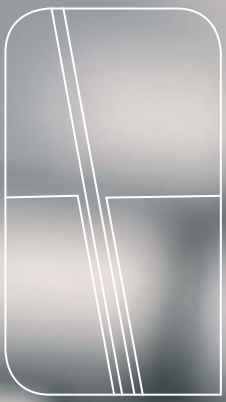
Product Range

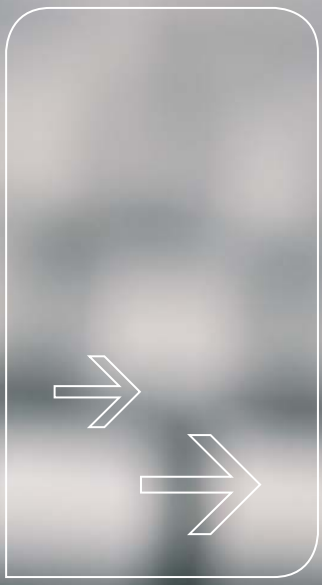
+GF+ AgieCharmilles

Wire-cutting EDM uses a metallic wire (electrode) to cut a programmed contour in a workpiece. The wire can be inclined, thus making it possible to make parts with taper or with different profiles at the top and bottom. The wire is usually made of brass or stratified copper and between 0.02 and 0.3 mm has a diameter.

The EDM wire technology opens up new opportunities for ultra-precise machining of miniaturized components in various fields of technology, including aerospace, defence, medical instruments, semiconductor that may require wire diameters down to 0.02 mm.

But the EDM wire is among the most promising machining processes to satisfy demanding high-speed machining with respect of surface integrity, degree of surface finish down to Ra 0.04 µm, high level of flexibility and low running cost : it is the ideal solution for an extremely large range of applications, workshops and future-oriented companies.





Wire-cutting EDM

CUT 20

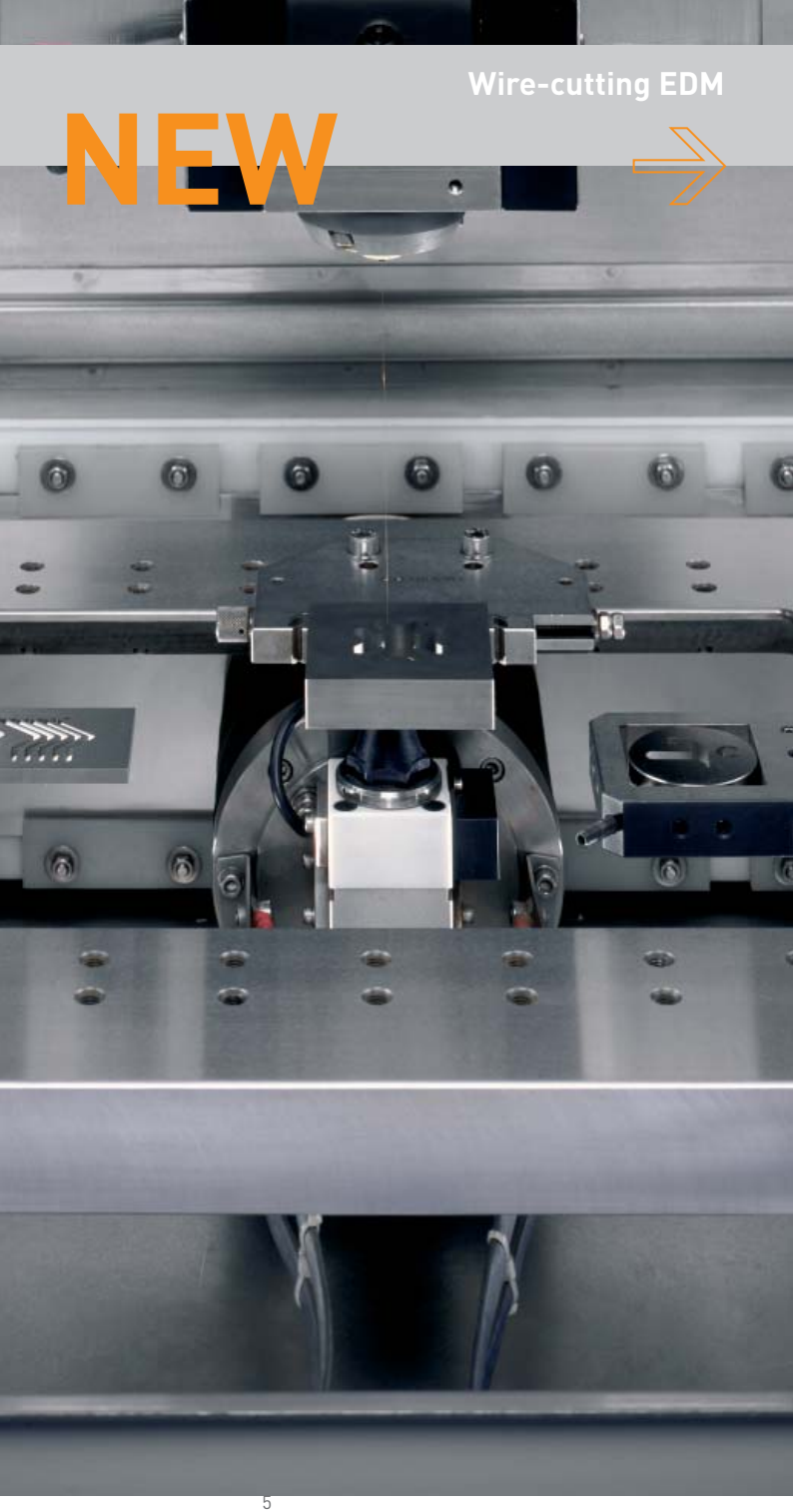
The solution for standard stamping and general engineering.

