The FA-S Advance Series-Wire Eroding Systems
### Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA-S Advance: Your Future in Wire Erosion</td>
<td>4-5</td>
</tr>
<tr>
<td>Convincing in all aspects: The superior machine concept</td>
<td>6-7</td>
</tr>
<tr>
<td>Ensure Your Success: Highest Productivity and Precision with Maximum Process Safety</td>
<td>8-9</td>
</tr>
<tr>
<td>Ready to go in a few seconds: The user-friendly wire threading system</td>
<td>10-11</td>
</tr>
<tr>
<td>The new Advance CNC control: The new standard in wire erosion</td>
<td>12-13</td>
</tr>
<tr>
<td>Advance Control: Directly utilise your existing 3D CAD data</td>
<td>14-15</td>
</tr>
<tr>
<td>Power Master 3D: Dynamics and Precision with Utmost Process Safety</td>
<td>16-17</td>
</tr>
<tr>
<td>... it gets even better</td>
<td>18-19</td>
</tr>
<tr>
<td>A success story to be continued: The FA-S Advance Series</td>
<td>22-23</td>
</tr>
<tr>
<td>Think big: The FA40-S and FA50-S Advance</td>
<td>24-25</td>
</tr>
<tr>
<td>The FA-S Advance: Eroding PCD and CBN easily</td>
<td>26-27</td>
</tr>
<tr>
<td>Expand your possibilities: B axis and rotating spindle</td>
<td>28-29</td>
</tr>
<tr>
<td>Automatic operation for everything: Complete solutions for all cases</td>
<td>30-31</td>
</tr>
<tr>
<td>Technical data</td>
<td>32-33</td>
</tr>
<tr>
<td>Technical data, layout plans</td>
<td>34-39</td>
</tr>
</tbody>
</table>

### Additional EDM Information

You can find the latest information on benefits, support and technical questions on the Mitsubishi Electric EDM Internet pages (www.mitsubishi-edm.de).

In the products area of the homepage you will find links to documentation for Mitsubishi’s EDM product portfolio, as well as the most current version of this catalogue as a download.

All data is updated daily and is available in English and German.
FA-S Advance – Your Future in Wire Erosion

Your requirements for a modern wire eroding system are highly varied and your
customer’s demands will continue to rise. What does this mean for you?
The FA-S Advance is the solution to your manufacturing process.
You can realise compound tools, graphite electrodes, gear moulds,
profiles, plastic moldings, and single-part or serial production quickly and
reliably with the FA-S Advance. Since we are Mitsubishi Electric, the world-wide
leader in spark erosion, you can expect this from us. Our outstanding reliability
and operational safety in spark erosion remains unparalleled.

Ultra-precise processing with a parallelism and precision of < 2 µm
Material: 1.2379
Cutting height: 60 mm
Wire electrode: 0.20 mm brass
Surface quality: Ra 0.34 µm
Function utilised: Fine finishing generator

Conical processing
The Angle Master enables you to precisely machine
angles up to 45° with a stable eroding process.
Material: 1.2379
Work piece height: 50 mm
Wire electrode: 0.25 mm Master Cut Type T
Surface quality: Ra 0.63 µm
Function utilised: Angle Master

Precise processing of stepped workpieces
with a parallelism < 2 µm
Material: steel
Cutting height: 5-20-40-60 mm
Wire electrode: 0.20 mm brass
Surface quality: Ra 0.34 µm
Function utilised: SL-Control, Power Master

Innovative PCD processing that prevents
unplanned material erosion
Material: PCD grain size 10 µm
Cutting height: 3 mm
Wire electrode: 0.25 mm brass
Surface quality: Ra 1.85 µm

Manufacturer:
H. Schnurr GmbH
Convincing in all aspects: The superior machine concept

Designed for workpieces of up to 4 tonnes. There is little else we need to say regarding the rigidity and stability. Furthermore, there is the high-resolution digital controlled direct drive system (0.05 µm resolution) and a generously dimensioned ballscrew, both features guarantee continuous precision over an extremely long working life. The table for workpiece clamping, with its vertical sliding, door has been ergonomically designed with the operator in mind. Ease of maintenance is a core design feature demonstrated by the patented self-cleaning system of the working tank seal plate as well as the fully automatic central lubrication system. These are only a few examples of the intelligent design applied to Mitsubishi’s latest FA-Series machine. Needless to say quality is also important to us, and all FA machines are checked by laser measurement, roundness tests and extensive controls among other things. Because precision needs perfection.
Ensure Your Success - Highest Productivity and Precision with Maximum Process Safety

