impulse

VEM Sachsenwerk GmbH · VEM motors GmbH · VEM motors Thurm GmbH · Keulahütte GmbH

Issue 01/2006 · Information for our customers · www.vem-group.com

Smoke extraction motors
Special drives for use at high temperatures

PAGE 3

Traffic equipment
Sachsenwerk - supplier to Polish Railways

PAGE 4

Investment
New blasting equipment for castings in Keulahütte

PAGE 5

Solutions to tasks of the future

INNOVATION *VEM presents technical competence and best engineering in Hanover*

This graphic welcomes visitors to the VEM exhibition stall at the Hanover Industrial Fair.

VEM Group. "Classics and Innovation" is the motto chosen by the VEM Group for its presentation at the Hanover Industry Fair from 24 to 28 April. At the VEM Fair Stand in Hall 11, visitors can get a first-hand impression of the successful development of the Group. It is exactly 120 years ago this year that entrepreneur Oskar Ludwig was instrumental to the development of electrical machines in his factory in Dresden and by this laid the foundation stone of today's VEM Group of companies.
"Classics and Innovation" is also the guiding motto of a development that incessantly brought forth new products from companies of the VEM Group in the past decades. The first hydropower generators in Germany in the early 1920s were part of this, some of which have generated power in the hydropower station in Mittweida in Saxony, Germany for 80 years. Among the technical and technological top-rate achievements also were the world's first series of standard motors and motors for the first electrically powered trams in Dresden during the 1930s.
The innovation which make VEM very much a talking point today include rolling mill drives, large pump motors, wind power generators and traction machines for traffic equipment, compact drives, memory motors and roller conveyor motors with shaft height of up to 400 mm, water-cooled gray-cast motors and motors for potentially explosive atmospheres.

Visit us at Hanover Industrial Fair 2006
24 to 28 April
Hall 11 Stand B08
daily from 9 a.m. to 6 p.m

Advantages for customers

Permanently excited low-voltage motors, which VEM presents at the world's greatest industrial show, are in line with the current development trend and set standards. These products also help the VEM Group strengthen its position in the growth markets of the world, such as the Middle East or China.
These examples illustrate the advantages our customers can gain from cooperation with the VEM Group. The Group is not only a full liner for electric drives with shaft heights from 56 to giant special-purpose machines, VEM is also one of the few suppliers in Germany to offer plant constructors in the process industry the complete electrical package from a single source, even for large projects. The high degree of vertical integration in the companies of the Group is the basis from which VEM is able to respond to customers' requests quickly and with flexibility. This ensures the electric motor suppliers in Dresden, Wernigerode and Thurm a stable position in the market so that they can have an important say in drive technology innovation at this year's leading Hanover ENERGY Fair.

Energy efficient drive equipment

INNOVATION *Price development and environmental awareness are energy savers in the development of new products*

VEM motors. The most recent explosion of energy prices has proved the forward-looking corporate politics of VEM and the growing environmental awareness right: VEM motors became a signatory of the Voluntary Agreement (VA) of CEMEP as early as in 1997. The objective of the agreement was, between 1998 and 2003, to reduce by 50% the number of motors in efficiency class EFF3. Since 2003, the VEM Group of companies has been an endorser of the Motor Challenge Programme of the European Union. VEM understood the challenge was, together with the customers (primarily OEMs), to advance the use of energy optimized motors and drive systems and threby reach the principal target of the programme, i.e., maximum saving of energy in the whole process.

Pump drive

This also set the framework for the development of our own products. Since 2001, VEM has not made any motors of efficiency class EFF3. The proportion of motors in efficiency class 2 is more than 95 %. Motors with the highest efficiency class EFF1 have a comparatively low share in the total output.

In September 2005, the EEMODS conference arrived at roughly the same conclusion and stated the same reasons for the low share of

Ctd. page 6

EDITORIAL

Dear readers,

the VEM Group with together 17 organizational units – factories, subsidiaries and Competence Centres – has continued the process of consolidation and achieved a satisfactory overall result in 2005.

When, during the reorganization and restructuring phase of the last few years, the positive development of the companies had been supported by a coherent strategy, a capable management, a fair corporate culture and motivation of the workforce, the Group reached the break-even point in 2001.

Up to that time, investment in the companies had remained low-key.

During 2004/2005, more and systematic investments were made in plant and buildings after the Group's units had prepared, both organizationally and technically, to turn the investment to good account for the market quickly.
In 2005, total investments in the Group amounted to EUR 2.5 million. All investments were guided by the corporate objectives:

- focus on niche markets with small lot sizes;
- high technical level in customer service with rapid implementation of special design solutions
- highest delivery reliability due to high vertical integration.

