm (13µ")
- Rz2.5µm (98µ") / 300mm (11.8’’)
- STEEL (SKD11)
ø0.25 (.010")/BS
Global standard machine for realizing high performance & cost efficiency

**FA10S Advance**

Outline/Layout diagrams

Table diagram

<table>
<thead>
<tr>
<th>Main options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire processing unit</td>
</tr>
<tr>
<td>Dielectric fluid chiller unit</td>
</tr>
<tr>
<td>Paper filter (two)</td>
</tr>
<tr>
<td>AT Master guide kit</td>
</tr>
<tr>
<td>Advanced manual operation box</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Machine specifications (standard specifications)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>FA10S Advance</td>
</tr>
<tr>
<td><strong>Unit</strong></td>
</tr>
<tr>
<td><strong>Machining travel (X×Y×Z)</strong></td>
</tr>
<tr>
<td>590×514×200 (23.2×20.2×7.9)</td>
</tr>
<tr>
<td><strong>Maximum workpiece weight</strong></td>
</tr>
<tr>
<td>780 (30.7) kg</td>
</tr>
<tr>
<td><strong>Required air (m³/min)</strong></td>
</tr>
<tr>
<td>500 (19.7) m³/min</td>
</tr>
<tr>
<td><strong>Wire diameter</strong></td>
</tr>
<tr>
<td>ø 1 (0.04 in)</td>
</tr>
<tr>
<td><strong>Wire collection box</strong></td>
</tr>
<tr>
<td>ø 98 (3.9)</td>
</tr>
<tr>
<td><strong>Paper filter (two)</strong></td>
</tr>
<tr>
<td>500 (19.7) μm</td>
</tr>
<tr>
<td><strong>Dielectric fluid chiller unit</strong></td>
</tr>
<tr>
<td>3-phase 200/220 AC ±10%</td>
</tr>
<tr>
<td><strong>Power supply port</strong></td>
</tr>
<tr>
<td>B: Dirty tank drain port</td>
</tr>
<tr>
<td>C: Clean tank drain port</td>
</tr>
<tr>
<td>D: Primary air side</td>
</tr>
<tr>
<td><strong>Operation panel (monitor)</strong></td>
</tr>
<tr>
<td>1050 (41.3)×800 (31.5)×295 (11.6)</td>
</tr>
</tbody>
</table>

**FA20S Advance**

Outline/Layout diagrams

Table diagram

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<th>Main options</th>
</tr>
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<tr>
<td>Wire processing unit</td>
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<tr>
<td>FA20S Advance</td>
</tr>
<tr>
<td><strong>Unit</strong></td>
</tr>
<tr>
<td><strong>Machining travel (X×Y×Z)</strong></td>
</tr>
<tr>
<td>2816×1109×400 (110.9×43.5×15.7)</td>
</tr>
<tr>
<td><strong>Maximum workpiece weight</strong></td>
</tr>
<tr>
<td>2700 (106.7) kg</td>
</tr>
<tr>
<td><strong>Required air (m³/min)</strong></td>
</tr>
<tr>
<td>750 (29.5) m³/min</td>
</tr>
<tr>
<td><strong>Wire diameter</strong></td>
</tr>
<tr>
<td>ø 98 (3.9)</td>
</tr>
<tr>
<td><strong>Paper filter (two)</strong></td>
</tr>
<tr>
<td>500 (19.7) μm</td>
</tr>
<tr>
<td><strong>Dielectric fluid chiller unit</strong></td>
</tr>
<tr>
<td>3-phase 200/220 AC ±10%</td>
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<td><strong>Power supply port</strong></td>
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<td>D: Primary air side</td>
</tr>
<tr>
<td><strong>Operation panel (monitor)</strong></td>
</tr>
<tr>
<td>2816 (110.9)×1109 (43.5)×400 (15.7)</td>
</tr>
</tbody>
</table>
FA30V Advance / FA30V Advance (Z600 specifications)

Outline/Layout diagrams

Table diagram

Machine specifications (standard specifications)

Model | Index | Value
--- | --- | ---
FA30V ADVANCE | Standard | 0.000
FA30V ADVANCE | EASY ADVANCE-300 specifications | 0.000

