Stepper motors: the sky is not the limit
The range of pharmaceutical products is as diverse as the illnesses that they have been designed to combat. Each individual drug prescription issued by a doctor must therefore be dispensed to the customer precisely as prescribed. This demanding and time-consuming task requires the “hands-on” involvement of qualified pharmacy employees. A newly developed drug dispenser makes life much easier. Manual work becomes superfluous due to an intelligent automated storage, distribution and dispensing system. The system provides ready-picked “shopping baskets” in accordance with prescription input. This innovation is made possible by the use of powerful yet space-saving micromotors used as part of the distribution mechanism.

Responsible for the full range of tasks from mixing and dosing to bottling and packing, the pharmacist of yesteryear was the original manufacturer of the majority of drugs dispensed. How times have changed: today’s pharmacies operate as specialised distribution centres for ready-packaged drugs. In the majority of cases, a wholesaler will operate an automated order-picking system to facilitate the downstream supply of individual pharmacists. This saves both time and money, simultaneously speeding up customer service. Script Pro from Mission in Kansas, USA, has now transferred this principle to individual pharmacists. To ensure an efficient transition, the automated dispenser system was designed according to the dimensions of conventional shelf systems used to date. This naturally means that there are restrictions regarding the size of the mechanical components.
incorporated. Committed to excellence, the manufacturer decided to team up with micromotor specialist FAULHABER. The result: a tailor-made drive system for automated pharmacy distribution.

**Less is often more**

When it comes to managing a diverse range of drugs, large-volume storage is essential. Distributors also have to deal with various means of packaging, such as loose filling of pills in larger storage boxes or ready-packed larger units in boxes, jars or tubes. A distribution system must be capable of selecting, counting and transferring all of these units in a manner that is fail-safe. Dependent on their surface composition, pills which are supplied in bulk are susceptible to clogging or sticking. Therefore, any unit incorporated within a dispenser system requires a high level of torque to overcome the problem of clogging. In parallel, the movement must also be precisely dosed in order to transport individually counted pills as reliably as possible.

A miniaturised crane system proved a space-saving and cost-effective solution. The crane boom itself is the only component in the system that moves autonomously. It incorporates all the drives required – in the smallest space possible. In the system’s basic version, a crane boom operates in excess of 100 specially developed pill containers. The arm is driven into position in front of the storage container with an empty discharge box. A gearwheel at the bottom of the container is then driven over a crane jib gearwheel which acts from the front. Holes in the large supply gearwheel then open the way out for individual pills, i.e. into the dispensing box. Thanks to precise positioning of all components, this counting process is extremely accurate at 99.7%. Thus, on the one hand more space remains available for the storage containers as such and on the other hand the number of drives required is reduced dramatically. However, fewer drives also result in a higher load to the individual motor gear unit. Therefore, only robust, low-wear brushless motors with corresponding reduction gearing are an option for long-term use.

**Precision during continuous use**

Absolute reliability is essential, especially for pharmacists who have to cope with large quantities of prescriptions at hospitals and online pharmacists working round the clock. Here, the costs for the new system should naturally be kept as low as possible so that the investment pays off rapidly. Within this context, the system’s modular structure is a particular advantage. In addition to the basic version with 200 supply boxes solely for tablet dispensing, solutions are also available for tubes, packets and other packaging variants. In the case of high-throughput processing, the method of choice is to have the supply containers filled automatically. However, each individual function places different demands on the drive used. At the same time, a versatile drive solution is considered less favourable with regard to logistics, technical maintenance and size. FAULHABER was able to come up with a suitable solution in the form of durable, low-wear brushless motors with a 24 mm diameter – delivering high performance despite their relatively small footprint. Adapted controls in combination with flange-mounted compact gears can operate practically any torque or engine speed requirement within certain limits. Position indicators and encoders integrated in the drive allow precise alignment of all components. Different elements such as the threaded rod for the transport of pill boxes or the pick-and-place function for the crane jib boxes can thus be operated using the same motors. Only the gears and encoders vary. This translates into more efficient design and logistical processes – and reduces costs.

