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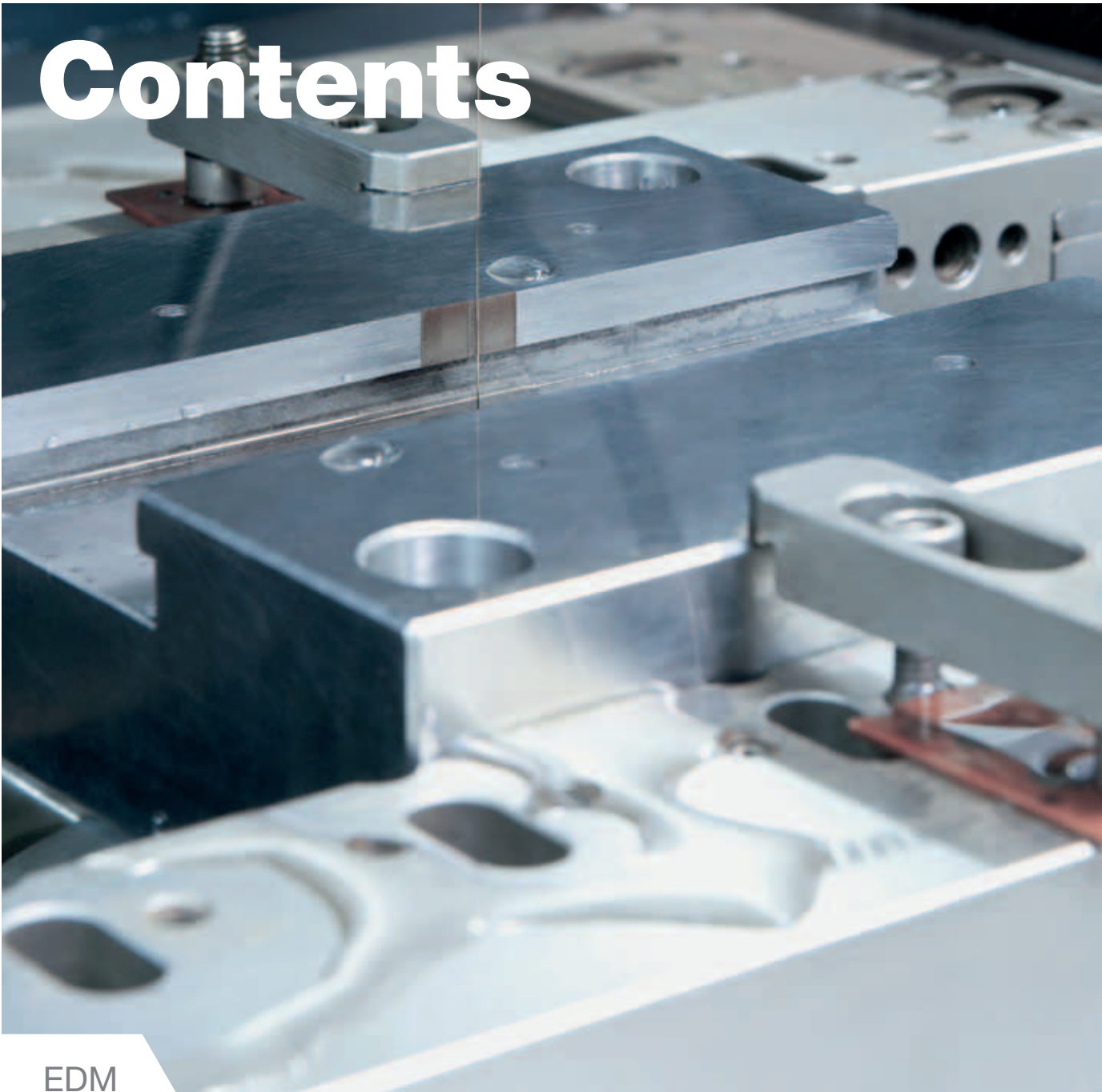
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HANS-JÜRGEN PELZERS

# Editorial



## Kaizen ...

### A philosophy that benefits the customer

“Please hold the line, your call is important to us.” We’re all familiar with this call centre mantra. Being kept waiting by friends can be annoying. But if this happens at work, it can sometimes be utterly exasperating. If, for instance, the customer is waiting for an urgent job, the machine has ground to a halt and the service team fails to arrive on time, things can get really tight. Treating service not as a tiresome chore but as a front-line, top-priority activity is a challenge for any company. Many steps have to be taken to achieve this, and one of these is absolutely essential: that the idea of satisfying the customer with an excellent service job is fully embraced by the company’s staff. Huge importance is attached to this at Mitsubishi Electric. On the Japanese principle of kaizen or “change for the better”, we aim to do this a little more each day.

改善

**Kaizen** (Japanese kai = change; zen = for the better) is a Japanese philosophy of life and work that aspires to continuous improvement.

Best regards from Ratingen

**Hans-Jürgen Pelzers**

Distribution Manager Europe

## Legal notice

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# Newsflash



## A versatile venue

Mitsubishi Electric has been the official sponsor of the Mitsubishi Electric HALLE since 1st April 2011. The popular and longstanding Düsseldorf venue has been providing the ideal setting for a huge diversity of events for what is now 40 years. Following a major revamp of the façade and the interior, the Mitsubishi Electric HALLE now has a new face. The face of Mitsubishi Electric.



## Flexible design meets high performance: the new Scara RH-3S robot

The Mitsubishi Electric RH-3S is a high-performance and cost-effective alternative to spider robots. Attached to the ceiling, it can be installed right where it is needed without taking up unnecessary space. The robot is also impressive in terms of performance: with a clock cycle of 0.32 seconds, it performs up to three pick-and-place motions within a second.



## An impressive view: the OLED Globe from Mitsubishi Electric

The first spherical large-format screen of organic LEDs has been on display at the Science Museum in Tokyo since June 2011. 18 metres above the ground, 6 metres in diameter, 10,362 OLED panels measuring 96 x 96 millimetres. The effective is remarkable. Like the OLED system from Mitsubishi Electric. 10 million pixels – roughly ten times that of the existing LED display.



## Power for the Congo: Mitsubishi Electric supports Médecins sans Frontières

What we take for granted is for people in the Congo more the exception than the rule: electricity. Even hospitals rarely have a power supply. Together with RA6 from Putte, Belgium, Mitsubishi Electric has equipped a Congolese hospital operated by the organisation Médecins sans Frontières with a 5 kW photovoltaic system.



## SK-WERKZEUGBAU

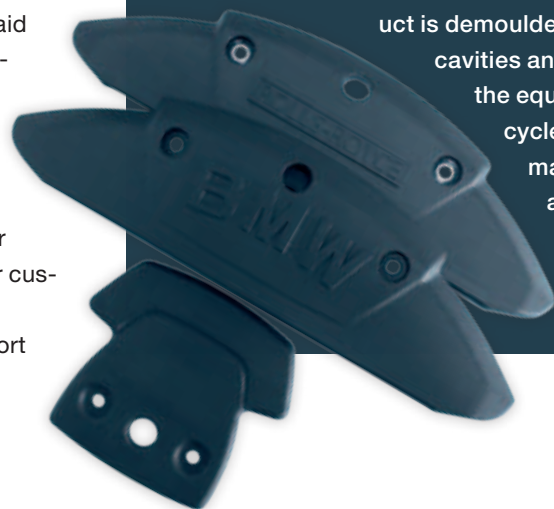
# No hurdle **too high**

No challenge is too big for Stefan Korbach. On the contrary: he enjoys developing complex injection moulds for technically sophisticated plastic parts.

A man of principle: Stefan Korbach, Managing Partner of sk-werkzeugbau GmbH, Extertal, steps between the halves of an injection mould that comes up to his shoulders. "This complex mould for thermoplastics is a fine example of our company philosophy." The injection moulds that the company produces also include high-temperature and multi-component moulds. These are joined by hybrid moulds into which other materials are inserted and in which separately introduced inlaid elements are integrally injection-moulded. Korbach: "We neither serve the market with simple components, nor are we willing to handle any job at any price or to compete with Far Eastern cut-price suppliers. Our customers appreciate our strategy and aspirations, technical support

## Injection moulds for **plastic parts**

For the mass production of plastic parts, injection moulding machines that give the products the desired shape in the injection mould are used. The machine's injection unit plasticises the feedstock, which usually takes the form of plastic granules. It then injects it into the closed mould. Usually of steel, it is made specifically for the product in question and forms the negative shape of the plastic part with the aid of a cavity and a mould core. The mould opens after each cycle, and the product is demoulded. A mould equipped with several cavities and mould cores is capable of producing the equivalent number of parts in a single cycle. If a user wishes to produce mouldings made of different plastics, e.g. rigid and flexible, a multi-component mould has to be used.



Stefan Korbach (right) and Mario Kramer, operator of the FA20-S Advance, discuss the next wire-cutting job.

and high quality. And that's why they recommend us to others."