The FA-S Advance generates outstanding, precise results - not only under laboratory conditions, but also in day-to-day activities. After all, this is ultimately the decisive factor for you. Astonish your customers with exceptional results and reasonable prices made possible by the most progressive technology and low operating costs. Surface finishes of less than 0.15 µm Ra, cutting speeds up to 500 mm²/min, and parallelism from 5 µm on the diameter at a cutting height of 200 mm are achievable. The FA-S Advance continues to work reliably even in the most difficult flushing conditions such as conic angles up to 45°, offset or intermittent workpieces, thereby delivering precise and lasting results that are reproducible.
Ready to go in a few seconds: The user-friendly wire threading system

The Automatic Threading System (AT) threads the wire in only 10 seconds and combined with the standard wire chopper you will achieve ultimate speed, safety and comfort. Overall machine operation is made easy with all the operating and maintenance elements easily reached. And if you are off site? You can still have access to the machine functions via Telecontrol. This function allows you to control and monitor your eroding system through a data-link in real time. Another monitoring option is our intelligent Telecontact system. It allows you to transfer machine messages via SMS to a mobile phone. And for the highest level of help and support you can rely on remote diagnosis and online help through our Teleservice. With this system our customer service team can support you for all problems by means of direct online access to the machine.

Threaded in 10 seconds: the AT system
The combination of a new measuring sensor and a fast retract function gives you highest reliability and ultimate speed, even for smallest starting holes.

The wire drive mechanism has been equipped with larger draw rolls. This increases the operational safety particularly for thin wires. The standard existing wire chopper can be easily swivelled to the side when it is not needed.

Telecontrol: Remote control via PC. Telecontrol enables the remote monitoring and remote control of the machine from any site. This optimisation of turning processes is also possible.
The new Advance CNC control - the new standard in wire erosion

The new Advance control based on the Mitsubishi CNC M700 is captivating due to its user-friendliness and reliability. In spite of its complex range of functions, it can be operated intuitively via a control concept based on Windows XP. The logical menu structure and uncomplicated design allow you to quickly and reliably achieve your goal. You can run a 2D or 3D simulation of your program before or during the processing. The optimal generator setting creates the expert system E.S.P.E.R from your processing parameters. Evaluation, optimisation, and monitoring programs support you in your work. Operational control is performed via a sturdy 15" touch screen monitor, fixed function keys for commands most often used, as well as keyboard and mouse. The control can be linked to a network by using the standard Ethernet card. Data can also be exchanged independently from the network by way of two USB ports via USB flash drive.

Easy Screen
The workpiece set-up takes place as usual via screen views that are simple and logical in their succession. A "short version" offers the Easy Set Up function, which provides all essential set-up possibilities in one screen view. It could not be any easier to get started...

Ergonomic Design
In addition to the 15" touch screen, the machine is also equipped with fixed function keys as well as a PC keyboard and mouse. These features enable simple and precise operation even when the CAM functions are utilized.

USB
The FA-S Advance is generally equipped and delivered with an individualized USB flash drive. Any type of software update regarding the control of the machine can only be performed via this USB stick. This includes the backup of all user and machine-specific data before any software update. This enables your individual settings to be restored afterwards.

E-Manual / Alarm / Maintenance Support
The Advance Control comes with complete machine documentation, including numerous search and help functions. Directly from within the respective processing screen, you can call up the corresponding explanations from the machine's operating manual, maintenance guidelines for the corresponding machine components, and additional notes regarding alarm signals.
Advance Control: Directly utilise your existing 3D CAD data

The Advance Control also includes a 3D as well as 2D CAM system. 3D data in parasolid format and 2D data stored as DXF or IGES files can be directly imported and converted into NC programs. Your advantage: quickly and easily move from set-up to production.