Modern micromotors are the perfect solution, especially where challenging requirements require a compact design. Here, FAULHABER technology comes into its own: precise positioning and reliable operations over many years. Even the demanding specifications applicable within the field of medical technology can often be met by means of standard drives or drives with minor modifications.

www.scriptpro.com
Stepper motors: the sky is not the limit

Clear, unjittered pictures and film shooting best succeed with the use of a tripod. Even if only taking photos whilst moving slowly, the picture may appear unclear. The distortion becomes more extreme if the camera is mounted in a vehicle or even an aeroplane. Photographic devices rely on additional stabilization especially in small aeroplanes as they provide little automatic damping due to their low permanent weight. Here, a gimbal-mounted, gyro-stabilized mounting platform is a perfect solution. However, weight is an issue, simply because the mini aeroplane or reconnaissance drone still has to be able to take off. Micromotors with adapted transmissions provide the solution for easy, reliable gyro-stabilization.
The use of unmanned aerial vehicles (UAVs), also known as drones, is often favoured in the military field to exercise the dangerous job of reconnaissance. One drone costs 2 to 5 million euros. However, smaller light and ultra-light drones can be acquired for much less – a few tens of thousands up to one hundred thousand euros. This is why other users such as cartographers, archaeologists and various industrial exploration concepts increasingly rely on these flexible reconnaissance planes. Unfortunately, the combination of small size and good value also translates into a low load capacity. Apart from the camera, the most important component for clear photos during a flight is the stabilized mounting platform. Normal stabilizers based on gyro-stabilization are too heavy for small aircraft. The Hood Technology Corporation, from Hood River in Oregon, USA, has developed a new lightweight design for this specific purpose. In cooperation with the drive specialist MicroMo, the North American FAULHABER Group company, it was possible to adapt gyro-stabilization for UAVs.

Weight reduction

In order to enable mobile drones, small aircraft or small helicopters with an average weight of only 15 kg to carry out their tasks for several hours, they must be able to remain airborne for a lengthy period of time. The more fuel required, the lower the overall capacity in terms of payload. Therefore, heavy gyro-stabilized mounting platforms are therefore simply out of the question. Modern CCD cameras are small, light and only require little electricity, which is ideal for the miniature aircraft. Thanks to significant progress made within the area of mechanics, too, the latest mounting platform to have been developed now boasts a considerably lower weight. Small mass combined with high velocity enables damping which is just as good as that of conventional heavy-weight “gyro-steamers”. Hence, the first mounting platform with a weight of as little as 500 g provides a stable basis for a load capacity of up to 200 g. Thanks to its gimbal-mounted attachment, the internally fitted camera guide can be moved for panning – independent of the stabilization. Power supply and data transfer operate via smooth-running collector rings. Miniature stepper motors ensure the required homogeneous gyro movement and sensitive controllable camera guide movement.

Step-by-step to engine speed

When it came to choosing a drive source for stabilization, only micromotors were among the possible candidates. The miniature stepper motors with an absolute encoder proved the best possible option for position feedback. If the command “move on one step” is given, the motor immediately moves on one step further. Within this context, friction in relation to the motor step output is negligible. If step commands are given in rapid succession, the motor effectively rotates continuously. When in operation, this “mighty midget” moves at about 10,000 steps per second, thus generating continuous motion. The high velocity is then reduced by a special, pre-loaded 1:200 transmission which is therefore backlash-free. This facilitates an unjittered angle speed of 90°/s on the rotation axle output end. The continuous engine speed stabilizes the payload perfectly with oscillating weight and the gimbal-mounted attachment.
Milligram precision

Microdrives ensure precise synchronisation of highly sensitive horizontal balancing machines.

