New generation makes it's mark in a continuously updated lineage.

Next-generation Innovations of our best selling Performance Machine

MVSeries
Product Line-up

Revolutionary MV1200R / MV2400R
High-performance Wire-cut EDMs

MV1200R
[Manual vertical front door]

MV2400R
[Automatic vertical front door]

Symmetric machine design provides stability

Standard MV1200S / MV2400S
Standard Wire-cut EDMs

MV1200B
[Manual vertical front door]

MV2400S
[Automatic vertical front door]
Functions and Features

Fully equipped with useful functions for the manufacturing workplace, featuring refined style, high performance, energy savings, simple operation and vast expertise.

Revolutionary
MV1200R / MV2400R

Security

Machining speed

Energy savings

Corner accuracy

Circular accuracy

ADVANCE control unit

ODS

LSM with linear glass scale feedback

ADVANCE PLUS control offers maximum efficiency using a fully optical drive system (MV1200R/2400R)

MV1200S / MV2400S

Reduced 25%

Reduced 45%

Reduced 69%

Reduced 55%

Reduced 46%

Reduced 42%

Reduced 17%

Reduced 9%

Innovative automatic wire threading

Improved machining accuracy

Improved productivity

Easy operation

Energy savings, low running cost

Ultimate optimization of EDM technology
Super Digital Control

Digital technology optimizes all enhanced functions required by Wire-cut EDMs

• New annealing system greatly improves wire threading with a curl ratio of less than 10%
• Wire break point insertion is greatly improved for thick workpieces
• Wire threading mode can be selected to match the workpiece shape (i.e., jet stream on, jet stream off and submerged break point insertion)

• Equipped with a linear shaft motor (LSM)
• Mitsubishi Electric’s optical drive system uses fiber-optic communications between the control unit, servo amplifier and linear motor to improve machining accuracy

• Faster machining is realized with improved power-supply performance (Rz3.5µm/Ra0.45µm with 3 cuts) (Rz2.0µm/Ra0.28µm with 4 cuts)
• All machining conditions are provided (speed condition, nozzle release condition)

• Search function for machining conditions is improved by a narrow-down function
• Job scheduling adjustments use the schedule call back, extra job insertion and ME-pack feature

• Power consumption reduced up to 69% (FA Series ratio)
• Wire consumption reduced up to 46%
• Ion exchange resin cost reduced up to 25%
• Filter cost reduced up to 45% (Automatic changing filtration flow rate)

• Power consumption reduced up to 69%
• Wire break point insertion is greatly improved for thick workpieces
• Wire threading mode can be selected to match the workpiece shape (i.e., jet stream on, jet stream off and submerged break point insertion)

• Equipped with a linear shaft motor (LSM)
• Mitsubishi Electric’s optical drive system uses fiber-optic communications between the control unit, servo amplifier and linear motor to improve machining accuracy

• Faster machining is realized with improved power-supply performance (Rz3.5µm/Ra0.45µm with 3 cuts) (Rz2.0µm/Ra0.28µm with 4 cuts)
• All machining conditions are provided (speed condition, nozzle release condition)

• Search function for machining conditions is improved by a narrow-down function
• Job scheduling adjustments use the schedule call back, extra job insertion and ME-pack feature

• Power consumption reduced up to 69% (FA Series ratio)
• Wire consumption reduced up to 46%
• Ion exchange resin cost reduced up to 25%
• Filter cost reduced up to 45% (Automatic changing filtration flow rate)
Machining Samples

Revolutionizing product creation with high-performance machining required for future generations

Highly accurate pitch machining

Model: MV2400R
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Steel (PQ0513)
Workpiece thickness: 20mm (0.78")
Surface roughness: Rz2.5µm/Ra0.32µm
Machining accuracy: ±2µm

- Stable automatic threading is realized using intelligent AT during multi-shape machining
- Highly accurate machining is possible using ODS

Circular machining

Model: MV1200R
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Steel (SKD11)
Workpiece thickness: 30mm (1.18")
Surface roughness: Rz2.0µm/Ra0.28µm
Machining accuracy: Roundness 2.0µm