### Committed to serving the customer

The approach of sk-werkzeugbau GmbH is also strongly marked by a commitment to serve the customer, now second nature to the entire team. "Our broad range of machines enables us to offer not only complex moulds, but also to provide services and fabricate one-off units." Stefan Korbach stops in front of an injection mould in his production shop. "This mould is a good example of the modifications that customers sometimes want. This one was sent it to us by a customer so that we can adapt it to his modified end product. In such cases, it is also important to respond quickly. The same applies to repairs.

Obviously the user wants to keep his downtime to a minimum."

sk-werkzeugbau also gains the confidence of its customers with advice. "If it turns out that a plastic item can be produced more economically than with the originally envisage method, we point this out and suggest redesigning it if possible," Korbach stresses. He benefits here from his own expertise and that of his skilled staff who together contribute over 45 years' experience of mouldmaking.

On his laptop, Korbach opens up a time schedule. "We leave nothing to chance, keep track of the deadlines for each project and document progress. Every two weeks, we draw up a schedule and status report and send this automatically to the customer." The company also

produces measurement reports that it generates internally on a CNC machine. sk-werkzeugbau is also capable of carrying out traceable flatness measurements and adjustments on plastic items and workpieces. These are important for the customer if, for instance, the products have to be ultrasonically welded.

### State-of-the-art machine park

On our tour Stefan Korbach introduces us to his machine park. "To stay competitive we regularly invest in new plant. We want our customers to see our efforts to stay technically ahead, because the quality of our work depends essentially on this." sk-werkzeugbau thus machines its injection moulds on hyper-modern CNC-controlled machines,





Jörg Micklitz is one of the highly skilled employees of sk-werkzeugbau who collectively contribute 45 years of experience to mouldmaking.

→ one of these being the FA20-S Advance from Mitsubishi Electric.

The machine receives the production data for the component and the injection moulding CAM data via an internal network. The components that sk-werkzeugbau cuts on the FA20-S Advance with wire diameters of 0.1 to 0.3 millimetres are mainly made of heat-treated ESR steels that are less liable to crack than standard steels. To suit the application, the surface treatments range from roughing to fine finishing.

On the monitor of the Advance CNC control, which is equipped with the high-precision and dependable wire erosion system, Stefan Korbach calls up the CAD drawing of a mould component. The customer needs the unit for the production of brake boosters. "We mainly

bought the machine because it can cut these safety-critical parts. As the example shows, we have to comply with extremely narrow tolerances and produce the components for a perfect fit." Precision is also in demand for a plastic part for a light-actuated rain sensor project of the automotive industry for which sk-werkzeugbau has cut ejector holes in the required mould with a precision of five micrometres and without flashing.

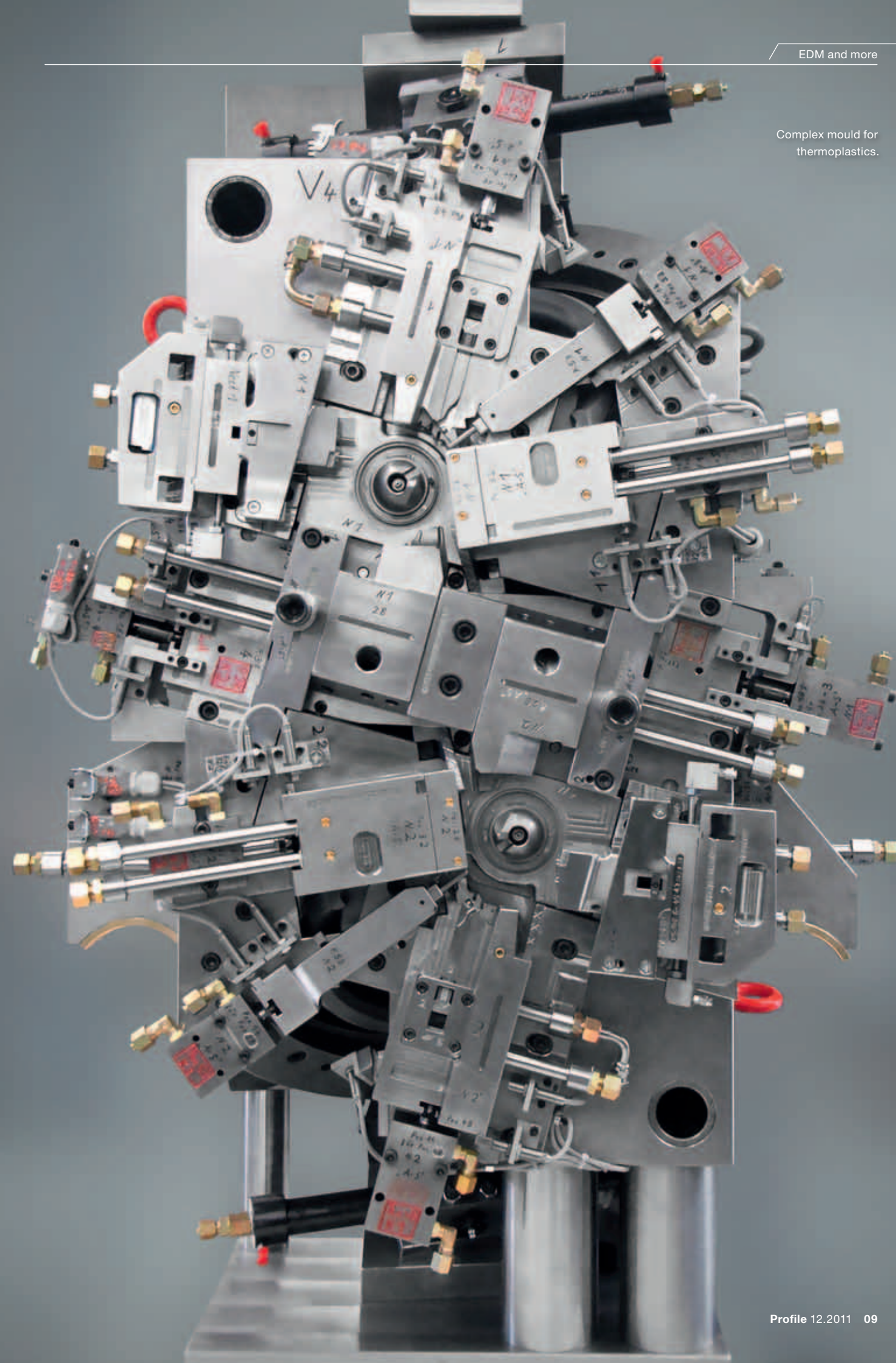
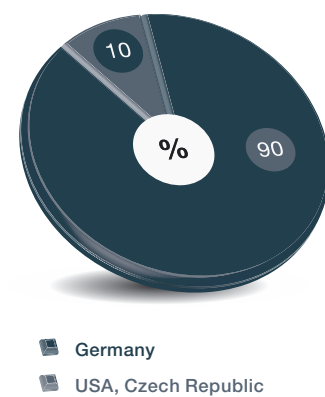
The machine's user-friendly wire-threading system, which takes a mere ten seconds for threading, was another important selection criterion. Korbach presents a workpiece with a start hole diameter of only 0.5 millimetres. "In a very challenging test, we asked Mitsubishi in Ratingen to check whether the wire could be threaded automatically



## Stefan Korbach goes for quality

Having run the mouldmaking activities of Friedrichs & Rath GmbH, a manufacturer of high-grade plastic parts, for many years, Stefan Korbach took over the department and started his own business in 2008. Building on his expertise acquired there, he and his 30 employees now produce high-quality injection moulds that achieve long service lives. This has impressed his customers, who can be found mainly in the automotive industry, but also in medical technology and the furniture industry.

Distribution of sales



Complex mould for thermoplastics.



**Mario Kramer** monitors the user-friendly wire-threading system of the FA20-S Advance that takes a mere ten seconds for threading.



» **The wire-threading system has satisfied our expectations in every respect.** «

→ into the given hole size of this component and, if so, how quickly and reliably it can do it. The results satisfied our expectations in every respect. We are therefore capable of running the machine unmanned even with tiny start holes – an advantage that we regularly exploit.” Despite automatic production, everything remains under control. And if a malfunction ever occurs, the machine’s intelligent Telecontact function sends a message from the control via text message to a phone number specified by the user.

Another component that Stefan Korbach shows us is conical. “Above and beyond its high precision, the system must also be capable of cutting conical

and other geometries. The equipment features that we consider absolutely essential include changing cutting heights and the possibility of smoothly interrupting cuts so that, for example, the cut can be executed through a bore.” The second Mitsubishi Electric wire-cutting machine used by sk-werkzeugbau is an FX20-K Plus. The jobs it handles are much the same as those of the FA20-S Advance. It is only for

very small start holes and large cutting heights that there is no alternative to the FA20-S Advance. The latter is also more reliable and more economic.