- Simple-to-use graphics user interface
- Plug and play machine concept
- Low running cost
- Speed-oriented technologies
- Outstanding performances of the generator

		CUT 20
Travel X, Y, Z	**mm**	350 x 250 x 250
Travel U, V	**mm**	± 45
Max. part dimensions*	**mm**	900 x 680 x 250
Max. part weight	**kg**	400
Max. taper angle/height	**°/mm**	25/80
Wire diameters	**mm**	0.15 – 0.30
Wire spool	**kg**	8
Min. surface roughness (Ra)	**µm**	0.25

* Length x depth x height

NEW



Proven performance at the lowest running cost.

- Quadrax, a unique capacity for taper machining
- The fixed table combines robustness and accuracy
- Proven Integrated Collision Protection (ICP)
- Low running cost
- Easy-to-use and efficient Millennium numerical control

		FI 240 SLP	FI 440 SLP
Travel X, Y, Z	**mm**	350 x 220 x 220	550 x 350 x 400
Travel U, V	**mm**	350 x 220	550 x 350
Max. part dimensions*	**mm**	1000 x 550 x 220	1200 x 700 x 400
Max. part weight	**kg**	750	1500
Max. taper angle/height	**°/mm**	30/220	30/400
		45/220**	45/400**
Wire diameters	**mm**	0.1 – 0.3	0.1 – 0.3
Wire spool	**kg**	25	25
Min. surface roughness (Ra)	**µm**	0.22	0.22

* Length x depth x height
** Option

The machine for economic wire cutting.

- High accuracy on stepped workpiece
- High-quality surface finish
- High-level job management
- Easy technology selection
  according to accuracy or speed criteria
- Low running cost

AC Classic V2	AC Classic V3
350 x 250 x 256	500 x 350 x 426
± 70	± 70
750 x 550 x 250	1050 x 650 x 420
200 (450)	400 (800)
30/100	30/100
0.15 – 0.33 0.07 – 0.10**	0.15 – 0.33 0.07 – 0.10**
25	25
0.20 < 0.10**	0.20 < 0.10**

Productivity first.