The equipment in which investments were made in 2005 runs in 2 or 3 shifts. All required relocations were completed without reducing output and with high utilization of capacity by our workforce in the factories in

Ctd. page 2

A new terminal box goes on stream

ENGINEERING *400 A, series B for potentially explosive atmospheres replaces earlier version*

VEM motors. The development of terminal boxes 1000 A and 630 A marked the beginning of the redesign of the termination concept of VEM motors GmbH. The new terminal boxes, which give the customer a more generous space for cable termination, have stood the test of industrial application. The serialized introduction of the 400A, series B, Ex e II terminal box consistently continues this development.
The suitability of the terminal box for potentially explosive atmospheres has been established according to DIN EN 60079-0:2004 and DIN EN 60079-7:2004 and the 4th supplement to the EC type examination test certificate IBExU00ATEX1051 U of 21 December 2005 for the following use:
Protection type "Increased safety e"
Device group II
Device category 2G.

Version with KM10/8 up to 70 mm² terminal cross-section

The terminal box is also used in motors of protection type "Non sparking" according to DIN EN 50021 and DIN EN 60079-25:2004, resp. and in motors of VIK design (VIK recommendation 04.2005). Depending on the rated output and the rated voltage, terminal boards KM10/8 and KM16/12, resp. can be used for the explosion protected design. The new terminal boxes completely replace the explosion-protected terminal boxes type 400AV, K1X 400 A and K2X 400 A.

Standard motors without explosion protection use terminal box 400A, series B, with terminal boards KM 12 and KM 16. This design will also replace terminal box VGK 400 with cable sealing glands to the extent this is possible in view of the greater overall height of the new design. The new terminal box has degree of protection IP65 and is permitted for ambient temperatures from -35 °C to 55 °C. The standard version uses screwed cable glands of size M63 x 1.5, optionally up to 2 x M80 x 2 is possible. More detailed information is available in sales bulletin 01.2006 from VEM motors.

DISTINCTION

High award for Dr. Adolf Merckle

VEM Group. The Cross of Merit First Class of the Order of Merit of the Federal Republic of Germany was bestowed on Dr. Adolf Merckle on 28 October 2005. Dr. Merckle received the high distinction from the hands of Günther H. Oettinger (left), prime minister of the state of Baden-Württemberg, during a reception at Villa Reitzenstein. A small circle of close collaborators of Dr. Merckle was present for the occasion. Handing over the award, the prime minister stressed the commitment of Dr. Merckle, who had been born in Dresden and whom the prime minister called a "thoroughbred entrepreneur", to the development of the eastern German states and the wide spectrum of his voluntary activities.
The employees of the VEM Group congratulate Dr. Merckle warmly on this high distinction.

EDITORIAL

Ctd. from page 1

Krauschwitz, Thurm and Dresden. Respect and many thanks for your commitment!

That was good news. The prices of copper, steel, scrap iron and energy have gone up dramatically since the end of 2004. Since the incomprehensible decision of the previous German government to shut down all nuclear power stations in Germany, the price of energy has gone up 11 times for the factory in Krauschwitz alone. Gas prices also are rocketing. All our efforts to improve the result for the years 2004/2005 were in vain due to government decisions beyond our control.

In cooperation with our customers, our staff in distribution has succeeded in agreeing on additional charges for copper and material to take some cost pressure off the production units. As a step countering the extreme cost load, investments scheduled for 2007 were advanced into 2006 to be able to profit from an early effect of rationalization and keep costs under control. In addition, the distribution sectors will improve the quality of revenue in some areas. First talks have indicated that fair price adjustments are possible. Purchasing will also be able to make a contribution again.

Finally, the efficiency of the placement of personnel should again be looked at in all factories, subsidiaries and Competence Centres. Our target to maintain our regular workforce in Germany at the numerical level at which it is today is not affected by this and will remain the basis of our corporate culture. In the near term, HR management will make an analysis of the professional training and efficiency of all employees at workplace level and act where necessary. The target is, by possible redeployment to further increase the operating performance and promptness of the "VEM" system as a whole.

I am looking ahead of clearing this new hurdle together with you. We will make it again!

Yours, R. von Rothkirch

„WASSER BERLIN" 2006

EXHIBITION *Keulahütte presents "Epoxy resin powder coating"*

Keulahütte. This year, "WASSER BERLIN", the world's Number One event for water and waste water, will take place in the German capital from 3 to 7 April. After the successful participation in the world exhibition for environment and waste disposal, IFAT, in Munich last year, the Krauschwitz company now has the "water exhibition" on the agenda. In a way, it is a home match for them because despite good initial results in northern, western and southern Germany, Mecklenburg-Western Pommerania, Brandenburg/Berlin, Saxony Anhalt, Thuringia and Saxony remain the principal markets for the company. At the same time, this exhibition is an ideal platform for new contacts on the international level on which Keulahütte has established itself for a number of years and where it expects to grow further. Keulahütte will again present itself with a very modern outfit on "Epoxy resin powder coating" at stand 130. hall 3.2.
Traditionally, a Lusatian Evening will be organized at the exhibition stand during the event.