3D CAD / 2D CAD

Loading the existing 3D data for your workpiece in parasolid format is easy as the Advance Control can process your original data in multiple formats. Using the integrated 3D CAM system, you can generate the eroding contours directly from your 3D parasolid model and then transmit them to the built-in 2D CAM program. The 2D CAM generates the NC program from these specifications, which can also still be adjusted. Needless to say, you can also import 2D CAD data in DXF or IGES format directly into the 2D CAM and then generate or further process the NC program.

3D PowerMaster

The Advance Control reads the 3D CAD data for information regarding height run and interruptions in the workpiece. When the Advance Control is processing in the 3D Power Master mode, it anticipates height differences and cavities in the workpiece and reacts accordingly. The possibility of the workpiece being damaged with marks and lines is avoided by this anticipatory eroding process, which at the same time, does not adversely affect the performance or cutting speed.
Power Master 3D – Dynamics and Precision with Utmost Process Safety

You receive fully automatic technology management with the Power Master 3D. It automatically adapts the generator power and flushing pressure to the processing conditions and optimises the cutting speed. By utilising the integrated 3D functionality, it anticipates the height differences and cavities in the workpiece and erodes accordingly. This minimises the wire break risk and shortens your processing time, all while increasing workpiece quality and contributing to a lasting cost reduction. There are numerous other automatic functions that make it easier for you to achieve perfect and reproducible processing results.

### Power Master
The proven Power Master enables you to process stepped workpieces without wire breaks or marks on the surface.

### Corner Master
Corner Master takes care of the clean shaping of sharp corners and small radii.

### Angle Master
The Angle Master compensates the movement of the EDM wire fulcrum within the Diamond wire guide to achieve highest precision, even with changing taper angles.

### 3D Power Master
By means of 3D data, which is read by the Advance Control for program generation, the 3D Power Master establishes the exact position of the height differences and cavities in the workpiece and optimises generator power and cutting speed shortly before it actually reaches the ‘problem area’.
... it gets even better

The wire eroding machines from Mitsubishi Electric have been equipped for a long time with high-speed, anti-electrolysis generators (HSS-AE). Adverse effects to the workpiece surface through electrolysis or electrochemical corrosion are reduced to a minimum.

No localised corrosion forms even during longer processing times. It minimises the washouts of the binding agent matrix for sintered materials, the thermally influenced border zone, and the microcrack formation. With more generator options, the FA-S Advance becomes the “machine for everything”: it can handle surface finishes finer than 0.15 µm Ra, cutting speeds up to 500 mm²/min., or parallelism in surprisingly small dimensions.

All from the FA-S Advance...

D-FS - Perfect Surface
The digitally controlled fine finishing generator (D-FS) is already well-known from Mitsubishi Electric’s high-end FA series and now it is an option with the FA-S Advance. It can achieve surface finishes that are less than 0.15 µm Ra.

V-Package
The “V-Package” includes a high performance generator in order to achieve cutting rates up to 500 mm²/min. The V-Package can be combined with the digital fine finishing generator.

D-AE - Disruptive process control
The V-Package includes a digitally controlled anti-electrolysis generator (D-AE), which contains all the functions described above in the HSS-AE generators. Furthermore, the D-AE offers a feature that is not found anywhere else in the world: the vertical position of the discharges on the workpiece can be controlled! In order to achieve the best parallelisms for taller workpieces, more discharges are concentrated in the lower region of the workpiece to compensate the wear on the wire during the eroding process.

The HSS-AE generator reduces oxidation in the cutting area for sensitive materials: ferrous materials and sintered materials such as tungsten carbide, but also for titanium, aluminium etc.
The Master team: The Mitsubishi FA-Series
A success story to be continued: The FA-S Advance Series

In the best sense of the word, the FA-S Advance is an universal machine, which can increase your competitive edge through low operating costs and short processing times. Cutting speeds up to 500 mm²/min., surface finishes of less than 0.15 µm Ra, wire diameters from 0.1 – 0.36 mm, best parallelism, and simple processing of even the most different materials leaves nothing to be desired. The numerous automatic functions, coupled with the solid, durable construction and the linear measuring system, ensure lasting results that are reproducible.

Your advantage: Praxis proven technology ensures your competitive advantage on a long term basis.