- Cutting speed up to 500 mm^2/min at low cost
- Fast improvement of the surface quality (3 cuts)
- Intelligent automatic wire threading
- The automation design is built into the machine
- Proven Integrated Collision Protection (ICP)

		FI 240 CC	FI 440 CC
Travel X, Y, Z	**mm**	350 x 220 x 220	550 x 350 x 400
Travel U, V	**mm**	350 x 220	550 x 350
Max. part dimensions*	**mm**	1000 x 550 x 220	1200 x 700 x 400
Max. part weight	**kg**	750	1500
Max. taper angle/height	**°/mm**	30/220	30/400
		45/220**	45/400**
Wire diameters	**mm**	0.1 – 0.33	0.1 – 0.33
Wire spool	**kg**	25	25
Min. surface roughness (Ra)	**µm**	0.20	0.20

* Length x depth x height
** Option

The series for precise wire-cutting EDM.

- High-quality surface finish
- High accuracy on stepped workpiece
- High-level job management CNC
- Easy technology selection according to machining objectives
- Wires down to 0.07 mm diameter

FI 640 CC	AC Progress V2	AC Progress V3	AC Progress V4
800 x 550 x 510	350 x 250 x 256	500 x 350 x 426	800 x 550 x 525
800 x 550	± 70	± 70	800 x 550
1300 x 1000 x 510	750 x 550 x 250	1050 x 650 x 420	1300 x 1000 x 510
3000	200 (450)	400 (800)	3000
30/510 45/510**	30/100	30/100	30/500
0.1 – 0.33	0.15 – 0.33 0.07 – 0.10**	0.15 – 0.33 0.07 – 0.10**	0.15 – 0.33 0.07 – 0.10**
25	25	25	25
0.20	0.20 < 0.10**	0.20 < 0.10**	0.20 < 0.10**

High performance in automation.

- Automation for high productivity
- Full 3D automatic setup
- Job management dedicated for automation
- Designed for high level of running time
- High cutting speed on complex shapes

		AC Challenge V2	AC Challenge V3
Travel X, Y, Z	mm	350 x 250 x 256	500 x 350 x 256
Travel U, V	mm	± 70	± 70
Max. part dimensions*	mm	750 x 550 x 250	1050 x 650 x 250
Max. part weight (flushing mode)	kg	200 (450)	400 (800)
Max. taper angle/height	°/mm	30/100	30/100
Wire diameters	mm	0.15 – 0.33	0.15 – 0.33
		0.07 – 0.10**	0.07 – 0.10**
Wire spool	kg	25	25
Min. surface roughness (Ra)	µm	0.20	0.20
		< 0.10**	< 0.10**

* Length x depth x height
** Option

The series for ultra-precise machining.

- Wire capabilities down to thin wires
- Perfection on surface quality
- Mechanical design dedicated for ultra-precision
- Ultra-precision for the most complex shapes
- Full 3D automatic setup

AC Vertex 2/2F	AC Vertex 3/3F
350 x 250 x 256	500 x 350 x 256
± 70	± 70
750 x 550 x 250	1050 x 650 x 250
200 (450)	400 (800)
30/100	30/100
2: 0.07 – 0.33	3: 0.07 – 0.33
2F: 0.03 – 0.33	3F: 0.03 – 0.33
25	25
0.05	0.05

Delivering the Difference.

- Ultra-precision for the most complex shapes
- Unique mechanical design
  at the service of the ultra-precision
- Exclusive Twin Wire : 2 wires for double productivity
- Digital spark control for perfection on surface quality
- Automation for top-end applications

		FI 2050 TW	FI 6050 TW
Travel X, Y, Z	**mm**	320 x 220 x 160	630 x 400 x 160
Travel U, V	**mm**	± 48	± 48
Max. part dimensions*	**mm**	1000 x 490 x 260	1260 x 610 x 360
Max. part weight	**kg**	500	800
Max. taper angle/height	**°/mm**	± 30/65	± 30/65
Wire diameters	**mm**	0.05 – 0.33	0.05 – 0.33
Wire spool	**kg**	2 x 8 25**	2 x 8 25**
Min. surface roughness (Ra)	**µm**	0.05	0.05

* Length x depth x height
** Option

The model for top results.

