

Journal

ASSOCIATION OF ELECTRICAL AND MECHANICAL TRADES



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Preformed Windings is primed to make the most after Brexit

Maser & Quartzelec geared up for far eastern demand.

Sulzer Hydro Power Station Refurb, and Transformer Refurb.

WEG provides 3MW motor for Sims Metal.

Fortune favours the brave: TEC Motors.



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Journal

VOLUME 16 | ISSUE 2

AEMT COMMENT

A brave new world

At the AEMT's 71st AGM Brexit became a point of debate between members; on an informal vote it showed members were as divided as the rest of the UK on which way to swing. Full members were more inclined to vote leave whereas associates, who relied more on the European markets wanted a remain vote. So the AEMT's official position on Brexit became a bit of a moot point. Now we know the UK's decision, the opportunities it brings become clearer and something for us all to embrace.

In this edition of the Journal we take a look beyond EU boundaries to companies operating outside the EU. Westin Drives has a visit from a China based company who shares its SKF certified partnership in order to compare notes on quality systems. Quartzelec reflects on how its move to South East Asia has benefited its growth alongside new technology developments.

AEMT secretary Tim Marks takes a look at how Preformed Windings is primed to make the most out of Brexit now they have the advantageous backing of the Clyde Blowers Group.

TEC motors reveals their story of success – they were start-ups when the last recession hit, and now they are faced with another period of economic turmoil, it'll be their strong connection with China that helps them through Brexit.

Innovation remains key to success, and Fletcher Moorland's new ServiceVIEW facility enables their customers to get video updates straight to their inbox from the shop floor.

We hope you enjoy this edition, and as always keep your minds open to stories you would like to see featured in the magazine.

Thomas Marks
Editor and Marketing Manager

Front cover photos:

1. Sulzer Hydro power station refurbishment
2. Sims metal management shredder
3. Transformer refurbishment by Sulzer.

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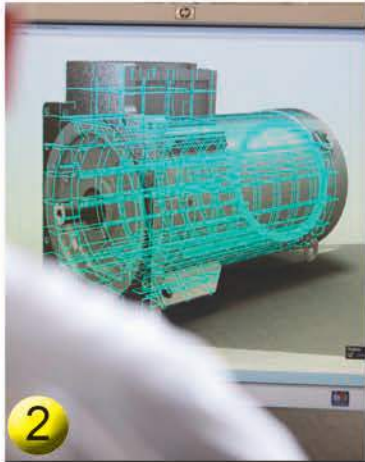
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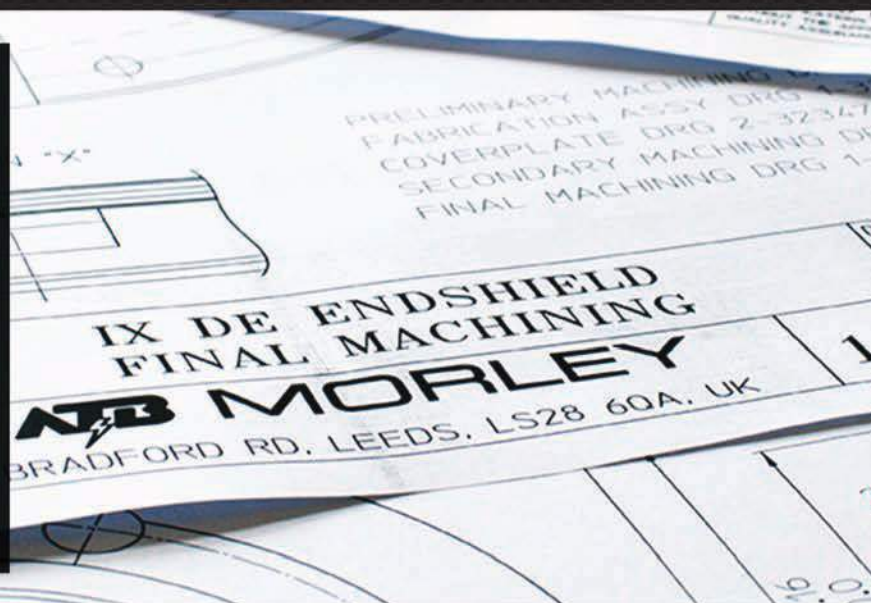
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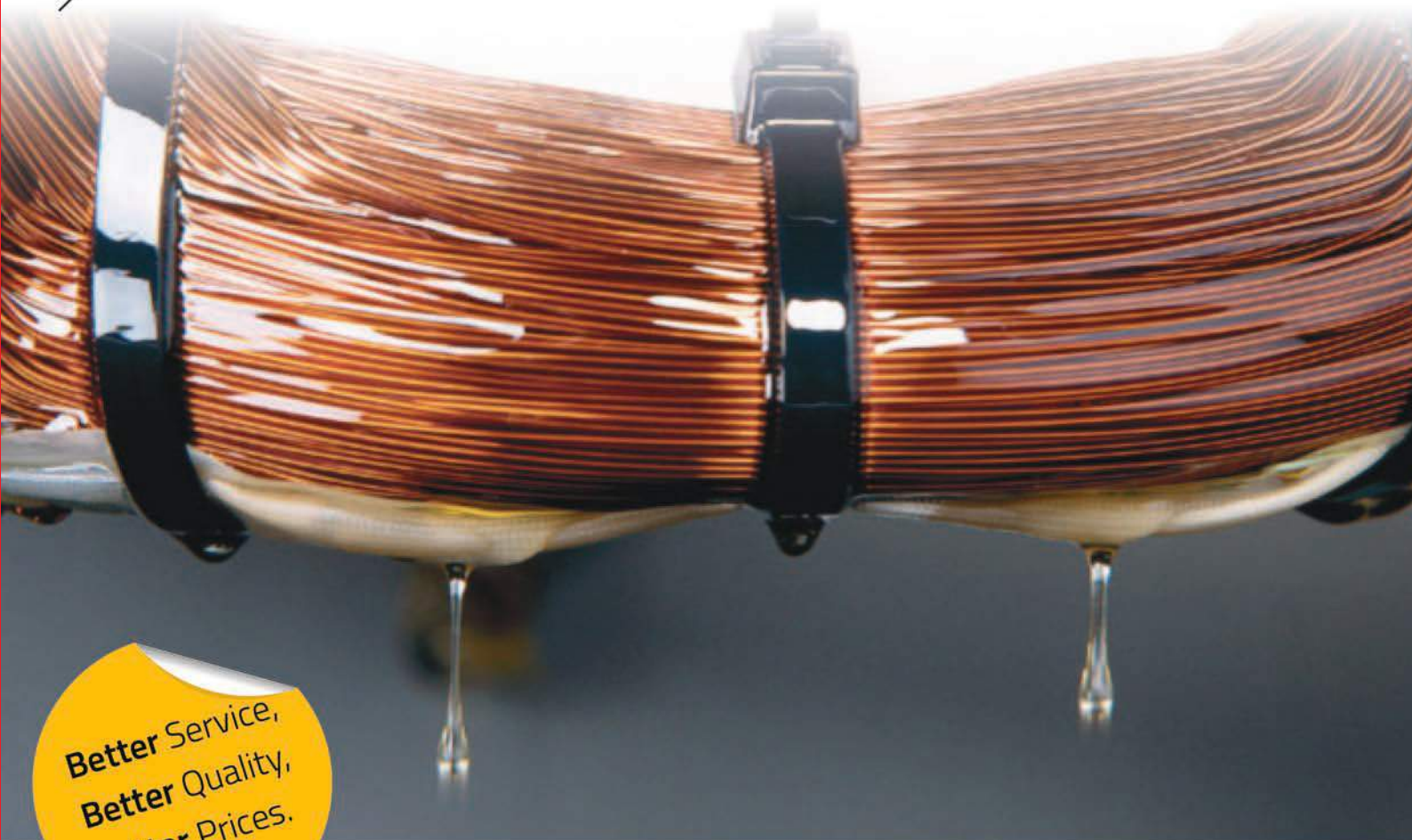
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Delegates from DingYang being shown the Bowers XT calibrated measuring micrometres by Connor Earnshaw.