**Surface quality** < Ra 0.15 µm  
**Best parallelisms**  
**User-friendly**  
**Low-Maintenance**  
**Reduced Operating Costs**

---

### FA10-S Advance
- Travel paths: X/Y/Z mm: 350 x 250 x 220
- Overall dimensions of the machine WxDxH mm: 2373 x 2400 (2560 mm V-G) x 2600
- Max. workpiece dimensions WxDxH mm: 400 x 600 x 215

### FA20-S Advance
- Travel paths: X/Y/Z mm: 500 x 350 x 300
- Overall dimensions of the machine WxDxH mm: 2550 x 2800 (2900 mm V-G) x 2150
- Max. workpiece dimensions WxDxH mm: 1050 x 800 x 295

### FA30-S Advance
- Travel paths: X/Y/Z mm: 750 x 500 x 410 (420*)
- Overall dimensions of the machine WxDxH mm: 3495 (3732*) x 3143 x 2633 (2783*)
- Max. workpiece dimensions WxDxH mm: 1300 x 1000 x 405 (600*)

* = V+ version for workpieces up to 600mm height

### Possible wire diameters
- From ø 0.1 mm to ø 0.36 mm

---

The machine above shows the wire eroding system FA20-S+ Advance with the optional 450 mm submerged cutting function and V-Package.
Think big: The FA40-S and FA50-S Advance

The technical data of both large-scale Wire cut EDM strengthen the technological leadership of Mitsubishi Electric EDM in an impressive manner.

The maximum cutting rate is 500 mm²/min.

The built-in technology management reduces the processing time even with very large work pieces and bad cutting conditions (stepped and/or pre-milled work pieces, large nozzle distance) – with the highest process reliability. The FA40-S and FA50-S Advance are modern and economical Wire Cut EDM for tool- and mold makers as well as for parts production. The outstanding productivity secures provides a quick return on your investment.

**FA40-S Advance**
- Travel paths X/Y/Z mm: 1000 x 800 x 400
- Overall dimensions of the machine WxDxH mm: 4427 x 4150 x 2823
- Max. workpiece dimensions WxDxH mm: 1550 x 1300 x 395

**FA50-S Advance**
- Travel paths X/Y/Z mm: 1300 x 1000 x 400
- Overall dimensions of the machine WxDxH mm: 5375 x 5045 x 2823
- Max. workpiece dimensions WxDxH mm: 2000 x 1600 x 395

Possible wire diameters:
- From ø 0.2 mm
to ø 0.36 mm
The FA-S Advance: Eroding PCD and CBN easily

In addition to the workpiece form, “exotic” materials also place high demands on a wire eroding system. The FA-S Advance with the V-Package overcomes these challenges without difficulty. The V500 generator unit quickly cuts PCD and CBN while achieving exceptional surface qualities. Not to mention, it is all accomplished with the reliability Mitsubishi Electric is known for. The tool package option increases the possibilities of processing cutting tools in numerous automation levels up to and including fully automated serial production.

Rotation axis (B-axis) Hirschmann H150R.NCMI.XX
Completely servo-controlled B-axis.
Allows wire eroding on a rotating, guided workpiece.
Basic specifications:
Size (WxDxH): 350 x 215 x 180 mm
Axis centre above zero: 80 mm
Max. workpiece weight: 40 kg
Max. workpiece weight: 50 kg

Rotation axis (B-axis) Hofmann CNC 125.2
Completely servo-controlled B-axis.
Allows wire eroding on a rotating, guided workpiece.
Basic specifications:
Size (WxDxH): 380 x 220 x 190 mm
Axis centre above zero: 75 mm
Max. workpiece weight: 50 kg
Max. workpiece weight: 70 kg

Programming software ProfDia
The software ProfDia has been developed specially for the generation of measuring and processing programs for rotational tools. Calibration data from the machine (position measurement via sensing elements) is automatically taken into the processing programs.

Circular milling tool
for processing aluminum die casting with high Si proportion.

Tool Package with precise B-axis
Expand your possibilities: B axis and rotating spindle

Broaden your range of applications in wire erosion - you can effortlessly meet the demands of medical technology and micromechanics with the FA-S Advance. The use of a rotating spindle allows spark-erosive grinding/turning on a rotating workpiece. The combination of rotation and indexing function converts your FA-S Advance wire eroding system to a “highly precise spark-erosive grinding machine”. A fully servo-controlled rotation axis allows wire eroding on a rotating, guided workpiece. Discover new manufacturing possibilities and win over new customers.