Default machine dimensions

Width 2250mm X Height 747mm X Depth 2330mm

Dimensions with sealing plate sensor removed

- Dimensions with sealing plate sensor removed
- Dimensions with sealing plate sensor removed
- Dimensions with sealing plate sensor removed
- Dimensions with sealing plate sensor removed
- Dimensions with sealing plate sensor removed

Machine specifications (standard specifications)

Model | Index | Value
--- | --- | ---
FA40VM | Standard | 0.000
FA50VM | Standard | 0.000

Default machine dimensions

Width 2460mm X Height 772mm X Depth 2372mm

Dimensions with sealing plate sensor removed

- Dimensions with sealing plate sensor removed
- Dimensions with sealing plate sensor removed
- Dimensions with sealing plate sensor removed
- Dimensions with sealing plate sensor removed
- Dimensions with sealing plate sensor removed

Machine specifications (standard specifications)

Model | Index | Value
--- | --- | ---
FA40VM | Standard | 0.000
FA50VM | Standard | 0.000

Main options

- Thin processing unit
- 200kg (441lbs) wire spool unit specifications
- 500kg (1100lbs) wire spool anti specifications
- 4-piece filter specifications
- Advanced manual operation box

Required air

- Required air: 3864 m³/min
- Required air: 4020 m³/min

*1 ±0.2 (±0.08) D.D guides come as standard. ±0.25 (±0.10) D.D guides come as standard for the USA and European market)
Advance Control Unit  Now providing 3 new advance functions

New advanced ergonomic design

Easy-Advance
Easy-to-read screen and outstanding operability
- 15-inch LCD and touch panel
- Simple menu configuration eliminates deep nesting

Ergonomic design
- Smooth CAM operations with mouse
- Easy-to-use screen, keyboard and mouse position

Expandable interface
- Convert data with USB memory
- Built-in network interface (LAN/W)

Advanced 3D data usage at the machine control

3D-Advance
Fully utilize 3D CAD data
- Read 3D CAD data (Parasolid format*1)
- Extract 3D model contours
- Create NC data with built-in 2D CAM
- Analyze shape features to improve machining performance
(Refer to following page for details)

*1 Parasolid is a registered trademark of UGS PLM Solutions Co., Ltd.

Providing the latest systems, manuals and machining conditions

Net-Advance
- The latest system software, manuals and machining conditions, etc., are provided through the internet
- Users can download the latest version and upgrade their system

Ergonomic design
- Smooth CAM operations with mouse
- Easy-to-use screen, keyboard and mouse position

Easy to create NC data with machining condition (Machining condition search function)
- Search machining condition by interactive operation
- Attaches searched machining condition to NC data easily

Quick simple workpiece setup (Work alignment function)
- By measuring the workpiece flatness with a dial indicator, the wire tilt can be automatically compensated to match the angle of the part rather than taking time to indicate it in perfectly flat.
- When using multiple workpieces, the flatness is automatically compensated separately in each workpiece coordinate system without editing the program

Navigate programming method according to user’s CAM environment (Program style setting)
- Narrow menu by selecting CAM environment
- Able to create multiple coordinate NC data, adapting with the specification of CAM

High-performance Mitsubishi Electric M700-CNC adopted

* The Advance Control Unit is equipped only with the Advance model.
(A Separate control unit is provided with large models.)
3D-PM * 

CAD/CAM system in use

3D CAD
- 3D CAD data (Parasolid format) can be read and displayed in original format.
- Design information can be taken directly to the site.

Built-in 3D CAM* 1
- Extract contour lines with the height designated in 3D data.
- Transmit the contour lines to the built-in 2D CAM.

Built-in 2D CAM* 2
- Creates NC data from contour lines.
- Use same operations as CamMagic.
- Revise drawings and define additional machining on the EDM.

High compatibility with CamMagic
- Common operability
- Mutual use of machining defined data

2D CAD
- 2D CAD data input (DXF format, IGES format)

CAM
- Read 3D data
- Design information can be taken directly to the site.

Program check/monitor
- Overlay and display 3D data during the NC data path check.
- Overlay and display 3D data on the monitor screen even while machining.
- See the status at a glance.