- Dedicated to micro-application
- Unique mechanical design for micro-application field
- Perfection on surface quality
- Automatic threading for micro-wires on very small holes
- Exclusive " Micro Twin Wire " for top-end applications

AC Vertex 1/1F
220 x 160 x 100
± 40
300 x 200 x 80
35
3/80
1: 0.10 – 0.20 1F: 0.02 – 0.20
2 x 8
0.05

EDM represents a key technology for production processes. Nowadays die-sinking EDM provides a rapid response to the new orders involving widely differing and extreme requirements. Through this technology it is possible to machine either plain cavities as well as highly complex and high-precision dies on conventional materials, such as standard steel, as well as in most modern alloys.

Among the different production facilities, EDM allows achieving accuracies in the order of a micron as well as ensuring high standards of quality and surface integrity which are hard to beat with other machining methods. Thanks to these unique characteristics, die-sinking EDM easily eliminates the traditional constraints in a very wide range of applications, such as, for example, stress on the machined material or the risk of burrs associated with the chip removing process of material.

The GF AgieCharmilles EDM die-sinking machines, with their wide range of technical solutions and specific functions, are capable to ensure very long production autonomy.

In terms of performance and cost-effectiveness, these products offer an extraordinary solution to increase the level of productivity and flexibility in companies of today and tomorrow.

Die-sinking EDM

FORM 20
FORM 30

Extremely user friendly and cost effective equipment with numerous functionalities.

- Quick and intuitive data input
- Efficient programming resulting in short set-up times
- 3D graphics simulation
- Very low energy consumption
- Functionalities to handle a wide range of applications

		FORM 20	FORM 30
Travel X, Y, Z	**mm**	350 x 250 x 250	600 x 400 x 400
Max. part dimensions*	**mm**	800 x 500 x 265	1000 x 700 x 400
Max. part weight	**kg**	200	1000
Max. electrode weight	**kg**	50	100
Distance table/chuck	**mm**	230 – 480	250 – 650
Electrode changer	**Pos.**	4	6
Current	**A**	72	104
Min. surface roughness (Ra)	**µm**	0.2	0.2

* Length x depth x height

NEW

Profitable and advanced technology.

- Versatile, reliable and easy to use
- Equipped with an efficient and well-proven generator
- A mechanical design that ensures static and dynamic rigidity
- Top performance in a wide variety of applications
- Imbedded experience at the service of the operator

		FO 23 P	FO 53 P
Travel X, Y, Z	mm	350 x 250 x 250	600 x 400 x 400
Max. part dimensions*	mm	740 x 450 x 270	1150 x 750 x 400
Max. part weight	kg	200	800
Max. electrode weight	kg	50	100
Distance table/chuck	mm	185 – 435	187 – 587
Electrode changer	Pos.	4	6
Current (rotating)	A	64 (64)	128 (64)
Min. surface roughness (Ra)	µm	0.1	0.1

* Length x depth x height

The machine FO 35 P for an economical production.

- Imbedded expertise providing an automatic machining optimization
- Numerical control well proven allowing delicat applications
- Outstanding performance
- High versatility allowing multiple applications
- Robustness of the mechanical concept ensuring a repetitively of production

FO 35 P
350 x 250 x 300
780 x 530 x 300
500
50
150 – 450
32
64 (64)
0.1

The EDM die-sinking machine for fast set-up, simple operation and reliable EDM.

- Simple data input
- APG generator with Hyperspark technologies
- Small floor space requirement
- Minimal power consumption
- Variant for small drill holes
  > 0.1 mm electrode diameter, FD (Fine Drill)

		AT Spirit 2	AT Spirit 3
Travel X, Y, Z	**mm**	300 x 250 x 250	550 x 400 x 350
Max. part dimensions*	**mm**	630 x 400 x 185	960 x 650 x 255
Max. part weight	**kg**	200	1000
Max. electrode weight	**kg**	25	80
Distance table/chuck	**mm**	190 – 440	165 – 515
Electrode changer	**Pos.**	4	10
Current (rotating)	**A**	72 (72)	104 (72)
Min. surface roughness (Ra)	**µm**	0.2	0.2

* Length x depth x height

AT Spirit 4
700 x 500 x 400
1100 x 750 x 370
2000
120
215 – 615
56
104 (72)
0.2

Fast machining technology for exceptional surface quality.