Date of the Lusatian Evening: from 6 p.m. on 5 April 2006.

People at Keulahütte prepare the evening with commitment and diligence. Lausatian specialties promise to be a treat to the ear and a culinary delight.

WASSER BERLIN 2006

Keulahütte will have a modern exhibition stand at the world's biggest industrial event for water and waste water.

VEM ACTIVE

Economic cooperation in the Near and Middle East

VEM motors. The present situation in the Near and Middle East is one of strong religious and political conflict. An essential element to cope with the situation is a certain level of communication and exchange of information. So the regional conference of Gulf State ambassadors was held in Berlin on 16 February 2006 in connection with a meeting of the executive committee of the Near and Middle East Association (NUMOV). Jürgen Sander, managing director of VEM motors (right) and member of the executive committee of NUMOV, was one of the participants.
At the evening event, in particular, which was attended by nearly all accredited ambassadors, federal economics minister Michael Glos (centre) explained the position and approach to cooperation. In his talk, the minister discussed concrete opportunities of improving the situation which, in any case, included the continuation of economic cooperation.

In the ensuing talks, many of which were highly personal, the topic was discussed in further detail. VEM maintains traditional ties of economic cooperation in most of these countries.

Extreme load cases to be computer-simulated

PROJECT *SIMU – Wind working group to discuss the dynamic behaviour of wind power systems at 4th status meeting*

VEM Sachsenwerk. In the global growth market for wind power systems, VEM Sachsenwerk has become a leading supplier of high-output systems both for double-feeding generators with slip ring rotor and modern synchronous machines. The company also has several years of experience of the SIMU – Wind project, whose final report will be submitted at several international conferences next autumn.
Under the general management of Dresden Technical University and Aachen Technical College, the project combines in a working group the leading component suppliers of wind power systems in the German market and wind turbine manufacturers, measuring institutes and software suppliers for modification and customisation of simulation software.

Tests for extreme load

With the support of the successful turbine supplier Repower Systems AG from Hamburg, the dynamic behaviour of wind power systems and the loads to which each component is exposed are studied. As a result, a theoretical model will be developed for testing extreme load cases in the computer.

The project members met for their 4th status meeting at VEM Sachsenwerk in Dresden on 30 November 2005. Among other things, they discussed mechanical and electrical measurements made under normal conditions and under extreme loads in the field during the last few months. Data obtained from the tests was combined and harmonized with the specific information provided by the component manufacturers. The data will be integrated in simulation models for the mechanical part (TH Aachen) and the electrical part (TU Dresden) of the project. The results available so far show a high level of agreement between the simulation results and the actual processes at wind turbine systems in the field.
For VEM Sachsenwerk, in addition to detailed know-how of the interaction of the generator-converter system, the results of the mechanical simulation are of extraordinary importance. For it is very important to study mechanical stress, e.g., vibrations, in the context of the required lifetime of a generator. The new know-how will enable Sachsenwerk to strengthen its leading position in the market of future generators in the multi-megawatt segment.

Standing the test of extreme enviroments

The VEM Group supplies customers with a full range of special drives for use in conditions of high ambient temperature

VEM Group. Motors with the ability to withstand high ambient temperatures are needed in many industries, e.g., in glass making, for rolling mill drives, tunnels, in vehicles, industrial furnaces and many other areas. The companies of the VEM Group have produced, developed and improved motors that meet these requirements in high quality for many years.

The range of these motors includes smoke extraction motors of the type installed in tunnel ventilation systems. In normal service, these motors work as normal fan motors removing exhaust gas and dust and supplying fresh air. If a fire breaks out, when ventilation is vital to save lives, these exhaust systems must be able to remove smoke and hot gases for a defined period of time. The smoke extraction motor is the only suitable and approved type. VEM produces them in four different classes, from F200 to F600.

Another field of use is glass-making for which special drives for ventilation systems from VEM motors are used. These motors are suitable where the input shaft is exposed to temperatures of 600 °C or more. Developed from a shaft material with very high temperature resistance, these products give smooth service of high quality. Depending on service conditions, these drives, which are of mature design, can be provided with a relubrication system of the gear-side bearing. Thus, a compact product with temperature barrier suitable for fan motors in extreme environments was developed. In addition to the reliability of these drives, customers appreciate the robust design of these motors. They have long life and need little maintenance. The attractive design is not the least point which makes these motors sell well in the market.

Another striking example is the rolling mill industry with its specific requirements in production. In this area, VEM motors was able to make a name for itself, particularly with 3-phase asynchronous motors. The company facilitated the new trends in materials research and development and was able to significantly enhance the technical feasibility of these motors for the customers. In the rolling mill, extreme ambient conditions such as radiated heat, high room temperature, aggressive coolants and additional electrical stress, exist. Radiation temperatures of several hundred degrees centigrade are not infrequent and ambient temperatures of up to 80 °C are normal. Plus the case that if the rolling stock clamps in the mill, temperatures at the winding of the drive units can exceed 200 °C.