Rotation axis (B axis) Hirschmann H80RNCMI.6
This fully servo-controlled B axis allows wire eroding on a rotating, guided workpiece.
Basic specification:
Dimension (WxDxH): approx. 230 x 220 x 130 mm
Axis centre above zero: 65 mm
Indexing accuracy: +/- 5°
Dead weight: approx. 35 kg
Max. workpiece weight: 25 kg

Rotation axis (B axis) Jauch Schneider R-10120D--060
This fully servo-controlled B axis also allows wire eroding on a rotating, guided workpiece.
Basic specification:
Dimension (WxDxH): 346 x 188 x 150 mm
Axis centre above zero: 60 mm
Indexing accuracy: +/- 5°
Dead weight: approx. 30 kg
Max. workpiece weight: 30 kg
Automatic operation for everything: Complete solutions for all cases

The market offers lots of machines, robots and components in order to increase the degree of automation, however, there is a problem. The components are not optimised with each other and the integration eats up un-planned and unexpected resources and budgets.

The solution is simple. One-stop for everything. Mitsubishi Electric can offer you wire eroding systems, die sinking machines, robots and handling systems. All these systems are perfectly matched to each other in order to achieve a perfect mesh. Your advantage is you can apply proven manufacturing cell technology, safeguarding your competitive advantage.

The cell software, *MasterCell*, controls numerous wire eroding machines in connection with flexible automated solutions from Mitsubishi Electric and optimizes your serial production processes.

Easy programming and highest precision guarantee highest flexibility. Also for continuous production of parts, this is the ultimate solution.

*Mitsubishi Robot RV-12SL*

- Handling weight: 12 kg
- Coverage/radius: 1385 mm
- Repeatable accuracy: ± 0.05 mm

Maximum productivity and accuracy around the clock. Manufacturing Cell consisting of Mitsubishi wire eroding system FA20-S Advance and Erowa Robot Compact. Transfer weight: 30 kg

The figure shows the wire eroding system FA20-S Advance, automated with the *Mitsubishi Robot RV-12SL*.
### Technical Data