- Clever acceleration control for extreme quality machining
- Incomparable homogeneous machined surfaces
- A wide choice of changers and functionalities provides record productivity
- Structured user interface to optimise set-up times
- Unique versatility thanks to the diversity of mastered applications

		FO 350 S	FO 550 S
Travel X, Y, Z	**mm**	350 x 250 x 300	600 x 400 x 450
Max. part dimensions*	**mm**	780 x 530 x 300	1200 x 850 x 400
Max. part weight	**kg**	500	1600
Max. electrode weight	**kg**	50	100
Distance table/chuck	**mm**	150 – 450	150 – 600
Electrode changer (combi)	**Pos.**	80 (160)	80 (160)
Current (rotating)	**A**	128 (128)	128 (128)
Min. surface roughness (Ra)	**µm**	0.1	0.1

* Length x depth x height

Enhanced finishing technology for die-sinking EDM.

- Visual aspects of final products weigh more and more on the quality scale
- A technology mix for astonishing results
- Performances
- DPC – A tailor made interface
- Imbedded experience at the service of the operator

FO 350 γ	FO 550 γ
350 x 250 x 300	600 x 400 x 450
780 x 530 x 300	1200 x 850 x 400
500	1600
50	100
150 – 450	150 – 600
80 (160)	80 (160)
128 (128)	128 (128)
0.1	0.1

The EDM die-sinking machine designed for automation with outstanding functions and technologies.

- High removal rates
- Flexible job planning
- Easy machining modules for complex applications
- Integrated Job Management System
- Open for external handling systems

		AT Hyperspark 2 HS	AT Hyperspark 3 HS
Travel X, Y, Z	mm	350 x 250 x 350	500 x 350 x 500
Max. part dimensions*	mm	650 x 580 x 250 or 820 x 420 x 250	880 x 680 x 350 or 1070 x 530 x 350
Max. part weight	kg	400	800
Max. electrode weight	kg	100	100
Distance table/chuck	mm	170 – 520	200 – 700
Electrode changer	Pos.	56	56
Current (rotating)	A	104 (72)	104 (72)
Min. surface roughness (Ra)	µm	0.1	0.1

* Length x depth x height

A collection of solutions to reach irreproachable geometric quality.

- Mastering all aspects of the mm³ world
- Integrated thermo-stabilisation for continuous mechanical stability
- Powerful generator adapted to the most fragile electrodes
- Running time solutions conceived for the smallest parts
- A structured user interface to optimise set-up times

FO 350 µ
350 x 250 x 300
780 x 530 x 300
500
50
150 – 450
80 (160)
128 (128)
0.1

Hyperspark Exact

The EDM die-sinking machine AT Hyperspark HS with exceptional functions and performances.

- Highest positioning accuracy
- Fine thermal stabilisation
- Best surface quality and homogeneity
- Wide range of technologies
- Powerful control unit with intuitive dialogue

		AT Hyperspark Exact 2 HS
Travel X, Y, Z	mm	350 x 250 x 350
Max. part dimensions*	mm	650 x 580 x 250 or 820 x 420 x 250
Max. part weight	kg	400
Max. electrode weight	kg	100
Distance table/chuck	mm	170 – 520
Electrode changer	Pos.	56
Current (rotating)	A	104 (72)
Min. surface roughness (Ra)	µm	0.1

* Length x depth x height

AT Hyperspark Exact 3 HS
500 x 350 x 500
880 x 680 x 350 or 1070 x 530 x 350
800
100
200 – 700
56
104 (72)
0.1