Particularly in the case of small and micro components with sensitive bearings, absolute concentricity over the lifecycle of the device is one factor that cannot be underestimated. After all, the higher the speed and non-symmetrical weight, the greater the forces involved. Alongside vibrations, this leads to increased strain on the bearings and thus to premature wear and tear.
Micro Präzision Marx GmbH in Erlangen offers a horizontal balancing machine for testing the quality of small components that is specifically geared to the needs of such test subjects. Registering the slightest imbalance also means that the measuring pressures are very small, which is why every element within such test procedures must be adjustable to a high degree of precision. This is the only way to capture accurate data. With this in mind, the Erlangen-based balancing experts rely on FAULHABER motors for their drives.

**Universal means special**

There are many small rotating parts that have to be balanced: from rotors inside small motors and micromotors to ventilator drums and special rotating test mounts. This gives rise to a broad range of different shapes, sizes and speeds. The problem starts with even the “simple” rotors of electric motors, also known as armatures. Whilst wire-wound DC armatures made of dynamo sheet are non-magnetic, the armatures of modern, brushless DC-Drives definitely require an antimagnetic testing device. Eddy currents caused by ill-positioned metal parts also impair the testing procedure. This is where specialist expertise is called for. After all, these small parts require the highest degree of balancing precision, down to an accuracy level of a tenth of a milligram. The particular shape of the balancing machine is designed to deal with all possible types of test pieces, while special controls ensure the test conditions are exactly the same for every test piece within a product line. After all, every two-gram rotor of a micro turbine running at 400,000 rpm must be able to be balanced perfectly every single time. Highly accurate oscillation sensors combined with precise evaluation provide a solid basis for accurate readings. It is clear that such measurements can only be as accurate as the driving motor permits. Synchronisation, high speed and very good adjustability are the key things here.

**Test drive is also crucial**

Tests like these therefore require a drive that is reliable, capable of consistently high speeds and able to be adjusted to a particular revolution profile. The drive specialists at FAULHABER came up with a brushless DC-Servomotor of 35 mm diameter to meet these requirements. Preloaded ball bearings guarantee particularly quiet running. 90 Watts of power ensure highly dynamic performance for quick acceleration and braking. A high resolution encoder inside the motor housing and a programmable positioning and speed control complete the drive. Apart from its power supply (24 V DC), the standard features of this drive include an analogue input, an error output and an RS232 interface. The start module of the balancing device controls the direction of rotation and speed of the drive via these interfaces. These functions are complemented by a motor start/stop and speed display. The servo drive can accelerate test pieces to speeds of 40,000 to 80,000 rpm during the measuring process. Modern, brushless DC-Servomotors now offer a whole new range of options for the miniaturisation of measuring and testing devices. Depending on the user requirements in each case, standard drives, modified versions or custom drives for a maximum level of system integration may be the right option.
The weighing of small items at high throughput speeds calls for exceptional precision of all components involved. To ensure reliable processing, even the slightest deviation has to be detected with supreme accuracy. This demands a high degree of synchronized precision when feeding and removing the objects to be measured. The requirements of the industrial scale itself are even more stringent. Neither the conveyor belt nor the drive may cause any disturbing vibrations. Precisely controlled and smooth-running sine wave commutated DC-Servomotors are the perfect solution for such demanding tasks.
Industrial manufacturers often produce small, lightweight products in bulk. Fill quantities or completeness can then be conveniently measured using an industrial scale. In the majority of cases, they are mass-produced goods where both precision and high-throughput monitoring are critical for quality control. Weighing specialist Mettler-Toledo Garvens GmbH has developed its XS1 checkweigher specifically for this field of application. In cooperation with drive specialist FAULHABER, the weighcell was equipped with a smooth-running conveyor belt – including a controllable drive – that operates without adversely affecting the weighing process. Fast, jitter-free transport and precise weight detection are thus combined to provide high output performance.