- Circular accuracy is improved using ODS
- Bumps or undercuts at the approach point are suppressed, attaining precise circular cuts

Cutting edge machining

Model: MV1200R
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Steel (SKD11)
Workpiece thickness: 20mm (0.78")
Surface roughness: Rz2.5µm/Ra0.32µm
Machining accuracy: ±3µm

- Highly accurate machining is possible using ODS
- Improved taper accuracy using PFC creates uniform cutting edge lengths

Slide core

Model: MV2400S
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Steel (SKD11)
Workpiece thickness: 15mm (0.59"")
Surface roughness: Rz3.5µm/Ra0.45µm
Machining accuracy: ±3µm

- Thick workpieces can be machined with high straight-line accuracy using ODS
- High-speed and precise straight machining are realized using PFC

Fit machining

Model: MV1200S
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Steel (SKD11)
Workpiece thickness: 20mm (0.78")
Surface roughness: Rz2.0µm/Ra0.32µm
Machining accuracy: ±3µm

- Stable automatic threading is realized using intelligent AT during multi-shape machining
- Productivity is improved by reducing machining time using PFC

Connector machining

Model: MV1200R
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Steel (SKD11)
Workpiece thickness: 5mm (0.197")
Surface roughness: Rz2.0µm/Ra0.32µm
Machining accuracy: ±2µm

- Highly accurate machining is possible using ODS
- A machining accuracy of ±3µm is realized for high L/D machining of pin widths from 2.0 to 4.5mm and a length of 40mm

Gear machining

Model: MV1200R
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Steel (SKD11)
Workpiece thickness: 30mm (1.18")
Surface roughness: Rz3.1µm/Ra0.38µm
Machining accuracy: ±3µm

- Highly accurate machining is possible using ODS
- New corner machining control (CM3) improves shape accuracy to within ±2µm under nozzle release conditions

Thick workpiece machining (tungsten carbide)

Model: MV2400R
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Tungsten carbide (G5)
Workpiece thickness: 100mm (3.9"")
Surface roughness: Rz4.8µm/Ra0.71µm
Machining accuracy: ±4µm

- High-speed and highly accurate machining are possible using PFC
- High-speed and precise straight machining are possible using PFC
- High-grade machining of special materials (e.g., titanium, graphite, PCD) is realized using a standard V power supply

Thick workpiece machining

Model: MV2400S
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Tungsten carbide (G5)
Workpiece thickness: 200mm (7.9"")
Surface roughness: Rz4.8µm/Ra0.71µm
Machining accuracy: ±3µm

- A straight-line accuracy within 5µm is possible even with a 200mm-thick workpiece

Parts machining

Model: MV1200S
Electrode material: ø0.2 (0.008")/BS
Workpiece material: Titanium alloy (G5)
Workpiece thickness: 40mm (1.6"")
Surface roughness: Rz2.3µm/Ra0.26µm
Machining accuracy: ±2µm

- High-speed and highly accurate machining are possible using PFC
- High-grade machining of special materials (e.g., titanium, graphite, PCD) is realized using a standard V power supply

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

(Note: JIS B0601:01 and ISO 4287:97/ISO 1302:02 compliant (conventional notation Ry))
Innovative automatic wire threading
Advanced technology for greatly improved productivity

Wire electrode annealing structure
- Improved wire annealing power supply and tension control enhance wire threading (producing a curl ratio of 10% or less), which straightens the natural curl caused by spooling
- The greatly lengthened distance of annealed wire improves automatic wire threading for thick workpieces

* A curl ratio of less than 3% applied for the conventional model (FA Series)

New jet water flow mechanism
- Flow analysis simulation was used to optimize the water flow mechanism for straightening the jet stream, which improves wire threading for thick workpieces

Improved automatic wire threading
- New annealing system greatly improves wire threading with a curl ratio of less than 10%
- Wire break point insertion is greatly improved for thick workpieces
- Wire threading mode can be selected to match the workpiece shape (i.e., jet stream on, jet stream off and submerged break point insertion)