FOR EXAMPLE *Furnace ventilation motors for the glass-making industry*

Foto: Sabine Hartenstein

Oven fan motor type K21R112M2

VEM motors Thurm. Bottles and glasses, electric bulbs and mirrors, shatterproof glass or cables are only a few of the virtually innumerable uses of glass. This versatile material is produced from quartz sand, lime and soda. The technology has become ever more refined in the course of six thousand years. Today, the production of hollows, plate glass and special glass requires highly technical machinery and equipment. Special glass-making machines comprise cooling lehrs, roller bed lehrs, pattern burning systems, mould heating ovens and other special equipment.

A well-known supplier of machines for this industry is HORN Thermoprocess Machinery GmbH. VEM motors supplies oven fan motors to that designer and supplier of peripheral equipment for glass making and thermal process engineering. The motors are installed in lehrs, for example.

These machines provide controlled cooling of glass products after moulding. In this process, strain induced by the different temperatures at the surface of the glass and inside the glass is relieved; if it was not, the glass would break into pieces. Cooling lehrs are gas-fired or electrically heated ovens with zones whose temperatures are controlled within close limits. During the cooling process, it is important that the decrease from the highest stress-relieving temperature (about 550 °C) to the lower stress-relieving temperature (about 480 °C) is slow and controlled. The oven fan motors from VEM motors work at temperatures of up to 650 °C at the input shaft; they circulate the hot air in the oven and distribute it evenly to ensure proper stress relief in the glass. These motors consume little energy and have excellent insulation. They drive the wheel of the oven fan directly so that no belt drive is needed. Thanks to their mature technology, they work reliably, are less susceptible to trouble than V-belt drives and are long-lived. The customer's special wishes can be integrated in the design of these motors without any problem.

Oven fan motors from VEM are also installed in the mould heating and pattern burning ovens. In the mould heating ovens, the glass moulds are heated to working temperature. Their purpose is to burn coats in the moulds. Critical aspects again are the uniform distribution of the temperature in the oven, low energy consumption, high reliability and long life of the motors. VEM supplies them in sizes 71 to 132. The same features have been designed in VEM oven fan motors for installation in pattern burning ovens. They are used especially for patterning, stress-relieving and cooling of hand and machine blown glass. Colour patterns are burned in bottles and other glass products in these ovens.

Foto: HORN Thermoprocess Machinery GmbH

A pattern burning machine in which patterns are attached to bottles and other types of glass

FOR EXAMPLE *3-phase asynchronous motors for high temperature service*

VEM motors. VEM motors has been a supplier of rolling mill drives for many years. In rolling mills, radiated heat of several hundred degrees centigrade and ambient temperatures of up to 80°C are common. If the rolling stock clamps in the mill, temperatures at the winding of the drive units can exceed 200 °C. Conditions similar to these exist in the fairly recent field of smoke extraction motors. The insulation system and the thermal stress of the motor bearings are designed for similar ambient conditions.

The DIN EN standard 12101-3 for mechanical smoke and heat extraction systems has been in effect since June 2002. For VEM, this meant that motors requiring an official inspection certificate had to be developed for installation in buildings and other structures in which smoke occurred. These include buildings with high person frequency, such as shopping centres, high-rise buildings, discotheques, recreation centres, cinemas, airports, parking buildings, but also industrial structures, road and rail, including metro, tunnel systems. The ventilation systems should be efficient under normal operation conditions. At the same time, they should not fail when exposed to the very hot smoke and gases of a fire. The drive units must function reliably for a certain time even at ambient temperatures of 400 to 600 °C to keep the escape routes of the affected persons and the entry routes of the rescue staff free of smoke.

Smoke extraction motor in service

According to EN 12101-3, these motors are grouped in classes from F200 to F600. Insulation systems, bearings and the terminal equipment ensure that the proven series K21R/K11R from VEM motors keep up service for one or two hours at temperatures between 200 °C and 600 °C. If customers have different needs, these can also be met.

In class F200, the installation dimensions correspond to rated output of DIN EN 50347. Rated output is reduced in some cases for classes F300 and F400. The reason for this reduced rated output is in the use of braided winding wires which reduces the possible slot cross-section of the motors. Output data always is for self-ventilated motors of cooling type IC 411. in motors without motor-specific self-ventilation in jet fans (cooling type IC 418), the motor cooling is provided by the unit fan which provides a substantially higher cooling air flow. This makes higher output possible. In this case, the motor design is customized.

In case of fire, the insulation systems of smoke extraction motors is exposed to temperatures which in some cases causes disintegration of the material. Depending on the stress temperature, materials of heat classes F, H or 250/IEC85 are used.