#### Machine

<table>
<thead>
<tr>
<th>Model</th>
<th>FA10-S Advance</th>
<th>FA10-S Advance</th>
<th>FA20-S Advance</th>
<th>FA20-S Advance</th>
<th>FA30-S Advance</th>
<th>FA30-S Advance+</th>
<th>FA40-S Advance</th>
<th>FA50-S Advance</th>
<th>FA60-S Advance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel path (X/Y/Z) mm</td>
<td>350 x 250 x 220</td>
<td>350 x 250 x 220</td>
<td>500 x 350 x 300</td>
<td>500 x 350 x 300</td>
<td>750 x 500 x 410</td>
<td>750 x 500 x 420</td>
<td>1000 x 800 x 400</td>
<td>1300 x 1000 x 400</td>
<td></td>
</tr>
<tr>
<td>Travel path (U/V) mm</td>
<td>± 32 x ±32</td>
<td>± 32 x ±32</td>
<td>± 75 x ±75</td>
<td>± 75 x ±75</td>
<td>± 100 x ±100</td>
<td>± 100 x ±100</td>
<td>± 75 x ±75</td>
<td>± 75 x ±75</td>
<td></td>
</tr>
<tr>
<td>Conic angle (for workpiece height) °</td>
<td>15 (100 mm)</td>
<td>15 (100 mm)</td>
<td>15 (260 mm)</td>
<td>15 (260 mm)</td>
<td>15 (360 mm)</td>
<td>15 (360 mm)</td>
<td>15 (260 mm)</td>
<td>15 (260 mm)</td>
<td></td>
</tr>
<tr>
<td>Max. workpiece dimensions (W x D x H) mm</td>
<td>800 x 600 x 215</td>
<td>800 x 600 x 215</td>
<td>1050 x 800 x 295</td>
<td>1050 x 800 x 295</td>
<td>1300 x 1000 x 405</td>
<td>1300 x 1000 x 600</td>
<td>1550 x 1300 x 395</td>
<td>2000 x 1600 x 395</td>
<td></td>
</tr>
<tr>
<td>Max. workpiece weight kg</td>
<td>500</td>
<td>500</td>
<td>1500</td>
<td>1500</td>
<td>3000</td>
<td>3000</td>
<td>4000</td>
<td>4000</td>
<td></td>
</tr>
<tr>
<td>Table dimensions (W x D) mm</td>
<td>590 x 514</td>
<td>590 x 514</td>
<td>780 x 630</td>
<td>780 x 630</td>
<td>1100 x 875</td>
<td>1100 x 875</td>
<td>1360 x 1175</td>
<td>1660 x 1375</td>
<td></td>
</tr>
<tr>
<td>Possible wire diameters mm</td>
<td>0,1 – 0,3</td>
<td>0,1 – 0,36</td>
<td>0,1 – 0,36</td>
<td>0,1 – 0,36</td>
<td>0,1 – 0,36</td>
<td>0,1 – 0,36</td>
<td>0,2 – 0,36</td>
<td>0,2 – 0,36</td>
<td></td>
</tr>
<tr>
<td>Wire spool reception kg</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Wire chopper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. advance (X/Y) mm/min</td>
<td>1300</td>
<td>1300</td>
<td>1300</td>
<td>1300</td>
<td>1300</td>
<td>1300</td>
<td>1300</td>
<td>1300</td>
<td></td>
</tr>
<tr>
<td>Overall workpiece dimensions (W x D x H) mm</td>
<td>1897 x 2075 x 2030</td>
<td>1897 x 2075 x 2030</td>
<td>2420 x 2710 x 2150</td>
<td>2420 x 2710 x 2150</td>
<td>3495 x 3143 x 2633</td>
<td>3732 x 3143 x 2783</td>
<td>4427 x 4150 x 2823</td>
<td>5375 x 5045 x 2823</td>
<td></td>
</tr>
<tr>
<td>Machine weight kg</td>
<td>2000</td>
<td>2000</td>
<td>3500</td>
<td>3500</td>
<td>4800</td>
<td>5700</td>
<td>7500</td>
<td>9000</td>
<td></td>
</tr>
<tr>
<td>Tank capacity l</td>
<td>440</td>
<td>440</td>
<td>740</td>
<td>740</td>
<td>1200</td>
<td>1700</td>
<td>2425</td>
<td>3200</td>
<td></td>
</tr>
<tr>
<td>Filter fineness µm</td>
<td>1-2</td>
<td>1-2</td>
<td>1-2</td>
<td>1-2</td>
<td>1-2</td>
<td>1-2</td>
<td>1-2</td>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>Filter elements</td>
<td>22</td>
<td>2</td>
<td>24</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Temperature control</td>
<td>Dielectric cooler</td>
<td>Dielectric cooler</td>
<td>Dielectric cooler</td>
<td>Dielectric cooler</td>
<td>Dielectric cooler</td>
<td>Dielectric cooler</td>
<td>Dielectric cooler</td>
<td>Dielectric cooler</td>
<td></td>
</tr>
<tr>
<td>Weight unfilled kg</td>
<td>280</td>
<td>280</td>
<td>350</td>
<td>350</td>
<td>540</td>
<td>580</td>
<td>680</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