### Focus on process optimisation

Stefan Korbach never rests. He constantly shuttles between his office and the production shop, immerses himself in new jobs, makes phone calls or talks to his team. “We’re currently further developing mould components in cooperation with Bielefeld Technical College. The goal of the project is to reduce the cycle time of injection moulding in order to make the production process more economic.”

[www.sk-werkzeugbau.com](http://www.sk-werkzeugbau.com)

[www.sk-werkzeugbau.com](http://www.sk-werkzeugbau.com)

#### Name and place of company:

sk-werkzeugbau GmbH,  
Extertal, Germany

#### Founding year:

2008

#### Managing director:

Stefan Korbach

#### Number of employees:

30

#### Core business:

Production of high-quality injection moulds

#### sk-werkzeugbau GmbH

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## Professionals in Profile:

Stefan Korbach



#### Please describe in a sentence what sk-werkzeugbau GmbH does!

We make steel moulds (injection moulds) with which our customers produce plastic articles.

#### How did you earn your first money?

Making injection moulds and repairing and modifying them.

#### What motivates you?

My goal of positioning a well-known and successful mouldmaking operation on the market as well as communicating with interesting people every day and learning from them.

#### What’s different about how you do things now, compared to five years ago?

Today I work “in order to win” and not “in order not to lose”.

#### Where do you see your company in five years?

The company will be at least as big as it is now and we shall continue to specialise in certain product categories and position ourselves accordingly.

#### What was your biggest business success?

Piloting sk-werkzeugbau together with my staff through the global financial crisis.

#### What’s your favourite way to relax?

At home with my family and with friends and practising sport and my hobbies.

#### What attributes do you value most in other people?

Reliability, honesty and punctuality.



One-offs for specific customers make up a large portion of the product range handled by Erodier Technik Naumann GmbH.

## ERODIERTECHNIK NAUMANN

# The rapid response force for prototypes

For Erodier Technik Naumann GmbH, wire EDM is a still young but all the more successful line of business – thanks in part to Mitsubishi Electric.

Erodier Technik Naumann GmbH evolved in 2007 out of Erodier Technik Mersetzky GmbH founded in Elchingen in 1988, where Oliver Naumann had been in charge since 2006. As the new company owner, he has continued the existing business policy by offering customers in toolmaking, machine manufacture and aerospace a broad spectrum of services. Along with wire-cut and sinker EDM, this range of activities has also included water jet cutting since 2008. In terms of hardware, Naumann relies on advanced EDM technology from Mitsubishi Electric, as demonstrated recently by the purchase of a BA8.

“As a jobshop, we earn our livelihood by being able to respond flexibly and at short notice to customer requests.” Oliver Naumann, owner and managing director of Erodier Technik Naumann GmbH, has made his mark not least as a result of this realistic assessment of the much-embattled EDM jobbing market. On top of this, there are his many years of working for the company and the experience of his eight employees. “Longstanding customers therefore stayed true to us even after the change of name.”

When it comes to attracting new customers, Naumann can also point to major success – this being due to the service provider’s ability to respond quickly. “If necessary, we act like a rapid response force that rushes out to prevent a crisis,” Oliver Naumann explains. This has brought him a number of new customers – and follow-up jobs. “Anyone who’s satisfied with our work is happy to entrust further components to us.”

The components that Naumann machines are as varied as his customers. “We mainly deal with one-offs and do a lot of work for makers of prototypes,” says Oliver Naumann, describing his highly customer-specific offer. A series comprises a maximum of 100 parts. However, what the parts all have in common is their high standard of quality, as the skilled mouldmaker elucidates: “The de-

gree of complexity can be extremely high and yet we achieve precision in the  $\mu\text{m}$  range with surface qualities as good as RA 0.2.”

### Mitsubishi Electric for dependability

Erodier Technik Naumann GmbH satisfies its aspirations in terms of quality and precision both with the necessary expertise and with the very latest machine technology. Two wire EDM machines from Mitsubishi Electric – both FA10-S Advance machines – along with an EA12-V sinker EDM machine have been in operation here since 2008. The firm’s positive experience with these three machines culminated in the most recent purchasing decision, says Oliver Naumann: “The dependability of the Mitsubishi Electric machines is outstanding across the board, not only because we regularly service all the machines. Our operators were quick to acclimatise themselves to them.”

The fourth Mitsubishi Electric machine in Naumann’s machine park is a BA8 and

» Our plan is to buy two more machines in the next three to five years. «

Erodier Technik Naumann GmbH has been working with the two FA10-S Advance machines from Mitsubishi Electric since 2008.







The controls from Mitsubishi Electric can be operated **with ease and intuition**.

➔ is now fully integrated in the production process since its installation a few weeks back. Although its control without a touchscreen is simpler than that of the FA10-S Advance, Oliver Naumann does not consider this a drawback: "This hardly makes itself felt during operation as the machine technology is practically identical." It's the results of EDM that count along with the machine's integration in the company's workflow.

As far as Naumann's expectations are concerned, the BA8's equipment leaves nothing to be desired. A high-performance generator ensures that the machine works swiftly – Oliver Naumann quotes a 20 per cent increase in speed over older models – and at the same time guarantees reproducible precision. Over and above this, the automatic wire threader supports continuous workflow. "Like the two FA10-S Advances, we also run the BA8 in unmanned shifts in order to boost our productivity and flexibility.

The machines' high rate of utilisation also presupposes a high level of process security, which Naumann ensures with the servicing mentioned above. However, even when help from the manufacturer is required, the solutions are straightforward and, more importantly, quick, Oliver Naumann has found. "Whether via the hotline or here on site, the

Mitsubishi Electric technicians are competent and act fast enough to keep our downtime to a minimum." He is equally appreciative of the ordering of spares and other materials via Mitsubishi Electric's online shop, which boasts product availability with deliveries at short notice.

### Concentrating on core competences

Wire-cutting at Naumann has evolved into a core line of business in the last few years because the technology permits forms of machining that would be impossible or exorbitantly expensive with conventional methods. The team therefore concentrates on services of precisely this kind. Oliver Naumann has deliberately decided against time-consuming development jobs: "Although we've certainly got the expertise for supporting customers in the engineering of components, we'd have to invest so much time that our flexibility would suffer."

Oliver Naumann aims to stay committed to flexibility. With the current workforce, he's got sufficient potential for further growth – and investment. "Our plan is to buy two more machines in the next three to five years so that we can serve the market with a broader range of activities."

[www.werkzeugbau.de](http://www.werkzeugbau.de)

[www.werkzeugbau.de](http://www.werkzeugbau.de)

#### Name and place of company:

Erodiertechnik Naumann GmbH,  
Leipheim, Germany

#### Founding year:

2007

#### Owner and managing director:

Oliver Naumann

#### Number of employees:

7

#### Core business:

Wire and sinker EDM, water jet cutting

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## Professionals in Profile:

Oliver Naumann



#### Please describe in a sentence what Erodiertechnik Naumann GmbH does!

Our core line of business is wire EDM.

#### How did you earn your first money?

In steel mouldmaking and later as a mouldmaker and master fine mechanic.

#### What motivates you?

Satisfied customers and a good job of work for the envisaged application.

#### What's different about how you do things now, compared to five years ago?

Thanks to our larger workforce, we've become more flexible and delivery deadlines have become tighter.

#### Where do you see your company in five years?

We'd like to become more flexible by buying two more machines.

#### What was your biggest business success?

Growth and buying a shop and moving the business during the crisis in 2010.

#### What's your favourite way to relax?

Walking the dog.

#### What attributes do you value most in other people?

Openness and honesty.

#### How would you briefly describe what you do to someone with no technical knowledge?

We burn metal with a fine wire.



C.V.T. cuts **small components** together in a multi-workpiece clamping operation.

# Alive wire

## CONTROLLED VONK TECHNOLOGIE (C.V.T.)

If you haven't got customers, you've got no right to exist, the Dutch say. Not a sentiment to worry Albert van Heugten, a man who's made his mark with product and delivery quality.

Wire EDM is his life – something you immediately notice when you meet Albert van Heugten. But is the success of Controlled Vonk Technologie B.V. (C.V.T.) in Hoogeloon in the Netherlands entirely down to the owner's drive? Van Heugten, a self-confessed workaholic, laughs: "Not only. Our company philosophy is just as important. We aim for top quality with rapid throughput and punctual delivery. These are anything but empty words, because everything here is part of an integrated system, from finding the solution and wire-cutting machines from Mitsubishi Electric through to logistics."

A spiral used in X-ray equipment.



### EDM skills and honesty as a service

This also applies to the service that C.V.T. offers during job processing. It involves being open to customer requests, taking a holistic approach and pointing out the opportunities for optimisation. On his PC screen, Albert van Heugten opens a picture of a little spiral for X-ray equipment, machined in molybdenum, a high-strength metal. "We advise the customer on the component's feasibility. Above all, we check whether the demanded quality of cut can be achieved with the given material. If not, we recommend an alternative."