The certificates for smoke extraction motors are issued by notified bodies. At present, VEM motors works with the research and test laboratory of the chair for building climatics and HVAC of Munich Technical University, the test laboratory „cticm station d´essais“ in Metz, France and the materials testing institution for the building industry (iBWB) in Braunschweig, Germany.

Numerous successful customer unit tests for different fire classes have been made. The tested output range is up to 355 kW 4-pole.

Traction motors for electrified railways in Poland

TRAFFIC EQUIPMENT *Sachsenwerk motors with most advanced technical solutions*

VEM Sachsenwerk. When the first contact with the Polish rail vehicle supplier PESA Bydgoszcz was made in 2003, nobody knew that one day this would develop into a strong and successful partnership. That traditional rail vehicle maker is the successor of a former repair facility of the Polish state railway company PKP and was known to VEM mainly as a specialist for modernization of diesel locomotives and railway rolling stock. From about the end of the 1990s, PESA began to specialize in the development and production of diesel electric train sets, so called rail buses, and diesel-powered inspection vehicles. The company from Bydgoszcz exhibited its first series EN 95 4-part electric train set at "InnoTrans 2004" in Berlin.

Electrical rail bus EN 81

EN95 for Warsaw's commuter company WKD

This train, built for the Warsaw commuter firm WKD, travels at 120 km/h and is equipped with latest technical solutions, which includes the motors. Here PESA decided for the forced-ventilation VEM asynchronous traction motors DKLBZ 0910-4 with 280 kW output each, similar versions of which were installed in over a hundred E-Talent train sets in Austria.
If for 600V overhead traction line the insulation of the motors was still a routine job, the next joint projects turned out to be a little more sophisticated: At first, PESA won an order for the production and supply of one-part electrical rail buses. These buses run on the little frequented 3kV electrified main and branch lines of PKP. The rail buses are of light weight and have only one running and one traction bogie. The latter is fitted with two motors type DKLBZ 0910-4A. However, these motors are rated for 2,200 V, which is quite unusual and makes heavy demands on the motors' insulation system.

Trains for high-speed lines

The fact that PESA was able to develop modern trains for advanced high-speed lines and win over well-known competitors was noted by the industry latest when an order for the supply of 11 electrical Inter-Regio train sets was won. These trains will run between Warsaw and Lodz at speeds of up to 160 km/h. With traction motor DKLBZ 3112-4, VEM Sachsenwerk submitted the best technical proposal and was awarded the project.
With an hour rating of 650 kW, these motors are at the top end of the wide range supplied by VEM for electrical train sets. The electrical specification and design make it possible to modify the motor for use in similar vehicles with little effort.

Attraction to the townscape

One more success came to Sachsenwerk at the end of 2005 and allowed it to profit from the many years of experience as supplier of tram drives. In December 2005, PESA placed a first order for the delivery of 24 traction motors for the new 3-part City-Tram of the northern Polish city of Elblag. The tram travels at maximum 70 km/h and can carry over 120 passengers. The modular design of the tram supports a number of versions in terms of length and passenger capacity thereby meeting the different requirements on an efficient means of transport.

Inter-Regio train set EZT

PESA CITY tram

With its modern appearance, the tram will be an eye-catcher for local traffic and add attraction to the townscape of Elblag.
We wish our customer PESA Bydgoszcz success in the development of new markets and the development of innovative vehicles also in future. VEM Sachsenwerk will always have the fitting traction motor.

VEM motors develops special motor in aluminium die-cast design

ENGINEERING *Continuous electrical variable-speed drives in process automation*

VEM motors Thurm. Drives are omnipresent in industry. In process automation systems, they control the flows of material, mass or energy by changing the setting of valves, gates, throttles, etc. A special motor of aluminium die-cast design for application as valve servo-drive in pipeline systems has been developed by VEM motors Thurm. The motor is available in sizes 71 to 112. Motors of this type are used as linear or pivot drives and must be able to work continuously and give reliably service under extreme conditions of high dust load or the impact of water.
The Contrac linear drive type RSD20 uses special motor type BD0O 80 G 4.

Successfull solution

The individual performance limit and the behaviour of the motor are matched with the motor-drive combination selected. The attached spring force brake enables instant blocking in case of power outage or interruption. During continuous positioning, the drive is permanently supplied with energy and tracks the setpoint compensating even minute deviations.
The 3-phase asynchronous motor with squirrel cage is a major component of the variable-speed drive with its large number of different functions. This solution has been successful in a multitude of drive applications throughout the world for decades. The reasons for the success are simplicity of design as well as proven robustness and reliability. The decision in favour of the newly developed special motor was made because it is known for its reliability and safety of operation also for the new generation of drives.