Extensive utilization of 3D CAD data at the machine control

Advanced 3D data usage at the machine control
3D-Advance

Industry's first 3D adaptive control EDM
3D-PM *
- Analyze 3D data and recognize shapes characteristics.
- Eliminate transition line to improve actual machining performance.
- Eliminate streaks which appear easily in stepped machining area.
- Improve machining speed when nozzles are closed.

CamMagic format
- Machining defined data
- Analyze 3D data and recognize shapes characteristics
- Eliminate transition line to improve actual machining performance
- Eliminate streaks which appear easily in stepped machining area
- Improve machining speed when nozzles are closed

Parasolid format
- 3D CAD data
- Design information can be taken directly to the site.

3D Viewer
- Reference the 3D image display at any time, even during setup.

*1 Advance Control Unit is equipped only with the Advance model. (A separate control unit is provided with large models.)
*2 This is not a function to create or edit the 3D model.
*3 The 2D CAM is based on the CamMagicW, but is limited to basic 2D CAM functions.

* Parasolid is a registered trademark of UGS PLM Solutions Co., Ltd.
Machining Power Supply - Machining Adaptive Control

**Machining Power Supply**

Various power supply control technologies provide high accuracy

**High-speed Anti-electrolysis power supply (AE power supply)**
- Electrolytic corrosion is suppressed to prevent the formation of softened layers.
- AE power supply is used for all power circuits from rough machining to finish machining.
- High-speed, safe unmanned machining possible using water.

**FA30V Advance**
- Extends die life and improves die release properties.
- Achieves both surface roughness and straightness accuracy.
- Machine with workpiece directly set on table (insulate jig not necessary).

**Reduction of wire consumption rate**
- Maintains high straightness accuracy even when the wire speed is kept low in order to reduce wire consumption.
- Ensures the optimum machining condition.

**Fine finish circuit (PF circuit)**
- Machine with workpiece directly set on table (insulate jig not required).
- Machining range not limited (entire XY stroke area).
- Achieves both surface roughness and straightness accuracy.
- Extends die life and improves die release properties.

*Compatible model: FA100 Advance, FA205 Advance, FA30V Advance*

**Oxidation of workpiece surface**

**Shape control power supply Digital-AE**

**Reduction of wire consumption rate**
- Maintains high straightness accuracy even when the wire speed is kept low in order to reduce wire consumption.

**Comparison of AE and conventional machining**

**Comparison of water- and oil-machined surfaces**

**Machining Adaptive Control**

Enabling anyone to perform high-accuracy machining quickly and easily

**Fully automatic rough machining control (Power Master: PM Control)**
- No need to set machining conditions or have EDM machining technology know-how.
- Automatically recognizes machining conditions.
- Ensures the optimum machining condition.

**Corner machining control (Corner Master: CM control)**
- Machine without changing program corner radius size or feedrate.
- Improved accuracy at minimum inside corner R and outside sharp corner.

**Corner control for rough machining (CM-R)**
- Path control with spaced set as priority.
- Energy control with accuracy set as a priority.

**Corner control for finish machining (CM-S)**
- Greatly improved corner machining accuracy.
- Prevents short-circuits during corner machining.

**Dimple (biting) reduction control (Entrance Master: EM Control)**
- Dimples at the approach section reduced.
- Possible to adjust shapes from convex to concave.
- Greatly reduce polishing time.

**Machining surface step/straightness control (Stepless control: SL Control)**
- Remarkable improvement in the finished step and straightness for workpieces with varying thicknesses.
- Complicated parts finished with high accuracy.

**Comparision of straightness**

<table>
<thead>
<tr>
<th>Test shape</th>
<th>Section A</th>
<th>Section B</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: 8mm (0.315&quot;)</td>
<td>3µm</td>
<td>3µm</td>
</tr>
<tr>
<td>B: 4mm (0.157&quot;)</td>
<td>3µm</td>
<td>3µm</td>
</tr>
</tbody>
</table>

*2 Compatible model: FA30V Advance*
Highly rigid machine structure
- Highly rigid drive system design based on the machine’s center of gravity
- Special drive mechanism eliminates drag on the work tank seal plate
- Highly rigid one-piece table is used for easy part setup