#### Generator / Control

<table>
<thead>
<tr>
<th>Model</th>
<th>FA10-S Advance</th>
<th>FA10-S Advance</th>
<th>FA20-S Advance</th>
<th>FA20-S Advance</th>
<th>FA30-S Advance</th>
<th>FA30-S Advance+</th>
<th>FA40-S Advance</th>
<th>FA50-S Advance</th>
<th>FA60-S Advance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator / Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client side</td>
<td>transistor controlled pulse generator</td>
<td>transistor controlled pulse generator</td>
<td>transistor controlled pulse generator</td>
<td>transistor controlled pulse generator</td>
<td>transistor controlled pulse generator</td>
<td>transistor controlled pulse generator</td>
<td>transistor controlled pulse generator</td>
<td>transistor controlled pulse generator</td>
<td></td>
</tr>
<tr>
<td>Control system</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td></td>
</tr>
<tr>
<td>Min. instruction step µm X, Y, Z, U, V</td>
<td>0.1 µm</td>
<td>0.1 µm</td>
<td>0.1 µm</td>
<td>0.1 µm</td>
<td>0.1 µm</td>
<td>0.1 µm</td>
<td>0.1 µm</td>
<td>0.1 µm</td>
<td></td>
</tr>
<tr>
<td>Min. axis resolution µm</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Max. working current A</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Dimensions (W x D X H) mm</td>
<td>550 x 600 x 1650</td>
<td>650 x 630 x 1870</td>
<td>550 x 600 x 1650</td>
<td>650 x 630 x 1870</td>
<td>650 x 630 x 1870</td>
<td>650 x 630 x 1870</td>
<td>650 x 630 x 1870</td>
<td>650 x 630 x 1870</td>
<td></td>
</tr>
<tr>
<td>Weight kg</td>
<td>240</td>
<td>300</td>
<td>240</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Entry system</td>
<td>Keyboard, USB-Stick, Ethernet</td>
<td>Keyboard, USB-Stick, Ethernet</td>
<td>Keyboard, USB-Stick, Ethernet</td>
<td>Keyboard, USB-Stick, Ethernet</td>
<td>Keyboard, USB-Stick, Ethernet</td>
<td>Keyboard, USB-Stick, Ethernet</td>
<td>Keyboard, USB-Stick, Ethernet</td>
<td>Keyboard, USB-Stick, Ethernet</td>
<td></td>
</tr>
<tr>
<td>TFT Colour monitor</td>
<td>15&quot; Touchscreen</td>
<td>15&quot; Touchscreen</td>
<td>15&quot; Touchscreen</td>
<td>15&quot; Touchscreen</td>
<td>15&quot; Touchscreen</td>
<td>15&quot; Touchscreen</td>
<td>15&quot; Touchscreen</td>
<td>15&quot; Touchscreen</td>
<td></td>
</tr>
<tr>
<td>Control system</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td>CNC, closed loop</td>
<td></td>
</tr>
</tbody>
</table>

#### Equipment

<table>
<thead>
<tr>
<th>Model</th>
<th>FA10-S Advance</th>
<th>FA10-S Advance</th>
<th>FA20-S Advance</th>
<th>FA20-S Advance</th>
<th>FA30-S Advance</th>
<th>FA30-S Advance+</th>
<th>FA40-S Advance</th>
<th>FA50-S Advance</th>
<th>FA60-S Advance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wire station 20kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wire station 50kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**FA10-S Advance**

- Overall power consumption (KVA): 13.5
- Overall weight of the installation: 2540 kg
- Minimum door opening dimensions for insertion B x H mm: 1600 x 2030

**FA20-S Advance**

- Overall power consumption (KVA): 13.5
- Overall weight of the installation: 4110 kg
- Minimum door opening dimensions for insertion B x H mm: 1950 x 2200
### Model FA30-S Advance

- **Overall power consumption [KVA]**: 15.0
- **Overall weight of the installation kg**: 5640
- **Minimum door opening dimensions for insertion B x H mm**: 2850 x 2700

### Model FA30-S Advance+

- **Overall power consumption [KVA]**: 15.0
- **Overall weight of the installation kg**: 6600
- **Minimum door opening dimensions for insertion B x H mm**: 2850 x 2800

---

<table>
<thead>
<tr>
<th>Model</th>
<th>FA30-S Advance</th>
<th>FA30-S Advance+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall power consumption [KVA]</td>
<td>15.0</td>
<td>15.0</td>
</tr>
<tr>
<td>Overall weight of the installation kg</td>
<td>5640</td>
<td>6600</td>
</tr>
<tr>
<td>Minimum door opening dimensions for insertion B x H mm</td>
<td>2850 x 2700</td>
<td>2850 x 2800</td>
</tr>
</tbody>
</table>

All indications in mm. The dimensions may vary according to equipment.
**Model** | **Overall power consumption [KVA]** | **Overall weight of the installation [kg]** | **Minimum door opening dimensions for insertion B x H [mm]**
---|---|---|---
FA40-S Advance | 23.0 | 8.500 | 2415 x 2830
FA50-S Advance | 23.0 | 10.320 | 2900 x 2830
A sparkling partnership – Mitsubishi Electric supplies Eroding systems to the BMW Sauber F1 Team.