Special features of the aluminium pressure die-cast motor

- electrical dimensioning for stall protection
- high load torque at small motor rating
- special flange
- robust drive
- long life

The Contrac linear drive type RSD20 is mounted on a control valve. This drive has a rated power delivery of the actuator of 20 kN and a rated actuating speed between 0.1 and 7.5 mm/sec. With a maximum stroke of 300 mm, the drive weighs about 85 kg. Our motor powers the internal rotate/linear transformation assembly which is mounted on the push rod and moves it.

Foto: Sabine Hartenstein

NEWS

Turkish market launch

VEM motors. The steel industry is becoming an increasingly successful industry for VEM. After rolling mills mainly in Germany, Europe and Asia were supplied with VEM motors during the last few years, we have now successfully launched our products in the Near and Middle East. VEM motors has secured several orders for the delivery of roller conveyor, brake and slip ring rotor motors for three projects in Turkey. For example, VEM motors will supply over 700 drives for a rail and section mill.

First shipment for the three projects will already be made at the end of the first quarter of 2006.

PARTNER

New distribution partner in Switzerland

VEM Group. The sale of VEM low-voltage motors in Switzerland will in future be organized by ELEKTRON AG. A contract to this effect was signed by representatives of the two companies early in February 2006. At the same time, the Swiss agent held contact talks at VEM Sachsenwerk which centred on cooperation in the identification and focusing on large projects in Switzerland.

ELEKTRON AG had been formed in Zurich in 1951. With 70 employees at the facility in Au, the company has become one of the best-known trading, service and engineering firms in Switzerland. The corporate policy focuses on the establishment of long-term partnership with customers and suppliers: engineering is a major item of the company's business transactions. The firm is active in the fields of drive equipment, lighting, components and networks. The company has several decades of experience, particularly in drives. Earlier, ELEKTRON had been the Swiss agent for another German motor supplier.

In drives, ELEKTRON AG concentrates on services such as consulting, engineering, planning and design, commissioning and customer service. This includes the submission of proposals for individual, package or system solutions, including automation, the dimensioning of drives and the adoption of system responsibility. The company has experience in the development of solutions in materials handling equipment, technology and process engineering.

The new agent strengthens the VEM presence in Switzerland further and adds to the level of awareness of the company and the quality of its products in that country. The quality of market development and the Swiss customer care will also be on a higher level. More information at:
www.elektron.ch

Flexible treatment for powder coating

INVESTMENT *New blasting equipment for castings reduces the production time of valves, fittings and moulded parts*

Keulahütte. Powder coating, a highly productive robot-assisted corrosion protection method introduced in July 2005 has been reinforced with another component. An overhead conveyor blasting unit cycled with the fluid bed powder sintering system cleans castings directly before they are coated. This improves the quality of the coating. Besides, the higher useful properties are a competitive advantage.

Also part of the blasting system is a special inner blasting machine for blast-cleaning most complex internal configurations. By supplying blanks from stock, the customer has the advantage of receiving moulded parts with the type of coating that is best for the intended application on short notice. All phases of the coating process are concentrated in the mechanical department so additional transports are avoided and the blasting units of the foundry shop are optimised exclusively for the fettling process.

Foto: udo Müller

The new overhead conveyor blasting unit in Keulahütte

Preceding the installation of the new blasting equipment were extensive tests for the identification of the best possible design of the machines and the blast compound. With the new unit, castings stored outdoors for several months or with old coats sticking to them can be cleaned to the standard degree of Sa 2.5 in a couple of minutes. This makes them suitable for subsequent coating. Because the equipment is integrated in the mechanical machinery hall, the noise level of the machine had to be reduced significantly and the filters adapted to the available environmental conditions. It was only natural that motors from VEM played a major part in this process. Two shot blasting wheels powered by 14 kW and the available impingement equipment produce the uniform blasting pattern overleaf. The blasting unit is linked directly with the fluid bed powder sintering system and is also controlled by the operators of the latter.

EVENT

Electric drives are the topic of the 5th Technical Day in Wernigerode

VEM-Gruppe. In September this year, our customers can attend the fifth "Technical Day" in Wernigerode. The Technical Days of the VEM Group with possibilities to discuss research results and development trends among manufacturers and users of electric motors have become a fixed entry in the diaries of many customers and partners.
The topic this year is "Electric drives for industrial use – advantages and requirements of motor/converter and motor/starter combinations under the aspect of global application". We expect that the event will again be a platform for the exchange of experience among manufacturers and users of drive solutions at global scale.
Like the years before, researchers and experts of electrical machine building can meet as peers too present and discuss their findings, visions and assumptions.

Venue:

Kultur- und Kongresszentrum (KIK)
Wernigerode
Ramada-Treff-Hotel

Date:

12. & 13. September 2006

Fotos: Karin Wagner

The participants of the 4th Technical Day are seen on a tour of the production hall of VEM motors in Wernigerode. A snapshot showing the participants in front of Wernigerode's famous town hall was a social 'must'.