Wire collection unit
- Broken wire collection, which clears the upper guide after a wire break, has been improved so it handles even highly curled wire with no hesitation

Wire feed wiper
- A felt wiper added to the wire path removes manufacturing impurities from the wire surface, which reduces slipping on the drive rollers

One-touch lever clamp mechanism
- New one-touch lever clamping system provides quick, easy and accurate power feed indexing
- The clamp lever accurately locates the power feeder with repeatable torque, unlike systems that use the set-screw method

Diamond guide
- A round diamond guide is used to provide the best accuracy for both straight and taper cutting applications
- Both upper and lower guides can be replaced by simply unscrewing the flush cups
Opt Drive System

Improved machining accuracy

Next-generation drive system and refined power-supply control technology

Magnet Coil

Opt Drive System

● Non contact power transmission ensures stable and accurate axis movement for many years

● Highly accurate axis movement is possible without any backlash

● Power consumption is reduced by utilizing a full 360° magnetic flux as the effective driving force

● High-speed fiber-optic communications and a linear shaft motor synergistically improve machining accuracy

● Servo amplifier and control unit developed by Mitsubishi Electric contribute to system optimization

Linear Shaft Motor

● Power consumption is reduced by utilizing a full 360° magnetic flux as the effective driving force

● Highly accurate axis movement is possible without any backlash

● Non contact power transmission ensures stable and accurate axis movement for many years

Linear Shaft Motor with Linear Glass Scale Feedback

Example of corner machining samples

Shape control power supply (Digital-AE I)

● Wire straightness is digitally controlled with the world’s only electrical-discharge position control

● Total machining time is reduced by improving straightness accuracy during rough, intermediate and finishing processes

Conventional technology

Machining surface step/ straightness control

Machining surface step/ straightness control

OM control is designed to attain a uniform electrical-discharge gap regardless of the corner shape

This improves the radial shape error and greatly improves the total part accuracy

Under-cut (dimple) reduction control

● Reduces dimples at the approach section

● Allows shape adjustment from convex to concave

● Greatly reduces polishing time

Examples of PM machining applications

Dimensional error control

● OM control is designed to attain a uniform electrical-discharge gap regardless of the corner shape

● This improves the radial shape error and greatly improves the total part accuracy

Corner machining control (CMO control: Corner Master)

● Improves machining accuracy at extremely small in-corners and out-corners

● Realizes highly accurate shape machining even for complicated geometries with several types and sizes of corners

● Corner accuracy is easily controlled by the operator

● Wire electrode: ø0.2 (.008")/BS 100mmt

● Workpiece: Steel (SKD11), t60mm (.24")

● Wire tension control (TS Master)

● Suppresses tension fluctuation for more stable machining

● Suppresses lines on the machined surface after polishing

● Examples of PM machining applications

● Workpiece: Steel

● Analysis of machined surface after polishing

● Comparison of straightness accuracy before and after polishing

wire electrode ø0.2 (.008")/BS Workpiece: Steel (SKD11) Wire: BS 100mmt

Wire electrode ø0.2 (.008")/BS Workpiece: Steel (SKD11) Wire: BS 100mmt

Analysis of machined surface after polishing

Comparison of straightness accuracy before and after polishing
Precise Finish Circuit

Improved productivity

Wide range of technologies for ever-changing working environments

High-speed machining has been enhanced by newly improved power-supply performance for multi-pass type jobs

<table>
<thead>
<tr>
<th>Machining time comparison for Rz3.5µm with 3 cuts</th>
<th>Machining samples</th>
<th>Surface roughness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional model</td>
<td>MV-S</td>
<td>Reduced 9%</td>
</tr>
<tr>
<td></td>
<td>MV-R</td>
<td>Reduced 17%</td>
</tr>
<tr>
<td><em>Compared to conventional Mitsubishi Electric Wire-cut EDM (FA Series)</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Machining time comparison for Rz2.0µm with 4 cuts</th>
<th>Machining samples</th>
<th>Surface roughness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional model</td>
<td>MV-S</td>
<td>Reduced 9%</td>
</tr>
<tr>
<td></td>
<td>MV-R</td>
<td>Reduced 17%</td>
</tr>
<tr>
<td><em>Compared to conventional Mitsubishi Electric Wire-cut EDM (FA Series)</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table insulation