FORM 2000
FORM 3000

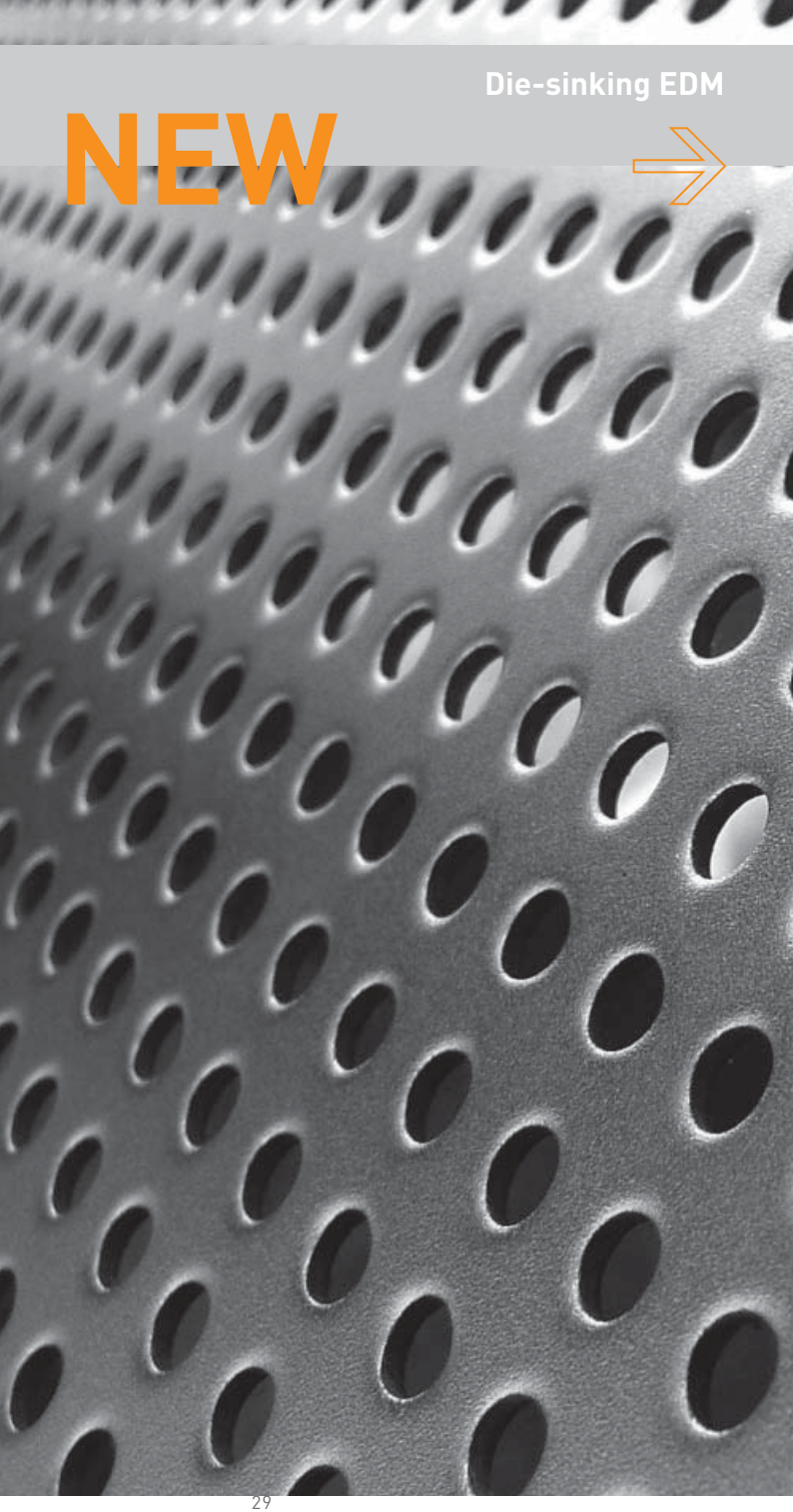
Unique in precision and integrated automation.

- Designed for highest accuracy
- Unique solution for integrated automation
- Outstanding generator for reliable productivity and repeatable machining results
- Maximum flexibility with 2 different user interfaces
- Finest surface finish and minimum radii

		FORM 2000	FORM 3000
Travel X, Y, Z	**mm**	350 x 250 x 350	600 x 400 x 500
Max. part dimensions*	**mm**	820 x 580 x 250	1200 x 800 x 350
Max. part weight	**kg**	800	2000
Max. electrode weight	**kg**	100	100
Distance table/chuck	**mm**	170 – 520	200 – 700
Electrode changer (combi)	**Pos.**	140 (210)	140 (210)
Pallet changer	**Pos.**	4 – 12	4 – 12
Current (rotating)	**A**	120 (120)	120 (120)
Min. surface roughness (Ra)	**µm**	0.05	0.05

* Length x depth x height

NEW



Quick, simple, precise : drilling starting holes with GF AgieCharmilles.