Aiming for high accuracy with extensive temperature control
- Dielectric fluid temperature control system synchronized with machine structure temperature
- Working tank dielectric fluid circulation system suppresses temperature fluctuation during setup
- Lower arm cooling mechanism suppresses upper/lower relative displacement
- Inverter-controlled dielectric temperature controller realizes ±0.3°C (±0.5°F) temperature control

High-accuracy taper machining unit
- Angle Master Function realizes high-grade machining of large tapers
- Optimum taper specifications are automatically set to match the wire electrode angle

Mechanism pursuing long-term reliability
- Seal plate self-cleaning mechanism
- Stainless steel used for working tank and dielectric fluid reservoir
- Standard XY-axis linear scale

High-accuracy taper machining unit

Using the new servo technology AFC2 (Advanced Friction Control 2), position errors at direction change or at high-speed traveling can be suppressed. Highly accurate machining is possible even during round machining where direction change errors often occur.

Product Line-up
Machining Samples
Product Introduction
Control Unit
Machining Power Supply
Machining Adaptive Control
Mechanism
Options
New Features/Functions
Machine Installation

### Improving productivity with our high-speed, highly-reliable AT system

**High-speed auto-threader: AT2**
- High-speed, highly-reliable 10-second automatic threading
- Highly reliable broken wire collection method
- Simple structure for wire guide replacement parts

#### Comparison of cycle times

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>FA-S Advance</th>
<th>Conventional Threader</th>
</tr>
</thead>
<tbody>
<tr>
<td>During fine hole search</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Quick retry function

- **Wire Feed**
  - Optical sensor
  - Wire guide

- **Wire Stop**
  - Largest allowance
  - Wire caught in guide

- **Wire Rewind**
  - Wire feed roller

- **Wire Feed**

#### Jet off wire insertion (AT Master)*

- The automatic wire threading range has been increased for wire breakage point insertion, top/bottom countersunk hole insertion, all insertion, small diameter initial hole and submerged threading.
- By using the AT Master guide kit and AT Enhance Mode setting, the auto-threading performance can be improved where using, jet stream on, causes enough turbulence to prohibit threading.

* Applicable models: FA10S Advance, FA20S Advance (option)

#### Pursuing cost and maintenance efficiency

**Pursuing cost efficiency**
- Running costs are reduced using a larger collection roller diameter and the main tension roller multiple times
- Power feeder terminal can be used 48 times (24 times on top, 24 times on bottom)
- The 4-piece filter extends service life (FA20S Advance: Option, FA30V Advance, FA40VM, FA50VM: Standard)

**Pursuing maintenance efficiency**
- AT maintenance screen improves maintenance efficiency
- Easy jet clean nozzle makes it easy to clean the work area
- Auto-oiler system lubricates the X, Y-axis drive system

* Applicable wire diameter: ø0.2, 0.25BS (.008, .010” BS)
Options

Abundant Options

- 20kg (44lb) wire spool unit specifications
- 50kg (110lb) wire spooler unit specifications
- Wire processing unit
- AT Master guide kit
- Angle Master guide kit
- 4-piece filter specifications
- Advanced manual control box
- Standard manual control box
- Lighting
- Workpiece clamp set
- Tools (tool box)

Wire-Cut EDM Automation System

- Automatically exchange workpiece using robot
- Create processes offline
- Accumulate workpiece measurement data

LAN/W, DNC, FTP Options

Required options for network connections

A network connection enables the transmission/reception of various types of data. As shown below, the required options for a network connection vary according to the desired network specifications.

### LAN/W, DNC, FTP Options

<table>
<thead>
<tr>
<th>Option Name</th>
<th>FA10S ADVANCE</th>
<th>FA20S ADVANCE</th>
<th>FA30S ADVANCE</th>
<th>FA30V ADVANCE</th>
<th>FA40VM</th>
<th>FA50VM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
</tr>
<tr>
<td>Machine control (LAN/W)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
</tr>
<tr>
<td>Machine control (DNC)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
</tr>
<tr>
<td>Machine control (FTP)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
<td>Optional (required)</td>
</tr>
</tbody>
</table>

**Notes:**
- *1* The ø0.1 (.004”) and ø0.15 (.006”) wires cannot be used with the wire processing unit.
- *2* Incompatible with continuous wire feeder method.
- *3* A machine IP address is required for a network connection.
- *4* For controllable operation details, refer to the DNC specifications.
- *5* Not available for the FA-V series (but not for the FA-V series).
- *6* If the options listed below are not compatible with a machine, the machine must be upgraded.
- *7* This option is not available for the FA-V series.