- Insulated worktable ensures improved surface finishing
- Stable machining realized when using short-pulse and low-voltage machining conditions

Wire guide

- Flow analysis simulation was used to optimize the water flow through the guide, enhancing cutting speed by improving sludge removal from the gap
- Angle Master Function realizes highly accurate machining of large tapered sections
- Insulated worktable ensures improved surface finishing
- Uniform die edge land cuts are possible
- Angle deviation point (Diamond die) Accurate angle machining using round dies

High-speed digital control

- Spark detection speed (up to twice as fast as our conventional model) provides improved discharge efficiency and suppresses wire breakage simultaneously while improving machining speed

High-accuracy taper machining using round dies

- Highly accurate machining of extremely small tapered sections is realized
- Uniform die edge land cuts are possible
- Angle Master guide kit is optional
  "Angle Master guide kit is optional"
- "Max. taper angle is 45° (at max. 40(1.5") mm"

High-speed anti-electrolysis power supply (AE power supply)

- Electrolytic corrosion is suppressed, preventing the formation of soft layers
- Compatible with all power circuits, from rough machining to finish machining
- High-speed, safe unmanned machining possible using water

Hardened table
Ceramic Casting

Comparison of AE and DC power-supply machining

- Comparison of water-and oil-machined surfaces

Comparison of AE and DC power-supply machining

- Comparison of water-and oil-machined surfaces

Wire electrode : ø0.2(.008")/BS
Workpiece : Steel(SDK11), t60mm(2.4")

Wire electrode : ø0.2(.008")/BS
Workpiece : Steel(SDK11), t20mm(0.8")

Aluminum
Brass
Titanium alloy

DC power-supply machining
AE power-supply machining
Natural User Interface

Easy operation

User-friendly features ensure easy operation

Ergonomic design
- User-friendly keyboard and mouse
- Easy-to-view screen (15-inch)
- Intuitive operations using touch-panel control

Set-up screen
- Outstanding graphics provides easy operation

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. This reduces further set-up time

Machining condition search function
- Interactive operation easily creates NC data with machining condition
- Job scheduling adjustment uses the schedule call back, extra job insertion and ME-pack feature

High-accuracy taper machining (Angle Master)
- Angle Master function realizes precise machining of large tapered angles
- Optimum taper specifications are automatically set to match the wire electrode angle

Advanced 3D data for machine control
- Reads and displays 3D CAD data (Parasolid format) with a built-in 3D CAM
- Extracts 3D model contours with a built-in 3D CAM
- Creates NC data, including machining conditions, with a built-in 3D CAM
- Automatic ME-pack insertion into the 2D CAM path
- Analyzes shape features for improved machining performance with a 3D-PM

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

Hardened table and all stainless-steel structure
- Equipped with a hardened table
- The working tank and dielectric supply unit are made of stainless-steel
- Resistant to deterioration by dielectric fluid and sludge

Wire alignment
- Highly accurate wire alignment is easy using the wire-alignment device (optional)
- Taper parameter set-up is simple using the wire-alignment device

Cleaning mechanism <MV2400RV5>
- A forced-flush self-cleaning mechanism prevents sludge from sticking to the stainless-steel seal plate

Precise positioning
- Highly accurate workpiece pick-up positioning is possible with the water flow on or when a workpiece is submerged

Wire travel system
- The stability of the wire tensioning system is improved by a felt wiper and felt keeper pads that eliminate the chance of the wire jumping off the rollers

Dielectric fluid supply unit
- A large access window into the fluid tank provides easy entry for cleaning

Dielectric fluid flow meter and jet flow adjustment valve
- Dielectric flow meters are easy to read
- The adjustable jet flow valve increases the range of work that can be done