**Fast weighing**

Law requires that many of the items produced day in, day out meet certain weight specifications. For example, the weight of various packaged goods in the food industry must be checked thoroughly after production. The dynamic XS1 checkweigher allows classification in up to seven weight classes. With a permissible maximum weight of 200 g and a resolution (accuracy) from +/-0.015 g, the smallest of deviations can be determined quickly and efficiently. An operator-friendly touch screen display listing requisite weighing data ensures easy setup and operation. Delivering proven functionality, the system includes automatic or manual zeroing and is designed for flexible integration in production lines. Additional features such as trend control for automatic filling process control, statistics, analysis programs, etc. provide the basis for process-specific adaptation. In order to feed the checkweigher with the required test pieces as quickly and reliably as possible, the overall system includes conveyor belts on both the infeed and outlet side of the actual weighcell transport belts. Their speed is synchronised with that of the weighcell transport belt. This ensures that the transport process itself has no disturbing impact whatsoever on the weighcell in a horizontal direction. Transport within the cell is subject to even stricter standards. Both the belt and the drive motor must run as evenly as possible in order to ensure the precision required for the actual weighing process. The system is equipped with an easily controllable, smooth-running dynamic DC-Drive. The special sine wave commutation reduces the motor torque ripple to a minimum and further increases the overall running smoothness.

**DC-Servomotor**

The sine-commutated DC-Servomotor has an output of up to 90 W under constant operation, bringing up to 160 mNm torque to the drive shaft. Pre-loaded ball bearings eliminate vibrations from the rotor, and the special design of the magnetic circuit provides the optimal magnetic flux path in the motor. In conjunction with the sine commutation, this results in very low torque ripple and exceptionally smooth-running. The motor is available in two versions: with serial or CAN-bus controllers. The integrated Motion Controller handles the following drive tasks if required, without resorting to external computer power: speed control, speed profiles, positioning operation, stepper motor operation and electronic gearing. Motor configuration parameters can be altered and saved on the OnBoard memory of the drive. What is more, the Motion Controller is responsible for monitoring the operating temperature and overvoltage. It also takes the appropriate “protective measures” in case of undervoltage in the power supply. Thanks to its integrated technology and bus connection, the drive is suitable for a wide range of challenging applications – without the need for bulky cable harnesses.

The sine-commutated DC drive with integrated intelligence is particularly suited for areas of application in which dynamic performance and high resolution speed control are paramount. Whether in decentralised automation technology systems or handling and tool machines, equipping the systems with their own intelligence and a bus connection for external communication is the perfect solution for tailor-made applications.
Automation and discrete applications increasingly rely on localised, compact direct drives. Conventional drive concepts for translating rotational to linear motion using DC drives are available but the smaller they become the more maintenance they tend to require. Pneumatic linear actuators, on the other hand, are easy to assemble but difficult to adjust. The solution to producing a compact, precise, yet simple and accurate linear motion system is the linear electric motor.

Linear motion is called for in many areas of technology. Whether powerful thrust or dynamic movement, precise positioning or maintenance-free operation over a long period is required – the demands on this equipment are as many and varied as the possible drive options. Leaving aside the more exotic operating conditions, only three construction types are really suitable for small actuators: pneumatic drives, small or micromotors with (spindle) gears and linear motors. After analysing the most frequent requirements in current use, FAULHABER developed a new micro-drive based on the principle of linear drive technology.

New take on a familiar principle
A linear drive combines the fast and simple adjustment of an electric system with the simple set-up of a pneumatic cylinder. As with micro-sized rotational motors special considerations for linear micro-drives have to be taken into account. But this is not necessarily a disadvantage. With the right engineering creativity, some

Innovative drive concept for linear movements

PROVEN DC-SERVOMOTOR TECHNOLOGY COMBINES POWER, PRECISION AND DYNAMISM WITH “MICRO DESIGN”
Innovative drive concept for linear movements great new opportunities emerge. Up until now, linear motors have been designed primarily as flat stage motors complete with cradle and guide – a format that is not necessarily suitable for every application. The Swiss micro-engineering specialists therefore opted from the start for a new, rotationally symmetrical rotor design. Together with a rectangular, slightly flange-mountable stator, this enables an almost universally applicable fit. The motor itself is contained within a non-magnetic steel housing. A self-supporting coil sits inside, along with the sleeve bearing of the rod made out of special slide-bearing material. Another board with electronics for the three Hall sensors that determine positioning is hidden under the top cover, along with the power connection. The rod, a high-precision sliding cylinder, is equipped with ultrastong permanent magnets. The stator measures just 12.5 x 19.9 x 49.4 mm (W x H x L) including power connection. The rotor bar comes in two versions, each 6.3 mm in diameter and 82 or 154 mm long. This makes stroke lengths of up to 20 or 80 mm possible, which is sufficient for many microdrive applications. Both motor components together weigh only 57 and 74 g respectively.