Van Heugten also always highlights the most cost-effective solution for a product. In terms of the range of jobs handled by C.V.T., wire-cutting usually proves to be the fastest and most economical process. One reason for this is that the parts can be stacked for wire-cutting – something that's impossible with laser-cutting.

Referring to three-dimensional CAD files, Albert van Heugten demonstrates

**» Everything here is part of an integrated system, from finding the solution and EDM machines through to logistics. «**

the diversity of products that can be produced with EDM. "If in exceptional cases laser-cutting, turning or etching turns out to be less expensive, we turn down the job and recommend the more competitive method. Honest advice pays off in the long run because you gain the customer's confidence. This is an advantage that Western Europe as a production location ultimately benefits from." But this is not all: C.V.T. shares its expertise with other wire eroders. Heugten doesn't expect any loss of custom from this, as he has his own highly specialised market niches.



**Jos Tiggelman**, C.V.T. employee, sets up the NA1200 Essence for the next workpiece.



→ In C.V.T.'s view, anyone who wants to establish himself on the market as a competent wire-cutter has to have not only a wealth of experience of eroding processes, but also an in-depth understanding of the machines and of workpiece clamping operations. Van Heugten lays an eroded workpiece on the table that he glued onto a clamp and then measured. "It was our idea to use adhesive in this case. If the workpiece isn't correctly clamped, stresses may arise that can diminish quality of the component or even destroy it." As another example of his creativity, the committed wire-cutter takes a circular electrode out of a glass cabinet. After eroding, he manually curved its edge upwards and thus got the component into the desired shape.

### Complex cuts of supreme precision

To make his ideas reality, Albert van Heugten has the requisite machine park. He's been working with wire EDM machines from Mitsubishi Electric for six years and has absolutely no complaints.

With the tip of a pencil, he traces the complex cuts in a 110 x 85 x 20 millimetre plate that he machines in series for the semiconductor industry. "This is the product that our NA1200 Essence handles most."

The high-precision machine has an Advance CNC control and tubular direct drives fitted with an optical communication system. It's also equipped with a digital FS generator that facilitates surfaces with mean roughness values of only 0.05 micrometres. On this machine the processing time for the cut plate, with various clamping operations, is 15 hours. Clamped horizontally, three of these components can be eroded simultaneously, and six vertically. One series of these parts, of which C.V.T. produces 400 per year, runs for about 24 hours virtually unsupervised on the NA1200 Essence. The company cuts with 0.25 millimetre diameter wire. For the final cut, it uses thin wire of 0.1 millimetre diameter.

The finished plate consists of two segments that pivot around a defined point

without them being separable. Albert van Heugten demonstrates how the two segments can be moved. "We secure the plate during transport by locking the segments. This was also our idea." He slides two pins into existing openings. "When our customer suggested bolting them together, we proposed these pins as the simplest solution."

What van Heugten also likes about the NA1200 Essence, which C.V.T. invested in at the beginning of 2011 to extend its production capacity, is its rapid wire change, ease of operation and its virtually malfunction-free running. These are benefits that instil confidence and give him a good feeling about meeting his delivery deadlines.

Along with the NA1200 Essence, C.V.T. has other wire-cutting machines from Mitsubishi Electric: an FA10-S Advance, a PA20 and a PX05. The operator uses the FA10-S Advance for standard applications. As it is similar to the NA1200 Essence in terms of operation and precision, C.V.T. can always quickly transfer its workpieces to the other machine.

**Albert van Heugten** advises customers on the component's feasibility and checks whether the demanded quality of cut can be achieved with the given material.

## Our flexibility is also made possible by the B axes of the FA10-S Advance and PA20

The outcome is a highly flexible production set-up that is always capable of squeezing in an extra job. Albert van Heugten places a spiral spring on the table. "Our flexibility is also made possible by the B axes of the FA10-S Advance and of the PA20, with the aid of which we're able to produce springs like this."

### Viewing the future with optimism

The market has rewarded the approach of the firm that, in addition to wire EDM, also performs measuring, abrading and ultrasound cleaning as services. Not only in the Netherlands and Belgium, which account for about 50 and 30 per cent of the sales of over 500,000 per year (2010), but also in Germany and Switzerland, cus-

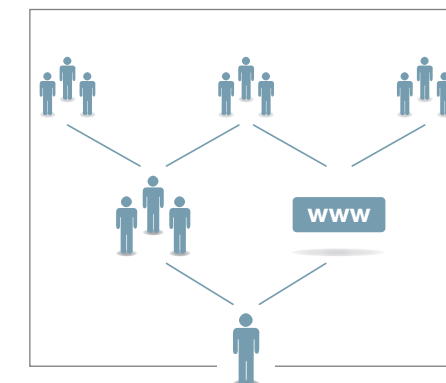
tomers appreciate what C.V.T. has to offer. A relaxed van Heugten leans back in his chair. "The satisfaction of our customers, who mainly come from the semiconductor industry, medical technology and machine manufac-

ture, can be seen if only from the fact that none of them have so far switched to the competition."

C.V.T. doesn't even have to actively advertise for business. Potential customers come to

Albert van Heugten via the Internet and by word-of-mouth recommendation. Thanks to this comfortable state of affairs, he has every reason to view the future with optimism.

Potential customers arrive via the Internet and by word-of-mouth recommendation.



[www.cvtbv.nl](http://www.cvtbv.nl)



## Albert van Heugten: A bright spark

Albert van Heugten founded his first company in 1991. After two and a half years with two employees, he sold the business and became a director of the same firm. With this firm and ultimately 13 employees, he provided EDM and conventional turning and cutting services. From this company, he launched Controlled Vonk Technologie B.V. in January 2002. In making this move, the spark (the "Vonk" in the company name) has kindled a flame: Van Heugten now concentrates exclusively on EDM technology.



[www.cvtbv.nl](http://www.cvtbv.nl)

**Name and place of company:**  
Controlled Vonk Technologie B.V.,  
Hoogeloon, Netherlands

**Founding year:**  
2002

**Managing director:**  
Albert van Heugten

**Number of employees:**  
1

**Core business:**  
80 per cent of sales are generated with  
the semiconductor industry and ma-  
chine manufacture, and the rest is con-  
tributed by medical technology

**Controlled Vonk Technologie B.V.**  
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## Professionals in Profile:

Albert van Heugten



**Please describe in a sentence what Controlled Vonk Technologie B.V. does!**

C.V.T. is a specialist in high-grade and high-precision parts. This applies as much to prototypes as to series production.

**How did you earn your first money?**

In mouldmaking. After my training, I gathered experience of all forms of machining, i.e. turning, milling, grinding, cylindrical grinding and, finally, wire-cutting.

**What motivates you?**

Satisfied customers and being able to create something that verges on the impossible.

**What's different about how you do things now, compared to five years ago?**

Today I share my knowledge with an employee. Previously, I worked by myself for eight years.

**What was your biggest business success?**

In crisis year 2009, when we had very little work, I contacted the design engineers of potential customers in order to explain the possibilities and advantages of wire EDM. This proved to be highly successful.

**What's your favourite way to relax?**

I'm a workaholic and enjoy working. But I can also relax reading and on holiday.

**What attributes do you value most in other people?**

Honesty and frankness about their machining work. It's best not to keep one's knowledge to oneself. A free flow of expertise is important, because the whole economy benefits. What's more, the Chinese won't then be a threat to the Europeans.

**How would you briefly describe what you do to someone with no technical knowledge?**

I saw complex shapes electronically.

Thanks to its many years of experience and advanced production methods, Roming Werkzeugbau supplies superlative quality, however large or small the series.