High Quality leads Westin Drives to growth in the UK and also for Ding Yang Technology in China.

At a meeting organised by Jim Fowlie of SKF, delegates from DingYang Technology, a rapidly expanding distributor and service network of High Quality Transmission Products in China, compared notes with Westin Drives and the AEMT on how the two markets differed.

Jim Fowlie and Patricia Van Der Hulst of SKF invited Tim Marks of the AEMT to a meeting at Westin Drives for a discussion with a delegation from Ding Yang Technology Co Ltd. of Nanjing in Jiang Su, Ding Yang, in China. They were represented by Mr Zhu, the General Manager of DingYang, Mr Lu, and Mr Wu.

Westin Drives were represented by Ian Sheppard, Group Managing Director, Warren Parker, the Operations Director, and Frazer Lynch, Technical Service Engineer.

Westin Drives are an SKF Certified Rebuilder so of particular interest to DingYang, who also represent SKF in China. The delegates spoke very good English and were particularly interested in how the industry operated in the UK, where the industry had come from, how it had developed, and where we saw the industry going.

Ding Yang Technology was founded in 1997 to provide high quality products to the Chinese market in transmission and control. They soon became the authorized distributor for Siemens Flender gearboxes. A couple of years later, they also became the main distributor for SKF bearings in China. They established their first regional branch in Shanghai, and developed their main 2500 sq. metre distribution warehouse and logistics centre in Nanjing. They added a service and repair centre in 2008 to service the Flender



Connor Earnshaw, checking the radial Bearing Housing fit with a three point calibrated micrometre as recommended by SKF.

gearboxes, as well as providing a service for SEW, Sumitomo, Falk, Zollern and other makes in the area. With a service commitment to gearboxes, they have begun to add repair facilities to all of their branches, and have established their first service centres at Nanjing and Xi'. They plan to roll out a rapid expansion to provide many more service centres throughout China over the next few years. They now operate sub warehouses to give even faster service in Shanghai, Hangzhou, Xi'an Zhengzhou, Luoyang, Hefei, Huainan, Tianjin, Ordos, and Urumqi, these feed out to the rest of their 40 branches to cover the whole of China.