**Inner values**
The ingenious layout is naturally reflected in the key mechanical specifications. The continuous force of the rotor bar is 3.1 N, and as much as 9.4 N peak/drive force is available. Depending on the applied load, the speed of the 2nd version with 20 mm stroke is 176 m/s² or 18 times more than gravity acceleration, and even the speed of the 80 mm version is 92 m/s². Furthermore, the robust slide bearing of the rotor bar can easily handle speeds of up to 2.7 m/s. The allowable operating temperature range of the drive of −20 to +125 °C covers all the usual application areas. Despite such high-performance specs, the linear motor can be precisely adjusted via a Motion Controller. The resolution or smallest possible movement of the rotor bar is just 6 μm, and repeatability (maximum deviation on multiple movements of the same kind) is 40 μm. The three linear Hall sensors combined with the Motion Controller limit the maximum positional error, i.e. the difference between the set and measured position of the system, to 120 μm. As all values are determined solely electronically, mechanical tolerances, wear and tear and thermal expansion of components are of no consequence.
LINEAR MOTOR TECHNOLOGY

The new Linear DC-Servomotors LM 2070 series

The FAULHABER-developed Linear DC-Servomotors are the perfect choice for continuous duty linear motion sequences and positioning tasks. Available in two versions, the high-performance drive is controlled using either analogue Hall sensors or via sine/cosine signals.

- Compact and robust design
- Simple, virtually maintenance-free construction
- Quick installation and configuration
- High performance and dynamics, no cogging torque
- Outstanding power-volume ratio
- Smooth, constant axial travel over the full stroke length

The Motion Controller as a nerve centre

Specially configured motion controllers are the nerve centres of these new drives. This is the only way the mechanical potential can be correctly harnessed and controlled. The 4-Quadrant controllers work in a voltage range between 12 and 30 V DC with a PWM switching frequency of 78 kHz. The efficiency factor is an impressive 95%. There are two versions, which can provide an output of 3 or 6 A continuous output current respectively. Both controllers can be equipped with an RS232 or a CAN interface. They are therefore easy to connect, program and network. The useable speed range (corresponds to the engine speed range of rotating motors) is between 1 and 10,000 mm/s; the required encoder resolution with the internal Hall sensors is 3000 pulses on 18 mm. Up to 65,535 pulses are possible if an external encoder is used. The drive intelligence is provided by three inputs and outputs, some of which are freely configurable, as well as a memory for executable programs with 3.3 kWords (approx. 1000 commands). Other features include PI speed controllers for a high degree of synchronization, speed profiles and positioning operation or operation as a force controller using adjustable current restriction. Stepper motor operation, gearing mode (electronic gears), analogue positioning mode (position control on analogue voltage), analogue current option and external pulser as actual value transmitter are possible in the extended operational mode. A free FAULHABER software package (“Motion Manager”) includes extensive command sets and convenient programming functionality. The new, highly dynamic and very compact direct drive provides numerous advantages compared to traditional solutions. It is equally suitable for cyclic motion sequences and positioning tasks. Within this context, linear motion processes and positioning applications can easily be generated on a computer using the Motion Manager. The result: simple installation, fast programming and subsequent adaptation as well as a long service life.

www.faulhaber.com/quickshaft

Maximum force up to 27,6 N

<table>
<thead>
<tr>
<th>LM 2070-01</th>
<th>LM 2070-02</th>
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<tbody>
<tr>
<td>Continuous force [N]</td>
<td>9.2</td>
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<tr>
<td>Peak force [N]</td>
<td>27.6</td>
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<tr>
<td>Stroke length [mm]</td>
<td>40 / 120</td>
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<tr>
<td>Repeating accuracy [µm]</td>
<td>60</td>
</tr>
<tr>
<td>Precision [µm]</td>
<td>200 / 400</td>
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<tr>
<td>Speed [m/s]</td>
<td>2.6</td>
</tr>
</tbody>
</table>
**Electronically commutated**

Brushless Flat DC-Micromotors Series 15... and Series 26...