Filter pressure gauge and jet cleaning nozzle
- Easily read the filter pressure
- The convenient location of the jet cleaning nozzle makes tank clean-up easy

Unit cooler filter
- Chiller air filter

Broken wire collection box
- Conveniently located in front for easy maintenance

- Work alignment function
- Machining condition search function
Energy savings, low running cost

Realizing low costs and environment-friendly operation

Power consumption reduced up to 69%

- Conventional model
- MV-S: Reduced 55%
- MV-R: Reduced 69%

Filter cost reduced up to 45%
- Conventional model
- MV-R/S: Reduced 45%

Wire consumption reduced up to 46%
- Conventional model
- MV-S: Reduced 42%
- MV-R: Reduced 45%

Ion exchange resin cost reduced up to 25%
- Conventional model
- MV-R/S: Reduced 25%

Filter cost is reduced by changing the filtration flow rate between the rough cut and finishing processes.

Wire consumption is reduced by ODS.

Increased power-supply efficiency reduces the wear on the wire, allowing the wire spooling rate to be reduced by PFC.

Enhanced power-supply conditions can be used with a lower fluid resistivity setting by PFC.

Running cost
- Total running cost reduced up to 42%, which is accounted for 90% by filter, ion exchange resin and power consumption.

New energy-saving mode (Sleep Mode): MV-S/R/S
- The new energy-saving mode can be scheduled according to the current job ending time and start time the next day.
- In Sleep Mode, the amount of energy consumed is greatly reduced as the result of using an automated pump-shut-off system.
- Once the scheduled start time is reached, the system restarts the fluid system thermally, stabilizing the machine for work the next day.

Flat power feed terminal
- The flat shape makes it easy to index to the next location.
- A total of 48 index locations can be used (24 on each side).

Main tension roller
- Multiple indexing locations greatly reduce running costs.

Large-diameter collection roller
- Large collection roller with multiple index locations greatly reduces running cost.
ADVANCE PLUS control

Super Digital Control × ADVANCE PLUS control expand the capabilities of electrical-discharge machining.

- **Machining speed**
  - New V350V power-supply control realizes high-speed machining.
  - Optimized control of power-supply during intermediate and finishing processes reduces total machining time.

- **Energy savings**
  - Energy consumption is reduced according to the current job ending time and the next day's starting time (Sleep Mode).

- **Corner accuracy**
  - ODS provides high accuracy even when cutting a U-V independent tapered shape.
  - Machining accuracy is improved in very small inside & outside corn radii.

- **Circular accuracy**
  - Compensation accuracy improved by new AFC servo control.

- **Security**
  - Anti-virus protection is provided as standard equipment by one of the world leaders in security control.
  - Pattern file can be used semi-permanently without renewal.

**Machining time reduced up to 17%**

- Machining time reduced up to 17%
  - **Control**
    - MV-S
    - MV-R
  - Wire electrode: ø0.2 (0.008")/BS
  - Workpiece: Steel (SKD11), t60mm (2.4")

**Improved corner accuracy**

- ODS provides high accuracy even when cutting a U-V independent tapered shape.
- Machining accuracy is improved in very small inside & outside corn radii.

**Improved circular accuracy**

- Compensation accuracy improved by new AFC servo control.

**Energy savings**

- Energy consumption is reduced according to the current job ending time and the next day's starting time (Sleep Mode).

**Security**

- Anti-virus protection is provided as standard equipment by one of the world leaders in security control.
- Pattern file can be used semi-permanently without renewal.

**Machining speed**

New V350V power-supply control realizes high-speed machining.