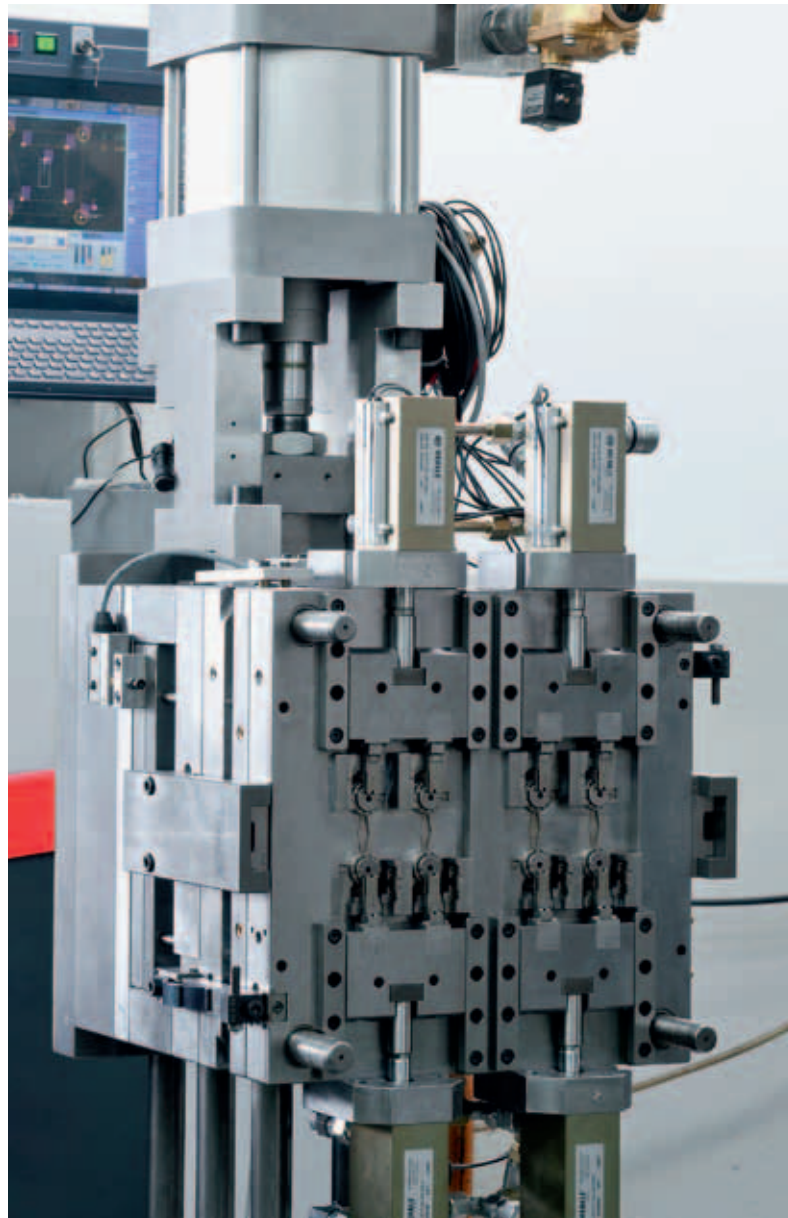
# Just 4 weeks to the finished product

ROMING WERKZEUGBAU



Ever since Franz Roming founded Roming Werkzeugbau GmbH 85 years ago, the firm in Rottweil has been a hallmark of quality and reliability in mouldmaking. With injection moulding as the main activity, Roming is now a full-range supplier to customers in the automotive industry and electronics sector who appreciate the flexibility of the injection moulding experts as well as their commitment to quality and rapid response to customer needs. Roming recently invested in a wire-cut EDM machine from Mitsubishi Electric – for good reason, because this production technology handles a good third of the workload in the mouldmaking department.

» Our customers are accustomed to comprehensive service and high quality. «



The development of what are often highly complex injection moulds is one of the core competences of Roming Werkzeugbau GmbH.

Any component supplier who wants to stay competitive in the automotive sector has to respond flexibly and supply high-grade products. And Roming Werkzeugbau GmbH has been acting on this principle for many years. The injection moulding and mouldmaking experts from Rottweil support their customers in the development of a new product, make the associated moulds and produce the mouldings in anything from small series to production runs amounting to millions of parts. “Not only are our customers accustomed to this comprehensive service and high quality, but these two attributes are also necessary today if we want to hold our own in the face of high-output competition from abroad,” says Michael Roming, head of mouldmaking, outlining everyday business.

Roming has been engaged in injection moulding for about 50 years and has been supporting its customers as a suitably experienced and competent service provider. The fact that Roming supplies nothing but high-grade components is thus due to the high level of skills of the workforce and to high-performance machines in injection moulding and mouldmaking. Karl Roming highlights at this point the strong deadline pressure. “Depending on



the size of the mould, we supply the finished product within four weeks in some cases.” This period covers the entire development of a new mould on the basis of a 3D model of the end-product.

### Wire EDM a key technology

This rapid response is only possible because Roming can resort to a fully equipped mouldmaking shop that encompasses all conceivable production technologies. Along with HSC, which has revolutionised production, sinker EDM has long played an important part, backed up in recent years by wire-cutting. The most recent investment in mouldmaking was made in wire erosion, one of the key technologies in mouldmaking. “We considered conventional 5-axis milling, but wire-cutting currently has priority,” says Michael Roming reviewing the

purchase. The advantages were obvious. “Dimensional accuracy and reproducibility in automated operation are immensely important for us.”

The decision in 2010 went in favour of a wire-cutting EDM machine from Mitsubishi Electric, the NA1200 Essence. Firstly, they had already had positive experience with Mitsubishi Electric in the sinker EDM sector, and secondly the arguments in favour of this model were highly persuasive. “The machine’s excellent price/performance ratio was decisive and such features as the FS generator and thin-wire technology matched our requirement profile to perfection,” says Michael Roming, summing up the advantages. In addition, the NA1200 Essence has slightly larger dimensions than the FA10-S Advance, which makes it better suited to the product range.

Top The NA1200 from Mitsubishi Electric has been working dependably in Roming’s mouldmaking shop since May 2011.



Compared to 5-axis milling, wire-cut EDM has the advantage of higher dimensional accuracy and reproducibility in automated operation

Left Roming's flexibility also extends to injection moulding. Parts with up to eight cavities are moulded here.

➔ Although the NA1200 Essence is the first wire-cutting EDM machine from Mitsubishi Electric, Roming's employees were able to resort directly to their experience with the sinker EDM machines. In this context, Michael Roming highlights the control. "The user interface is intuitively structured, so familiarisation didn't take long." At any rate, the investment soon paid off, as a glance at the results shows. Roming operates with tolerances of just a few µm and machining performance has been almost doubled compared to that of the previous machines.

Michael Roming also draws attention to the machine's dependability: "Our flexible working method calls for a smooth-running machine park in all departments." The NA1200 Essence has so far proven to be extremely dependable, and he also has nothing but praise for the Mitsubishi Electric service. "The hotline is both competent and easy to reach and the online shop is a useful source for any parts that we need."

### A broad basis for the future

Michael Roming is unable to estimate exactly how the various sectors of industry will actually develop, but he knows that demand for electronic components will continue to grow. "That's why we shall continue to have a broad basis and supply as many and as different customers as possible." This is the best way of mastering the ups and downs of the economy. The workforce is already set to grow. Roming currently employs 22 skilled operatives, a number that will soon increase. Roming ensures the standard of quality in this area by training its own staff and thus counteracts the shortage of suitable young job candidates.

In the field of wire EDM, the optimum has now been achieved, Michael Roming believes. "The NA1200 Essence will be the benchmark for the next five years, but we shall of course keep an eye on developments in technology."

[www.roming.com](http://www.roming.com)

[www.roming.com](http://www.roming.com)

**Name and place of company:**  
Roming Werkzeugbau GmbH,  
Rottweil-Neukirch, Germany

**Founding year:**  
1926

**Managing director:**  
Karl Roming

**Number of employees:**  
22

**Core business:**  
Development and production of high-precision injection moulds and plastic mouldings

**Roming Werkzeugbau GmbH**  
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[info@roming.com](mailto:info@roming.com)

## Professionals in Profile: Michael Roming



**Please describe in a sentence what Roming Werkzeugbau GmbH does!**

Injection moulding and mouldmaking.

**How did you earn your first money?**

I've been working here since 1961 and completed the classic course of training as a mouldmaker.

**What motivates you?**

Aiming for supreme craftsmanship and the fact that we develop solutions with dependable people.

**What's different about how you do things now, compared to five years ago?**

HSC has brought about the biggest change, much like the introduction of sinker EDM in 1965.

**Where do you see your company in five years?**

The growing importance of electronics and specialisation in niche products and super-small series promise stability.

**What was your biggest business success?**

We have managed to amass a storehouse of experience and knowledge over the years and offer everything from a single source with the virtues of craftsmanship.

**What's your favourite way to relax?**

Breeding Scottish highland cattle on our certified organic farm.

**What attributes do you value most in other people?**

Honesty and dependability.



# 24/7, 8 employees

**In the wire-cutting of mould components, SD Formentchnik banks on customer loyalty and machines from Mitsubishi Electric.**

If you drop in on SD Formentchnik KG, Schalksmühle, during the lunch break, you can sense the team spirit wafting over to you from outside the production shop. Its managers Jens Dryzynski and Holger Schulte enjoy the break together with their staff in the yard. "Our small team is big enough to respond flexibly," Schulte explains. "This is a key advantage in terms of our company philosophy that stresses strong customer loyalty," Dryzynski adds.

SD Formentchnik has also created the basis for long-term business relations with the quality of its work and high manufacturing depth. All this is backed up by punctuality as well as swift reaction in the event of any problems, unforeseen repairs or tight delivery deadlines. Thanks to this rapid response, customers benefit from virtually continuous processes and planning security.