**Example of system using:**

FA10S ADVANCE FA20S ADVANCE FA30S ADVANCE FA30V ADVANCE FA40VM FA50VM

**Contact your nearest Mitsubishi Sales Office or dealer for more information.**

- FA10S
- FA20S
- FA30S
- FA30V
- FA40VM
- FA50VM
Power Supply/Control Specifications

All control unit specifications

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<td>FA265 ADVANCE</td>
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<td>Power supply mode</td>
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<td>Without</td>
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<td>Without</td>
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</tr>
</tbody>
</table>

Control unit specifications

- Machine body
- Control unit
- CAD/CAM software
- Machine setup

Check List for Installing Machine

1. Determine the maximum dimensions and weights of the parts to be machined.
2. Plan the installation of the machine in the factory or the machine room.
3. Obtain the necessary permits and permissions for installation.
4. Install the machine according to the instructions provided by the manufacturer.
5. Test the machine for operation and performance.

Check the following before installation:

- Check the machine's dimensions and weights.
- Check the machine's electrical and physical connections.
- Check the machine's controls and accessories.
- Check the machine's lubrication and cooling systems.
- Check the machine's safety features and instructions.

Check the following after installation:

- Check the machine's operation and performance.
- Check the machine's controls and accessories.
- Check the machine's lubrication and cooling systems.
- Check the machine's safety features and instructions.

Preparation of machine installation

1. Installation Place

- Recommended room temperature: 25°C (77°F) ±4°C
- Recommended room humidity: 60% ±10% (relative humidity)
- Recommended room pressure: 98kPa ±5kPa

2. Machine installation

- Machine body
- Control unit
- CAD/CAM software
- Machine setup

3. Machine operation

- Check the machine's operation and performance.
- Check the machine's controls and accessories.
- Check the machine's lubrication and cooling systems.
- Check the machine's safety features and instructions.

4. Machine maintenance

- Check the machine's operation and performance.
- Check the machine's controls and accessories.
- Check the machine's lubrication and cooling systems.
- Check the machine's safety features and instructions.

5. Machine disposal

- Dispose of the machine as required by local laws and ordinances.
- Dispose of the machine's waste as required by local laws and ordinances.
- Dispose of the machine's packaging as required by local laws and ordinances.
- Dispose of the machine's electronics as required by local laws and ordinances.

6. Machine recycling

- Recycle the machine as required by local laws and ordinances.
- Recycle the machine's waste as required by local laws and ordinances.
- Recycle the machine's packaging as required by local laws and ordinances.
- Recycle the machine's electronics as required by local laws and ordinances.

Harmonic Distortion

- If there is harmonic distortion in the power supply, the machine operation could be affected.
- If the harmonic distortion is severe, install a harmonic suppression filter or take other measures.

Recommended wire electrode

Always use the following applicable wire electrode:

- 0.3 mm: AWG 22 for thin steel, 1.0 mm: AWG 8 for thick steel
- 0.3 mm: AWG 22 for thin steel, 1.0 mm: AWG 8 for thick steel
- 0.3 mm: AWG 22 for thin steel, 1.0 mm: AWG 8 for thick steel
- 0.3 mm: AWG 22 for thin steel, 1.0 mm: AWG 8 for thick steel
- 0.3 mm: AWG 22 for thin steel, 1.0 mm: AWG 8 for thick steel

Recommended sliding surface lubricant

- Always use the following applicable sliding surface lubricant:
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Precautions for selecting earth leakage breaker

- If the earth leakage breaker is not installed, the machine operation could be affected.
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Wire-cut EDM SYSTEMS

* Not all models are supported for all countries and regions.
* The specifications of machine differ according to the country and region, so please check with your dealer.
* Processing data provided in this brochure is for reference only.