**Optimized control of power-supply during intermediate and finishing processes reduces total machining time.**
Options

- Advanced manual control box
- Standard manual control box

Wire processing unit
- Spent wire-electrode is cut at the discharge section

4-piece filter system
- 4-piece filter specifications reduce filter replacement frequency

Angle Master guide kit
- Max. 45˚ tapered machining possible using dedicated diamond guide

Wire-alignment device
- This device aligns the wire-electrode with the table

20kg(44.1lb) wire spool unit
- Long-time continuous machining is possible

3-color warning light
- Indicates machine operating status

LED light
- High brightness LED lighting

Workpiece clamp set
- Clamp jigs dedicated to holding workpieces

Power supply
- Automatic vertical front door

Communication
- External signal output

Software
- Angle Master (SW)
- Anti-virus protection
- Sleep mode

Display
- 3-color warning light
- Run timer
- Option box

Others
- Instruction manual (paper edition)
- 3D light
- Wire-alignment device
- Table bolt bag
- Workpiece clamp set

Paint color designation

Wire-cut EDM automation system
- Accumulates workpiece measurement data
- Compatible for external set-up using a coordinate measuring machine
- Enables automatic measurement when measuring on an EDM
- Creates processes offline
- Automatically exchanges workpieces using a robot

Network connection specifications (DNC, FTP Options)
- Data, such as NC programs, machining conditions and variables can be exchanged between a personal computer and EDM.
- The required options differ according to the models and purpose, and can be confirmed using the personal computer and EDM.
- One IP address must be prepared for each EDM within the user’s in-house network.

<table>
<thead>
<tr>
<th>Option name</th>
<th>MV1200R</th>
<th>MV1200S</th>
<th>MV2400R</th>
<th>MV2400S</th>
</tr>
</thead>
<tbody>
<tr>
<td>3X OPT-drive wire specifications</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2X OPT-drive wire specifications</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Long stroke taper unit (±15mm)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Long stroke taper unit (±25mm)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>±90, ±15, ±30, ±45, ±60 : Automatic wire threading</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Wire processing unit 1, 2, 3</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>20kg (44.1lb) wire spool unit</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Angle Master guide kit (SW)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Advanced manual control box (with arc display)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Power supply</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Free machining system</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Special material machining power supply</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Working tank</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Manual vertical front door</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Diaphragm fluid system</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>20L (0.7cu.ft.) specifications (Organo)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>10L (0.4cu.ft.) specifications (Organo)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2-piece filter system</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Communication</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>DNC</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>FTP</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Software</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Angle Master (SW)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Anti-virus protection</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Sleep mode</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Display</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3-color warning light</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Run timer</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Option box</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Others</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Instruction manual (paper edition)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3D light</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Wire-alignment device</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Table bolt bag</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Workpiece clamp set</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Features:
- Natural User Interface
- ADVANCE PLUS control

Additional options:
- Digital-AE (with axis display)
- Angle Master guide kit
- Wire-alignment device
- Workpiece clamp set

Options and retrofit specifications differ according to country and region, so please check with a Mitsubishi Electric representative.

Network connection specifications (DNC, FTP Options)
- Data can be exchanged using a personal computer and EDM.
- The required options differ according to the models and purpose, and can be confirmed using the personal computer and EDM.
- One IP address must be prepared for each EDM within the user’s in-house network.

<table>
<thead>
<tr>
<th>Network connection specifications (DNC, FTP Options)</th>
<th>MV1200R</th>
<th>MV1200S</th>
<th>MV2400R</th>
<th>MV2400S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator on the EDM side</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Operator on the personal computer side</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Data I/O operation</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>DNC connection</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>FTP connection</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Data transmission</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Network connection specifications (DNC, FTP Options)
- Data can be transmitted only using Basic (Standard)
- DNC connection
- FTP connection
- Data transmission

Options:
- Standard equipment
- Can be field retrofit
- Factory installation only
- Not available

*1 Necessary for mounting external signal output, 3-color warning light and run timer.
*2 Option box is needed.
*3 LAN cable should all straight wiring type with shielding connector, category 5 (100BASE-TX compliant), STP (four shielded twist pair).
*4 Necessary to mount the wire processing unit for wire electrodes above ø0.1(.004") and ø0.15(.006”). These sizes can be used when using the wire processing unit.