FAULHABER is extending its product range of flat micromotors to include electronically commutated versions – the perfect choice for applications with the area of equipment technology, medical and laboratory technology as well as portable battery operated devices, e.g. for pumps or fans.

<table>
<thead>
<tr>
<th></th>
<th>1509 ... B</th>
<th>1515 ... B</th>
<th>2610 ... B</th>
<th>2622 ... B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage [V]</td>
<td>6 / 12</td>
<td>6 / 12</td>
<td>6 / 12</td>
<td>6 / 12</td>
</tr>
<tr>
<td>Speed up to [rpm]</td>
<td>16,000</td>
<td>–</td>
<td>7,000</td>
<td>–</td>
</tr>
<tr>
<td>Continuous torque up to [mNm]</td>
<td>0.60</td>
<td>30</td>
<td>3.8</td>
<td>100</td>
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<tr>
<td>Max. torque up to [mNm]</td>
<td>0.97</td>
<td>50</td>
<td>7.73</td>
<td>180</td>
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<tr>
<td>Incl. spur gearhead/ reduction ratios</td>
<td>–</td>
<td>yes / 6 ... 324:1</td>
<td>–</td>
<td>yes / 8 ... 1257:1</td>
</tr>
</tbody>
</table>

1) Stall torque 2) Continuous torque, short-time operation

- Electronic commutation with 3 digital Hall sensors
- No cogging; excellent speed control characteristics
- Available as gearmotor with different reduction ratios within the same overall length
- For combination with FAULHABER Speed Controllers Series SC 1801
- Series 26... is available with an optional integrated Speed Controller

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**Index channel as standard**

Encoder Series HEM, HXM and PA

For micromotors ranging in size from 6 to 12 mm diameter, FAULHABER has expanded its range of servo components by three new encoder series.

<table>
<thead>
<tr>
<th></th>
<th>HEM3-256</th>
<th>HXM3-64</th>
<th>PA2-50</th>
<th>PA2-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage [V]</td>
<td>5</td>
<td>3,3 / 5</td>
<td>3</td>
<td>3</td>
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<td>Channels</td>
<td>2 + index</td>
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<tr>
<td>Rated current consumption [mA]</td>
<td>9</td>
<td>16</td>
<td>8,5</td>
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<tr>
<td>Pulses per revolution</td>
<td>16, 32, 64</td>
<td>32, 64, 128, 256</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Speed up to [rpm]</td>
<td>30,000</td>
<td>30,000</td>
<td>24,000</td>
<td>9,000</td>
</tr>
</tbody>
</table>

**HEM3-64**

- Mounting length only 4.5 mm
- Index channel for better control during positioning, as standard
- Adapter board with connector for flexboard available

**HXM3-256**

- Index channel for better control during positioning, as standard
- Optional design with flexboard connection, adapter board with connector for flexboard available
- Ideal for battery-operated applications

**PA2-50/-100**

- Opto-reflective system
- Suitable for battery-operated applications
- Combines with motors 6 - 8 mm or 8 - 12 mm
Having maintained a sales partnership for many years, French distributor MUVMO has now become part of the FAULHABER Group as FAULHABER France SAS. This latest assimilation project underpins the international focus and the consolidation of the FAULHABER brand.

In June of this year, the managing directors of FAULHABER Germany and MUVMO SA agreed the takeover of MUVMO ownership interests by Dr. Fritz Faulhaber Beteiligungs GmbH, thereby confirming their close working relationship and mutual trust. With the signing of the contract, MUVMO SA also changed its name to FAULHABER France SAS.