## Sights set on win-win situations

Customers also appreciate the advice given by the company founded in 2003. This is based on experience and on the resultant expertise. In the building

of injection moulds, SD Formentchnik covers all the planning, development and realisation stages, from the initial design through to the finished injection moulding. Holger Schulte goes over to a glass cabinet containing products of his customers. These include interior components for cars, electrical and electronic components, syringes and cannulae for medical technology, and assembly parts for the construction industry. "With our expertise, we're able to produce moulds for a wide range of industrial sectors and applications, and always with high precision and reliability. And this can be a new mould or the repair or modification of an existing one. We're often able to produce injection moulds with simpler and less expensive designs. In all this, one thing always stays the same: our aspiration to achieve a win-win situation."

What set the company apart from its competitors in the region are

its more advanced machine park and mould sizes with basic lengths and widths of up to 900 and 600 millimetres respectively. A unique selling point in the immediate geographical surroundings is that the company develops and produces injection moulds not only for thermoplastics but also for thermosetting plastics, materials that are more stable dimensionally and temperature-wise than thermoplastics.

## Unmanned night and day

The company's machine park has included a FA20-S Advance V wire EDM machine from Mitsubishi Electric since July 2008. The machine is equipped with a wire-threading system that reliably and automatically threads the wire in ten seconds, a ten kilo wire station and a wire chopper. The machine can run unmanned and hence around the clock. Jens Dryzynski shows us

**» The competent service can always send someone round quickly and provides a hotline that really works well. «**

## SD FORMENTECHNIK

small mould cores in a multi-workpiece clamping operation. "The same also applies to these complex parts that we machine step-by-step by wire-cutting, die-sinking and repeated wire-cutting." The operator has the chance to monitor the unmanned system via remote control and a data line. This tool can also be used for controlling the system in real time.

On top of this, the FA20-S Advance V is equipped with the Teleservice tool via that enables Mitsubishi Electric's After-Sales Service to carry out remote diagnosis if desired and access the machine controls online to eliminate faults. In this

connection, SD Formentchnik draws attention the manufacturer's excellent service, stressing that it's always quick to arrive and provides a hotline that works really well. The service staff also make a competent impression. What's more, the caller isn't simply passed from one service technician to the next, as is usual elsewhere.

Jens Dryzynski types in a command via the PC keyboard of the Windows-XP-based Advance CNC control. The 15 inch touchscreen then displays a 3D simulation of the component that he wants to cut next. "The machine is straightforward, reliable and user-friendly. We

were impressed by its concept with dual direct distance measurement, workplace design and the sealing of the lower arm, which is nevertheless easily accessed for maintenance." What really clinched the decision in favour of the machine, however, was the test cut that SD Formentchnik carried out on all the wire-cut EDM machines short-listed for purchase. "The machine from Mitsubishi Electric proved to be one of the few that passed the test without any reservations," Jens Dryzynski explains. "What's important for us is that the FA20-S Advance V is equipped with a more powerful generator. This means we can machine higher workpieces at



Jens Dryzynski and Holger Schulte, managers of SD Formentchnik KG, have included the FA20-S Advance V wire-cut erosion system from Mitsubishi Electric in their machine park.



→ higher cutting rates. And it's easier to erode graphite electrodes even with coarser grain sizes." The reason for this is the high-performance generator's higher voltage that permits erosion rates of up to 500 square millimetres per minute. Another advantage of the FA20-S Advance V quoted by SD Formenttechnik is the high quality of its finer cuts. This puts the company in a position to carry out wire EDM tasks of this kind, even under subcontract.

### Complex components

Holger Schulte picks up a collapsible core with a middle segment and outer contour parts to demonstrate the complexity of the components he produces. "The collapsible core is required in injection moulds for interior undercuts so that, for instance, threaded parts with mould contours can be demoulded. To this end, the middle segment retracts and draws the outer contour part inwards, thus exposing the undercut, and the product can be released. "The components that the company produces for injection moulds are made essentially of steel. Their dimensions range from the size of a pin to 1050 x 800 x 295 millimetres (W x D x H), the maximum size for which the FA20-S Advance V is designed. Thanks to the machine's incredible versatility, all the challenges that arise in mouldmaking can be mastered with ease. Virtually all workpieces are cut with 0.25 millimetres bare brass wire without any compromises in surface quality.

### Confident about the future

The flexibility resulting from the company's team spirit permits a high standard



**Top** The small mould cores in a multi-workpiece clamping operation are machined step-by-step by wire-cutting, die-sinking and repeated wire-cutting.

**Bottom left** Mould core for a household wiring box.

**Bottom right** This complex collapsible core with a middle segment and outer contour parts is required in injection moulds for internal undercuts so that, for example, threaded parts with mould contours can be released.



of deadline compliance and short response times. These attributes combined with the quality of the component and the consultation services provided by SD Formenttechnik yield a win-win situation and ultimately strong customer loyalty. In view of this positive situation, Jens Dryzynski and Holger Schulte are confident about the future.

"We invest and continue to grow. It's something you can see happening." Dryzynski points to part of the shop where building is going on. "Here, for example, where we're setting up a new robot system for 5-axis milling."

[www.sd-formen.de](http://www.sd-formen.de)

[www.sd-formen.de](http://www.sd-formen.de)

### Name and place of company:

SD Formenttechnik KG, Schalksmühle, Germany

### Founding year:

2003

### Managing directors:

Jens Dryzynski and Holger Schulte

### Number of employees:

8

### Core business:

Development and production of injection moulds

### SD Formenttechnik KG

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## Professionals in Profile:

Jens Dryzynski and Holger Schulte



### Please describe in a sentence what SD Formenttechnik KG GmbH does!

We design and build moulds for thermoplastic and thermosets.

### How did you earn your first money?

We earned our first money as apprentice toolmakers.

### What motivates you?

Schulte: The challenge of producing moulds that always satisfy the customer's needs. Another motivation is to build a one-off on which parts for series production can be produced.

### What's different about how you do things now, compared to five years ago?

Dryzynski: We now operate more advanced machines.

Schulte: Five years ago, we had just two employees and did almost all the work ourselves. Now that we've got eight employees, we can concentrate as managers on specialised, more sophisticated and administrative tasks.

### Where do you see your company in five years?

Schulte: If things go well in terms of the economy and the order situation, automation will grow in importance. We may invest in injection moulding machines for the pilot and small series production of plastic parts so as to extend our value chain.

### What was your biggest business success?

Dryzynski: That we gained the confidence of our customers after setting up the business and build increasingly high-grade and complex moulds.

### What's your favourite way to relax?

Dryzynski: When everything in the company is going well.

### What attributes do you value most in other people?

Honesty and reliability.

### How would you briefly describe what you do to someone with no technical knowledge?

Dryzynski referring to wire-cutting: I cut things with an electrified, toothless saw.



A new robot system for 5-axis milling will soon be installed here







KARL KÜFNER

# A star of the **screen**

Karl Küfner KG's filter screens are adapted to any customer requirement. And this individuality starts with the making of the mould.

The patented V-filter from Küfner achieves minimal flow resistance combined with an extremely high filtration rate.

The strength and ease of installation of this clip filter developed by Küfner are impressive.



When Karl Küfner KG was founded in 1951, production was focused on weaving reeds. A short while later, the product range was extended to include filter screens and strainers – products whose applications can be found in a huge spectrum of industries, ranging from automotive engineering and machine manufacture to medical technology. The company in Albstadt has remained true to these two product groups through to the present day and consistently built on its expertise in the development, design and construction of tailor-made solutions – a wealth of experience that benefits well over 500 customers worldwide. With an extremely high manufacturing depth, Küfner ensures that this experience stays within the company. The best example of this is mouldmaking and special-purpose machine construction where the screen, strainer and filter experts rely on advanced wire-cutting technology from Mitsubishi Electric.

Weaving reeds on the one hand, and filter screens on the other – Karl Küfner KG unites two product groups that appear to have little in common at first glance. A second glance, however, reveals a close relationship, as the weaving reeds are used in the production of the metal meshes required for the manufacture of high-grade filter screens. Küfner therefore has a profound understanding of the needs of screen and strainer technology, evolving over the years into one of the technological

More than 500 customers worldwide benefit from the wealth of experience of Karl Küfner KG.





→ leaders on this market. The plastic-over-moulded metal-mesh screens and strainers from the Albstadt firm, for example, are absolutely unmatched.

### Focus on all-inclusive customer service

In all areas where filters, screens and strainers are required for liquid and gaseous media, manufacturers can rely on the customer-oriented solutions from Karl Küfner KG. It is therefore almost a logical consequence that the company has become firmly established in many branches of industry with its products and aims to expand its already extremely broad basis. "Whereas no one knows how the automotive industry will develop, growth in medical technology is our assurance of being able to operate more independently of the fluctuations of the business cycle," says Henning Oetjen, head of marketing. It makes no difference which sector customer inquiries come from. "Our products are without exception geared to the particular requirements and are synonymous with top quality."