Wire-cut EDM automation system
- Accumulates workpiece measurement data
- Enables automatic measurement when measuring on an EDM

Paint color designation
- Antivirus protection
- Sleep mode
- 3-color warning light
- Run timer
- Option box

Wire processing unit
- Spent wire-electrode is cut at the discharge section

4-piece filter system
- 4-piece filter specifications reduce filter replacement frequency

Angle Master guide kit
- Max. 45˚ tapered machining possible using dedicated diamond guide

Wire-alignment device
- This device aligns the wire-electrode with the table

20kg(44.1lb) wire spool unit
- Long-time continuous machining is possible

3-color warning light
- Indicates machine operating status

LED light
- High brightness LED lighting

Workpiece clamp set
- Clamp jigs dedicated to holding workpieces
Power Supply, Control Specifications/Machine Installation

### Power Supply/Control Specifications

#### Power Supply Unit Specifications

- **Model**: WZM-1/2/5/10
- **Input**: 200/220VAC±10%
- **Output**: 0.5 to 0.7MPa
- **Power Capacity**: 1.0kVA (during normal use)
- **Harmonic Distortion**: 5% or less
- **Contact Voltage**: 2V or less
- **Grounding**: Class C grounding (grounding resistance: 10Ω)

#### Control Specifications

- **Diagram**: See Fig. 1
- **Control Panel**: Control panel with digital display, automatic machining path drawing, status recording
- **Function**:
  - Automatic taper degree calculation
  - Data variable operation
  - Status recording
  - Built-in 3D-CAM

#### Installation Conditions

1. **Power Supply**:
   - **Capacity**: 1.0kVA (during normal use)
   - **Harmonic Distortion**: 5% or less
   - **Contact Voltage**: 2V or less
   - **Grounding**: Class C grounding (grounding resistance: 10Ω)

2. **Environment**:
   - **Temperature**: -25 to 55°C (13°F to 131°F) (when power is not connected)
   - **Humidity**: Within 30% to 70% (when power is connected)
   - **Vibration**: 2µm or less
   - **Dust-free Location**: Recommended

#### Cordless Tools

- **Model**: WZM-1/2/5/10
- **Input**: 200/220VAC±10%
- **Output**: 0.5 to 0.7MPa
- **Power Capacity**: 1.0kVA (during normal use)
- **Harmonic Distortion**: 5% or less
- **Contact Voltage**: 2V or less
- **Grounding**: Class C grounding (grounding resistance: 10Ω)

#### Machine Installation

- **Floor**: The floor inclination (step) must be within 6/1000 (floor inclination 6mm per 1m)
- **Vibration**: 2µm or less
- **Dust-free Location**: Recommended

### Preparation of Installation Fixtures

#### Preparation of installation highlights

- **Fixtures**: Machining fixture, workpiece, etc.
- **Accuracy**: ±99999.999mm
- **Program No. Designation**: 5 types
- **CNC Closed Loop**: 32 types
- **Nesting Level**: 440 types
- **Input**: On screen
- **Display**: 15" color TFT

#### Installation Fixtures

- **Machine Body**: 20 (44)
- **Power Unit**: 1GB
- **Control Panel**: Through bolt
- **Machine Body**: 20 (44)
- **Power Unit**: 1GB
- **Control Panel**: Through bolt

### Precautions for Selecting Earth Leake Breaker

- **Earth Leake Breaker**: 30mA or less
- **Grounding Cable**: To the machine body
- **Grounding Resistance**: 10Ω
- **Grounding Method**: Class C grounding (isolated) is recommended (Wire-cut EDM dedicated grounding)

### Disposal

- **Waste Disposal**: Follow local and national laws and regulations.

### Harmonic Distortion

- **Wire-cut EDM**: 5% or less
- **Grounding Resistance**: 10Ω
- **Grounding Method**: Class C grounding (isolated) is recommended (Wire-cut EDM dedicated grounding)

### Wire Electrodes

- **Selecting Wire Electrodes**: Use the following wire electrode:
  - **Wires**: 0.032" or 0.020"
  - **Current**: 100A or 150A

### Recommended Sliding Surface Lubricants

- **Lubricants**: Terrace Oil 68
- **Applications**: Spindles, slides, gears, etc.

---

**Note**: Information may vary depending on model and region. Always consult the manufacturer's specifications for the most accurate data.