Product training of the sales organization

VEM motors. On 15 March 2006, the members of the sales organization of VEM motors informed themselves of the latest developments in the products and drive technology segments. The event helped improve the participants' technical competence and the quality of consulting services and cooperation with the customers. This is important because the share of new products from the factories in Zwickau and Wernigerode is over 20 per cent on average every year.

These product training events have been organized in the factories in Zwickau and Wernigerode for a number of years. In addition to new products from the factories themselves, international development trends in electrical machines and electrical drives and their impacts on the product portfolio of VEM are discussed. The fact that the participants represent different sales areas often gives rise to interesting questions which, in turn, are considered in the work of the development departments. A tour of the production department completes the product training.

At the most recent product training event in Wernigerode, participants informed themselves on latest developments and trends in the standardization of explosion-protected motors, new possibilities of modification of VEM products and the exhibitor profile of the Hanover Industrial Fair at the end of April 2006.

FAIRS

2006 titbits

VEM-Gruppe. Innovation drive, performance potential, quality awareness – the companies of the VEM Group will again provide proof of these criteria at international fairs and exhibitions this year. The top entry in the exhibition diary is the VEM presence at the Hanover Industrial Fair in April (see page 1). Keulahütte will also be an exhibitor at the "WASSER BERLIN 2006" exhibition in Berlin in April (see page 2).

EXPEC 2006
VEM participates in the 2nd International Conference and Exhibition for Explosion Protected Devices in Shanghai, PR of China, from 11 to 13 May.

ACHEMA 2006
As leading event for suppliers of the chemical industry and all conversion industries, the international exhibition congress for chemical engineering, environmental protection and biotechnology will take place in Frankfurt/Main from 15 to 19 May. VEM will occupy fair stand H25-H26 in hall 9.1.

WindEnergy
The leading international exhibition of the wind industry, which takes place every two years, opens its gates in Hamburg from 16 to 19 May. The core topics will be financing, export and offshore technology. Visitors can find VEM at stand 221 in hall A1.

InnoTrans
The international specialized exhibition for traffic equipment and innovative component vehicle systems is scheduled in Berlin from 19 to 22 September. It provides a platform to national and international suppliers and buyers of passenger and goods transport systems. You can find VEM at stand 103 in hall 2.

The BIG 5
VEM will also take part in the convention of building industry firms (?) in the Middle East at the International Exhibition Centre in Dubai, United Arab Emirates, from 28 October to 1 November.

VEM-SUBSIDIARY

Swedish subsidiary with new name

VEM motors. The Swedish subsidiary of VEM has been operating under a new name since January 2006. The firm taken over under the name of VEM Nordisk Elektra AB three years ago will henceforth be known as VEM motors Sweden AB. The new firm name is the result of a consistent development with the target of improving sustained local presence and technical competence. The focus is on the management and expansion of existing business relations and the development of OEM and project business.

Large machines on the advance

RESUME *Twin drives strengthen the Sachsenwerk image as a supplier of special-purpose machines*

VEM Sachsenwerk. In addition to the traditional product lines, such as traction machines and wind power generators, the books for VEM Sachsenwerk contain more orders for large machines. These products mostly go to buyers in the steel and rolling mill industry, cement industry and shipbuilding.

Highlight twin drive

The present highlights of the firm in Dresden are two twin drive units with up to 8.5 megawatt output as main drives of plants in Iran and the Ukraine. With the available production equipment and a high degree of flexibility, the factory in Dresden provides best conditions for meeting the demands of the market. Sachsenwerk lives up to its reputation as supplier of special-purpose machinery who aligns its production with the requirements of the market instead of the in-house possibilities.
Tremendous demands on the development of large machines, high quality in production and the in-house processing orders are only one aspect. High logistic challenges on the suppliers of Sachsenwerk must be met every day and for every project.

Many customers take advantage of the opportunity to attend test runs and acceptance tests at the factory. The logistics experts must coordinate supplies of bearings, oil units, explosion protection systems, starters, etc. This also includes our own transport and packaging activities. We would not be able to satisfy our customers without a high degree of coordination and discipline. And they can rely on this also in future.

Foto: Karin Wagner

View of the production hall of VEM Sachsenwerk

PERSONAL

Interface for customer requests

VEM motors. Customers in the UK and Ireland, Finland and Sweden, France and Italy, Greece and Cyprus remember the name of Bodo Kirchner. Quite a number of projects and many purchase orders have been processed for these countries by Bodo Kirchner (42). Calls, questions and answers in English between the callers and Bodo Kirchner ensure that only VEM motors are shipped from the factory that meet the respective buyer's needs in every respect.