Küfner is also synonymous with all-inclusive approaches, with its range of tasks extending well beyond the manufacture of a particular product. "We cover all the steps from the original idea via the first trial mouldings through to the ready-to-install filter," says Henning Oetjen, explaining their modus operandi. Their aim is to support the customer to such a degree that in future even the neighbouring technologies, such as measurement and control, will be integrated in filter manufacture. This effort

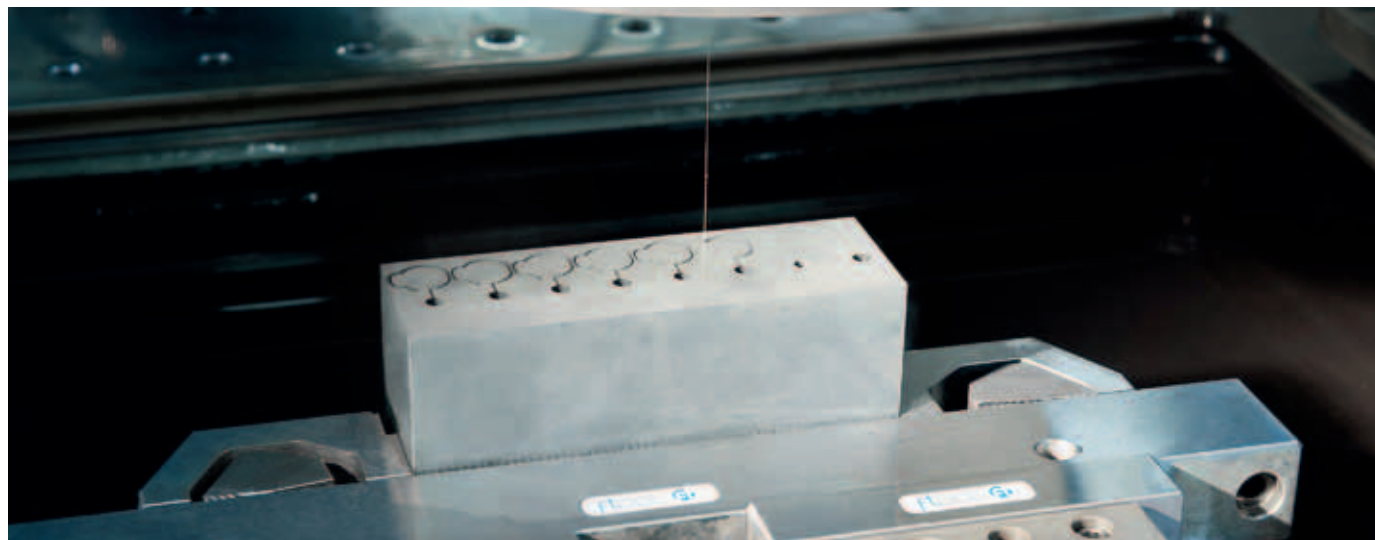
is necessary if the company wants to satisfy its own aspirations in terms of quality and customer orientation. And it also explains the high production volume, as the marketing manager explains: "A single job can amount to over 10 million parts per year. If desired, we can also handle the design and engineering for small and medium-sized series and then ensure the cost-effective production and punctual dispatch of the screens and filters developed specifically for the customer."

### Mouldmaking with hypermodern wire erosion

The large pool of customers combined with the high standard of customisation necessitates a flexible response from Küfner. The share of internally produced items is consequently high. This becomes particularly obvious in mouldmaking and special-purpose machine construction where everything has to be just right. This is where those tools and moulds are produced that in the ongoing

**Left** The machine's high speed and reliability are two decisive factors for the high output of the FA20-S.

**Bottom** With wire diameters down to 0.1 millimetres, the FA20-S achieves super-fine cuts and radii.



## All our products are individually tailored to the demanded requirements and exhibit superlative quality

ing production process are decisive for the quality of the numerous products. "The department's work is dominated by the constant confrontation with new challenges," says Henning Oetjen, summing up the day-to-day experience of the employees in mouldmaking and special-purpose machine construction.

The high manufacturing depth at Küfner also strongly suggests that nothing in mouldmaking is left to chance. They resort to all conceivable manufacturing technologies, which are put to use where they are most effective. This also applies to wire EDM when it comes to high-precision components with top-notch surface quality. Mitsubishi Electric has been the preferred supplier here since 2007. There were many reasons for the purchase of the FA20-S. "An investment in a machine is always initially an economic consideration. It was here that Mitsubishi impressed us with the best price/performance ratio," says Henning Oetjen, looking back.

sive for all the downstream production steps and its dependability is a sine qua non for continuous workflow." Long machining times are by no means rare in wire cutting. It is therefore all the more important that the FA20-S is also capable of running unmanned. Reliable automatic wire threading is an important feature, and the intuitive control and tools for monitoring also play their part.

The machine's reliability is exceptionally high. However, should a malfunction ever occur, help from Mitsubishi Electric is naturally called for. Küfner is more than satisfied: "The service team provides super-fast assistance either via the hotline or by sending out technicians," Henning Oetjen confirms. This positive experience with the technology and service have contributed to Küfner remaining faithful to the Japanese manufacturer this year and purchasing another machine from Mitsubishi Electric, this time in the sinker EDM field, an EA12-V Advance.

### Extending its expertise

Küfner has plotted a clear course for the future. Both in mouldmaking and special-purpose machine manufacture as well as in other links in the process chain, the company is committed to quality and expertise so that customers in all sectors will continue to receive top-flight and tight-fitting screen, strainer and filter solutions.

[www.kuefner.com](http://www.kuefner.com)

» A single job can amount to over 10 million parts per year. «

The FA20-S is indeed a high-power overall package. Running fast and dependably, it achieves precision to the nearest 2–3 µm and surface quality in the 2 µm range. Henning Oetjen sees in this machine the perfect basis for the overall process: "The machine's precision is deci-



www.kuefner.com

**Name and place of company:**  
Karl Küfner KG, Albstadt-Tailfingen,  
Germany

**Founding year:**  
1951

**Managing director:**  
Bernd Küfner

**Number of employees:**  
Over 300

**Core business:**  
Manufacture of weaving reeds and  
filter screens

**Karl Küfner KG**  
Rossentalstrasse 87–89  
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Germany

Tel +49.7432.951 0  
Fax +49.7432.951 115

info@kuefner.com

**Professionals in  
Profile:**  
Henning Oetjen



**Please describe in a sentence what Karl Küfner KG does!**  
We supply customer-specific screen and filter solutions for gases and liquids, from the idea through to mass production.

**How did you earn your first money?**  
With the production of weaving reeds.

**What motivates you?**  
The goal of being the industry leader with customised solutions.

**What's different about how you do things now, compared to five years ago?**  
We've raised our standard of quality considerably, e.g. with automated image processing, and can adapt our production extremely closely to the needs of our customers.

**Where do you see your company in five years?**  
Measurement and control technology will be increasingly integrated in our screen and filter solutions, and we shall focus increasingly on engineering and design for customised solutions.

**What was your biggest business success?**  
We are the technology leader with hybrid solutions, i.e. plastic over-moulded screens and filters with metal mesh.

**What's your favourite way to relax?**  
Many of our employees find the area ideal for mountainbiking and other mountain pursuits.

**What attributes do you value most in other people?**  
Dependability and precision.

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# Service –

from eastern Westphalia to Mexico

## A. & H. MEYER

Boredom is practically unknown to Christian Casilda Weissen. The term “flexibility”, on the other hand, means more to him – for if it didn’t, he would hardly have become a service technician for Mitsubishi Electric.

The autumn sun bathes the surroundings in a warm light, but Christian Casilda Weissen has his eyes on other things at the moment. It’s early morning and he’s started work on annual preventive maintenance at A. & H. Meyer GmbH in Dörentrup, Ostwestfalen-Lippe. The internationally active company that develops customised and safe electrification strategies has signed a maintenance agreement with Mitsubishi Electric for its FX10-K Platin wire EDM machine.

The service technician stands at the open switch cabinet of the machine control and measures its voltage. When he’s finished, he ticks the relevant inspection box on his maintenance checklist. “Doing this kind of work, it’s important to proceed systematically,” he stresses. “If the pump were faulty, for instance, I would first check the voltage.” Christian Casilda Weissen also checks the working of the fans responsible for cooling by

illuminating them with a torch. In his checklist he notes that the customer uses an automatic fuse system instead of the usual, single fuses. Next in turn is the battery that goes into action when the mains power is off. During the previous year’s maintenance, the service technician replaced the battery because the software had to be reloaded after each machine use, which suggested that the battery was at fault.