- Numerical controlled X, Y and Z axis
- Integrated rotation spindle
- Electrode diameters from 0.15 up to 3 mm
- Technologies for a wide range of materials
- Low floor space requirement

		DRILL 11
Travel X, Y, Z	mm	300 x 200 x 300
Work table*	mm	400 x 300
Max. part weight	kg	300
Max. machining depth	mm	200
Electrode guide travel	mm	100
Electrode diameters	mm	0.3 – 3
		0.15***
Generator	A	30
Machine dimensions**	mm	900 x 1340 x 1940

* Length x width
** Width x depth x height
*** Option

Mass production of smallest holes.

- Reliable 24-hour operation
- Automatic workpiece clamping
- Handling devices provided according to feasibility study

		AT 4 HP
Number of units		4
Travel X, Y, Z per unit	mm	10 x 10 x 50
Travel path W-axis	mm	120
CNC controlled axes		Up to 15
Travel path swivel		A-axis from 0 to 15°
Rotation axes		4 x C-axis
EDM axis		Z
Superposed orbital deflection		X, Y
Automatic wear compensation		Standard
Process adjustment		Automatic
4 servo controlled generators		Standard

EDM

Electric Discharge Machines

EDM can be used to machine conductive materials of any hardness (for example steel or titanium) to an accuracy of up to one thousandth of a millimetre with no mechanical action. By virtue of these properties, EDM is one of the key technologies in mold and tool making. There are two distinct processes – wire-cutting EDM and die-sinking EDM.

Milling

High-Speed and High-Performance Milling Centers

In terms of cutting speed, HSM centers are 10 times faster than conventional milling machines. Greater accuracy and a better surface finish are also achieved. This means that even tempered materials can be machined to a condition where they are largely ready to use. One essential advantage of HSM is that with systematic integration, the process chain can be significantly shortened. HSM has developed alongside EDM into one of the key technologies in mold and tool making.

Spindle

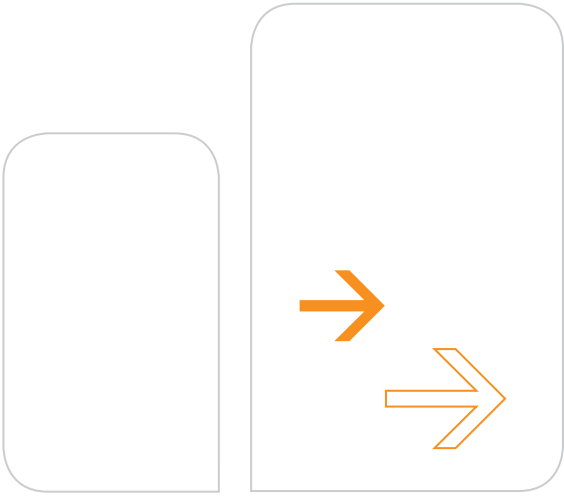
HSM Spindle Technology
Development, production and sale of the motor spindles that form the core components of modern HSM centers. The spindles rotate at speeds between 10000 and 60000 rpm.

Automation

Tooling, Automation, Software
Tooling for fixing workpieces and tools; automation systems and system software for configuring machine tools and recording and exchanging data with the various system components.

Service

Services and Consumables
Service, maintenance, spare parts and consumables for EDM, milling and HSM systems as well as for other machine tools; consumables include filters, wire, graphite, copper electrodes and special resin.



We commit to a promise. That promise is "Achieve more". It's a commitment to create the right conditions for our customers to obtain competitive results. When our customers win, we win.

Achieve more

259.804.552

Contact

www.gfac.com

+GF+ AgieCharmilles

Achieve more...