The FAULHABER brand is synonymous with an extensive portfolio of powerful, high-precision DC micromotors and micro-drives. Introducing and establishing the brand within the French market in the future will amount to another milestone on the road to international market leadership. There is no doubt on the French side of the deal that the assimilation agreement with FAULHABER represents the very best opportunity for the future in terms of the French market, the customers of MUVMO and the employees. Committed to expansion as part of a concerted effort, FAULHABER Deutschland and FAULHABER France SAS have already built a powerful team.

By opening another office in Switzerland, FAULHABER has underlined its commitment to service and customer proximity. In September 2009, MINIMOTOR SA signalled its intention to be even closer to its customers in future by establishing a new office in Biel in the west of Switzerland. Under the management of Nicolas Surdez, the office – in the same building as Faulhaber subsidiary MPS – will ensure FAULHABER products are sold and distributed even more efficiently.

The second Swiss branch also consolidates FAULHABER’s position within the European market and thus the company’s expansion plans. For MINIMOTOR SA, high quality levels across the board, local presence and the dedication of on-site experts are the success factors that will guarantee a strong position within the international business arena.
LOTHAR SPÄTH CONFRS “TOP 100” STATUS ON FAULHABER FOR ITS OUTSTANDING INNOVATION MANAGEMENT

Dr. Fritz Faulhaber GmbH & Co. KG is one of the 100 most innovative companies in Germany’s SME segment. That’s the conclusion of the latest “Top 100”, a national and cross-sector study of businesses.

FAULHABER’s innovation management earned recognition in the 17th round of the high-profile business initiative. Lothar Späth, former Minister President of Baden-Württemberg, conferred the coveted Top 100 hallmark on the Schönaich based company at a special ceremony held at the Gästehaus Petersberg hotel in Königs-winter. The mentor behind the mid-market initiative thereby paid tribute to FAULHABER’s achievements in the categories of “Innovation-promoting management”, “Innovation climate”, “Innovation marketing”, “Successful innovation” and “Innovative processes and organisation”. In the latter category, FAULHABER managed to secure a top 10 placing. According to the Top 100 analysis, the company demonstrates particular innovative flair in its creative workshops and its “innovation days”, on which employees make use of a special creative space with numerous technological prototypes. Since the company’s innovation management system underwent a full restructuring process around two years ago, staff have been contributing at least one new product idea per week on average, with bonuses paid for suggestions. A dozen or so of these ideas are now being pursued and realised. The innovation process is structured in such a way that the learning benefit produced by technological development is considered as important as the product itself. In other words, a concept that is not subsequently realised is not regarded as a failure, but will ideally point the way towards implementation of the same product idea by an alternative approach. To qualify for the award, FAULHABER was required to pass a stringent two-stage assessment by the Vienna University of Economics and Business. The Top 100 of the 319 entrants included 54 national market leaders and 22 world leaders in their fields of activity. FAULHABER has proved that when it comes to innovation, the company ranks with the best that the SME segment in Germany has to offer.

WWW.faulhaber.com/top100
More info? Our pleasure!

Company
First Name, Last Name
Dpt./Position
Street
Postal Code/Town
Phone
Fax
E-mail

☐ Please remove my name from your mailing list
☐ In future, please send me “FAULHABER info” as an electronic newsletter (instead of the printed version)

Simply complete this form and fax it to us: +49 (0) 70 31/638-83 22.

Drive Systems catalogue 2009-2010
Comprising more than 350 pages, the latest FAULHABER catalogue includes details of our extensive range of miniature drives and micromotors. Featuring well-presented performance tables and comprehensive technical data, the new catalogue is a highly efficient information guide when it comes to selecting the products best suited to your field of application.

Drive Systems
☐ Catalogue 2009-2010
☐ Abridged version

Hagar the Horrible

IT SAYS: “CLOSED FOR THE WINTER. TRY STORMING OUR VILLA IN SOUTHERN ITALY.”