Bodo Kirchner has worked for the traditional electric motor manufacturer in Wernigerode since 1989. Bodo Kirchner, who trained in electronics and graduated as certificated engineer, has worked in the order processing centre of the firm for eight years. Employee for technical sales support and project processing is his official title. He was able to apply his experience in the project business in the handling of orders for crane drives or motors for railways. He processes, in particular, contracts and orders for the UK subsidiary of VEM, which was formed in 2001. He also visited that subsidiary in Redditch and filled in as holiday replacement to get to know the local market better. "My job is a challenge, which makes it interesting, and you keep learning new things", he says. "I simply enjoy advising customers and convince them of the quality of the VEM products."

Bodo Kirchner knows that he can rely on the work of all colleagues. This starts with the departments of design and electrical calculation, which create the basis of a tailor-made proposal for the customer, and also includes the workers on the production floor who make the motors and drives. Looking back 20 years, at a time when nobody even thought that electronic assemblies would one day conquer this field, the degree to which demands on drives have grown and also how VEM has grown along with these demands becomes obvious. Mr. Kirchner views himself and his colleagues as the interface at which the customers' requirements meet the competence of the technical departments and the diversified know-how of his firm. In this respect, to him, every order is an assignment to the team.

Foto: Karin Wagner

Bodo Kirchner is married and has two children. He likes to do sport and travels with his family to countries whose language he speaks and where he can add to his linguistic proficiency.

Energy efficient drive equipment

Fortsetzung von Seite 1

EFF1 motors as VEM did. The customers of the motor manufacturers, i.e., OEM's and plant suppliers, are not the users of the motors. The customer's interest is in the first line low purchasing and investment costs and less operating costs. The production of EFF1 motors requires a much higher input of materials whose prices are still going up in the market. The producers are unable to pass these extra costs on to the market.
As an alternative, VEM is convinced that energy can be saved primarily in throughout the technological process and the use of modern methods of speed control. The development of compact drives promises significant savings. Sales of these products have been on the rise since about 2001/2002. Their advantages, i.e., lower investment, controlled drive, speed adaptation to actual demands of the technological process, have convinced customers of the energy saving potential. At the most recent EEMODS conference, VEM presented the results of a comparative analysis of motors in EFF2 and EFF1 and a compact drive of similar output. The savings of cost and energy from a compact drive are substantially higher than those from an EFF 1 motor due to the possibility of speed control and the shorter break-even time of the compact solution.
Altogether, (VA) of CEMEP has been very successful. Between 1998 and 2005, the European motor manufacturers sold some 3 million energy-saving motors which together saved 4.5 TWh energy. Despite this, the motor suppliers must come up with further solutions to save even more energy. However, this cannot be done without close cooperation between the manufacturers and the buyers. The manufacturers' objective of offering optimal drive systems, both ecologically and economically, can only be attained if the users are aware of the operation period and energy consumption of the equipment. The saving of energy will gain further importance in view of the high consumption of energy and the further rise of that consumption, particularly in the industrial growth regions. It can also be seen that many regions of the world adopt the European system of efficiency classes; some regions even impose stricter rules. VEM and the other European motor manufacturers might be forced to adapt to this situation in future.
Looking at the current monetary efforts undertaken by European manufacturers for the production of EFF1 motors, whose share was about 7% in 2004, it will be understood that even higher expenditure on the production of motors of still higher efficiency is not reasonable, either commercially or industrially.
Despite this, the framework directive published in the official journal of the European Union on 22 July 2005 contains requirements for the ecological design of energy-using products. Its purpose is to integrate ecological aspects in the development and design of energy-using products and is to be implemented by the companies by 11 August 2006. This also affects electric drive systems.

VEM has been attending this matter intensively. By submitting proposals in national and European forums, the company will take an active part in shaping the conditions for the production and sale of energy-efficient products in all markets.

Foto: Wolfgang Koglin

Pump drives

INTERNATIONAL

Workshop on "Slip ring rotor machines"

VEM Sachsenwerk. In the modern development and drive machines for difficult start-up conditions, electrical and mechanical components increasingly merge to form drive systems. So the optimised mechanical component with adapted, modern starter equipment is becoming more important than ever to provide the users with economical and reliable drives.
At the beginning of January, VEM Sachsenwerk GmbH had invited to a workshop on "Medium-voltage slip ring rotor machines". Workshop participants were able to inform themselves and discuss with experts the specific requirements on these machines, their components and the starting characteristics.

Foto: Karin Wagner

Slip ring rotor motor with KBAV, 45 MW; 6kV

Some 40 participants attended the workshop. They discussed the specific features of operating slip ring rotor machines of shaft height of 710 mm and more, the design with permanent contact brushes, versions with the short-circuit and brush-lifting mechanism (KBAV) in slip ring rotor machines, the starting process and behaviour with starters, design aspects, commissioning and maintenance. Hands-on demonstration of these machines in the production hall of VEM Sachsenwerk GmbH added attraction to the event.

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