### Butterflies in his stomach

Asked whether his working days are much the same, Christian Casilda Weissen shakes his head. “Since my daily routine is confined merely to basic tasks, a high degree of flexibility is indispensable. This applies as much to my daily tasks as to my mental approach. What’s more, no two machines are the same and the malfunctions are always different. It’s also essential to be open to the customer’s ad-hoc requests.” On top of this,

there are the unscheduled maintenance and repairs. In these cases, the operator calls the hotline of the Mitsubishi Electric service centre in Ratingen. It’s from here that the assignments of the service technicians are coordinated, appointments made and any spare parts sent out in advance. If production stoppages are involved, there’s a high level of urgency.

The working day of a service technician usually lasts eight hours. Christian Casilda Weissen, who has been working for Mitsubishi Electric since 1998, mainly serves customers in eastern Westphalia and the Ruhr district. If required, his work may take him anywhere in Germany, and about five times per year abroad. Here, the focus is on Spain because he speaks the language fluently. “I’ve even been flown on a service assignment to Mexico,” he recalls. He has similarly fond memories of the butterflies in his stomach when he first glimpsed





## Maintenance made to measure

Mitsubishi Electric offers maintenance agreements that cover annual machine maintenance and attractively priced replacement parts. If the customer chooses one of the three agreements available (Wire EDM Basic, Wire EDM Extended, Sinker EDM), all the relevant units of his machines are regularly looked at and checked. This way it is possible to spot malfunctions early on and prevent breakdowns. The customer benefits for many years from the high precision and availability of his machines and from the matching quality of his products. The Wire EDM Extended agreement covers the adjustment of the associated machine units in addition.

To back this up, Mitsubishi Electric has set up a free hotline, which is available from Monday to Friday, from 7:30 a.m. to 5 p.m. In addition, an on-call service has been established from Monday to Friday, 5 to 8 p.m., and on Saturday from 9 a.m. to 4 p.m. The fastest-possible support is thus assured in all cases. Sending out technicians to the customer is usually possible at one to two working days' notice.

For customers who want to have their EDM systems under control at all times, Mitsubishi Electric has solutions available. This can mean giving the operator access to his machine functions from any location, having messages from his machine sent by text message to any compatible phones, and remote diagnosis or online support.

### Maintenance agreements for reliability

- ➔ Early identification and remedying of malfunctions
- ➔ Reducing downstream costs
- ➔ Spares at reduced rates

### Rapid assistance

- ➔ Free hotline
- ➔ On-call service

### Constant monitoring

- ➔ Text messages from the machine to any phones
- ➔ Remote diagnosis
- ➔ Online support



**Top** Wadim Friesen tells Christian Casilda Weissen about the uneven running of the wire in the machine.



**Left** The service technician replaces one of the threader's deflection bearings.

➔ an FA50-S Advance. He was the first service technician to install the biggest Mitsubishi Electric EDM machine in Germany. However, his range of duties covers more than just maintenance, repairs and installation. His speciality is laser measurement, which he uses for checking machine geometries.

### Cutting downstream costs

Against this background, the experienced service technician sees maintenance at A. & H. Meyer as anything but routine. Using the FX10-K Platin, a CNC submerged wire EDM machine with automatic threading and 5-axis CNC control, the customer machines components for injection moulds used in the production of plastic parts. With regular maintenance of the used machine bought in 2002, which had had a year's service for demo purposes at Mitsubishi Electric's Technology Center in Ratingen, he reduces the downstream costs.

Apart from this, a machine stoppage would have knock-on effects on production.

Because Christian Casilda Weissen takes time for talks, he maintains close contacts with his customers. One of these is A. & H. Meyer, where he has good relations with Wadim Friesen, who is responsible at the company for machine tools and moulds and hence also for the Mitsubishi Electric EDM machine. Wadim Friesen suggests having the machine's contacts cleaned. Then Christian Casilda Weissen inspects the sensor that measures the conductance of the dielectric fluid. He's not surprised that its electrodes are clean. "Mr Friesen keeps his eye on the machine. Since he regularly cleans certain areas and components, like this conductance sensor, the machine

**» Doing this kind of work, it's important to proceed systematically. «**

is kept in an immaculate condition. This is an advantage that reduces the time spent on annual maintenance from about eight to six hours."

### Good relations

Wadim Friesen tells the service technician about the uneven running of the wire in the machine, whereupon the service technician replaces one of the wire threader's deflection bearings, a typical wearing part. "We've got good relations with the customer and cooperation is excellent. The customer handles the minor maintenance jobs himself and uses original parts from the Mitsubishi Electric consumables line for this." In the last few years, A. & H. Meyer has mainly purchased bare brass wire of 0.2 and 0.3 millimetre diameter



Wadim Friesen thanks Christian Casilda Weissen for his professional maintenance.



➔ from this range. The consumables line also includes power feeds, filters, measuring instruments and clamping accessories.

The jobs during which Christian Casilda Weissen gets his hands dirty he reserves until the end. Today he has to dismantle

“If the pump causes mechanical noises, it’ll soon break down and have to be replaced.”

Maintenance ends with function tests. After this, the service technician writes a final report, which he supplements, if necessary, with recommendations.

He may, for example, draw attention to faulty parts that don’t yet affect the smooth running of the FX10-K Platin, but will still have to be replaced in the near future.

### Again a question of flexibility

Christian Casilda Weissen packs his bag. “It would be great if things always went

so smoothly. Some defects, however, are not always immediately identifiable. This depends often on the expanding use of electronics, which makes the machines and maintenance more complicated.” It occasionally also happens that a service technician is on site but the malfunction fails to occur the whole day long. Or the malfunction only arises in the afternoon. If the service technician doesn’t make progress with his work, he asks for support over the Mitsubishi Electric hotline. This may be necessary in the event of faults in the peripheral equipment or malfunctions that are new and with which there is no experience to fall back on. Finding solutions in such cases is ultimately again a question of flexibility.

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Because Weissen takes time for talks, he maintains close contacts with his customers

and clean the pump because the machine fills its dielectric tank too slowly. His freshly washed shirt now also shows traces of his work. Maintenance sometimes calls for the use of his ears.

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**Name and place of company:**  
A. & H. Meyer GmbH, Dörentrup,  
Germany

**Founding year:**  
1961

**Managing director:**  
Horst Meyer

**Number of employees:**  
Germany: 100  
Malaysia: 50

**Core business:**  
Market leader with tailor-made electrification and cable management systems in the office sector

**A. & H. Meyer GmbH**  
Leuchten und Büroelektrik  
Fermke 8  
32694 Dörentrup  
Germany

Tel +49.5265.9488 0  
Fax +49.5265.9488 11

[info@ah-meyer.de](mailto:info@ah-meyer.de)

## Well connected

A. & H. Meyer GmbH with its parent plant in Dörentrup, Ostwestfalen-Lippe, is the market leader and trendsetter in customised electrification and cable management systems in the office sector. Suppliers of furniture and furnishing strategies to hotels, public buildings and shops are also resorting increasingly to the reliable plug connection technology and hence on the company’s almost fifty years of experience. Along with its leading position with electrification expertise, A. & H. Meyer is also noted for having one of the biggest ranges of neat multiple plug socket boxes and data sockets and for its international distribution network.

The electrification strategies for power, data and multimedia are organised on the “plug & play” principle. The range of switches and plug sockets is one of the world’s most comprehensive. The units are compatible with most international standards for power sockets and with many standards for data and telecommunication sockets. As the company also aspires to high standards of quality and safety for its products and services, they all comply with the international safety standards for electrical equipment and quality standard ISO 9001/2000ff.

Founded in 1961, the company specialising in connectors employs a workforce of over 100 in Germany. Another 50 employees work for A. & H. Meyer Sdn. Bhd. domiciled in Shah Alam, Malaysia, in which the company has an 80 per cent stake. While the base in Germany mainly serves Europe, the subsidiary in Malaysia works solely for the Asian market.

The customers include big-name manufacturers of furniture for a huge range of applications. In addition, A. & H. Meyer serves building equippers, hotel furnishers and large corporations such as Yahoo, Nokia, Google and Dell. These appreciate the high safety of the company’s electrification strategies as well as the extra efficiency of the installation process and minimised input of materials. Also worth stressing is the strong emphasis on design, enabling the cable and plug socket solutions and multimedia components to integrate smoothly and unobtrusively into the interior architecture.

No less important for A. & H. Meyer is sustainability in its environmental protection efforts united under the “meynature” banner. The emphasis here is on the use of environmentally compatible materials and on resource-conserving production processes and products. This aspect of company philosophy also finds expression in participation in environmental projects.



## A woman wearing a black headscarf and red lipstick, with her hands raised in a gesture, surrounded by glowing red symbols on a dark red background.









Your newly acquired flexibility makes you more attractive than ever. On top of this, you receive a mysterious message from your EDM interface. Follow the instructions and be ready for a surprise that has nothing to do with your work – on the contrary!

December 2011																														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

[illegible]

February 2012																															
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-  Luck at work
-  Good day for making money
-  Good day for ventures of all kinds
-  Extra-lucky days in the respective categories



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