Their product range continues to expand with high quality suppliers, initially Siemens, Flender and SKF, they now distribute for GE, Emerson, KSB, AES, Cooper, and Lincoln, covering bearings, gearboxes, permanent magnet drives, couplings, motors and drives, pumps and seals.

Their industrial service network is now offering the SKF@ptitude asset management and condition monitoring systems in conjunction with their service and repair centres for motors, drives, pumps, and transmission systems.

It was good to see major expansion also happening at the Westin Drives premises. Westin Drives has a sister company called Westin, who manufacture top of the range and bespoke cooker hoods for the smartest of kitchens. They have created such a name for themselves internationally that they required additional space for their large stocks and manufacturing facility. To accommodate this they purchased the four storey Phoenix Mill just behind their current premises in Huddersfield. After a major overhaul of the former textile mill, they have begun to move parts of their business into it.

This has also provided Westin Drives with the opportunity to expand their premises, and they will be moving into part of the ground floor, and a new extension with additional cranes and a new power supply building later on in the year. They are upgrading their lifting capacity to two 10 tonne cranes, to



Patricia Van Der Hulst and Jim Fowlie of SKF talking to Warren Parker, Operations Director of Westin Drives in the new building.



Mr Zhu, General Manager of Ding Yang, talking to Frazer Lynch of Westin Drives.

provide a 20 tonne capacity. It will also enable them to increase their headroom substantially to handle larger higher voltage machines and vertical machines. The access to the new premises will also be improved to handle larger machines. In the additional space they are adding a training room, and improved panel building services, as well as additional space for their workshop facility. Work is progressing well and was of great interest to Ding Yang, who are also developing their new service centres in China.

After the mornings meeting the

DingYang representatives rushed off to catch a flight, so that SKF could also show them some of their centres in Europe.

After the meeting DingYang applied to become a member of the AEMT and we welcome them as our first member with branches throughout China. I hope that they will be able to establish good relationships with other AEMT members looking for opportunities in China. ■

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Sulzer was recently contracted to complete the refurbishment of a transformer for Redcar Bulk Terminal.

Transformer refurbishment benefits port terminal.

Medium to low voltage transformers are the final, crucial link in transmitting power from the National Grid to the functional equipment, so the impact on a business of a transformer failure can be very significant. Sulzer was recently contracted to complete a refurbishment after the client was given a prohibitive lead time for a new transformer by the original equipment manufacturer (OEM).

Redcar Port, owned and managed by Redcar Bulk Terminal (RBT), is situated on the South bank of the River Tees and handles a wide range of bulk cargoes. It is the deepest port on the East coast of the UK and operates 24/7 all year round, with equipment capable of unloading in excess of 44,000 tons in a working day. As such it has a significant reliance on electrical power in order to maintain efficient operation.

RBT has worked with Sulzer over many years and they have formed a good working relationship, especially with the Middlesbrough Service Center which is

situated very close by. So, when an 840 kVA transformer failed with a primary winding shorted to earth, Sulzer was called so that the problem could be investigated and resolved at the earliest opportunity.

Initially, the engineers were contracted to investigate the cause of the fault and to provide an initial report with recommendations for the best course of action. Ordinarily the quickest, if not the cheapest, repair is a direct replacement, but unfortunately 3.3 kV transformers are not always available on short lead times.

For this particular application the most efficient resolution was a complete refurbishment that would effectively deliver a virtually new transformer back to RBT. Sulzer service centers are fully equipped with both the facilities and the engineering expertise to complete these projects in-house, giving the client peace of mind.

Steve Bonner, Electrical Maintenance Engineer at RBT, comments:

"Transformers such as this one provide power to a wide range of equipment so any failure will have some significant consequences for us in terms of productivity. Clearly, speed of repair is crucial, especially if we need to hire large generators to keep the plant operating."

Arthur Grant, Service Center Manager at Middlesbrough adds: *"For this particular project it was necessary to develop new formers and racking in order to create the new windings with exactly the right dimensions. This is very important because in this design of transformer the low voltage windings sit inside the high voltage windings and they share the laminated core."*

Once a new winding has been finished it is tested before being assembled with the other windings to create a high voltage circuit which is connected in star configuration and a low voltage circuit connected in delta. The new coils are located on the laminated core and then tested again to ensure the correct connections have been made and the insulation is meeting the required standards.

The Middlesbrough Service Center completed the project as quoted, with an 8 week turnaround, compared to a lead time of several months for a new transformer. Arthur Grant concludes: *"We have a close working relationship with RBT that has been built up over many years. Being located almost next door means that their engineers can easily come in and review progress on any project. We communicate on a regular basis about the progress of any repairs which means the client can plan accordingly and use their resources more efficiently."* ■



Janet and Linda in front of KLVA's facility in Balakong, Malaysia.

KLVA escalates business in KL.

Set among the sprawling streets of Balakong near Kuala Lumpur, KLVA's workshops are actually relatively easy to find, despite the taxi drivers poor navigational skills. Their unit is just a few minutes off the E18 main road situated near Putra University and practically located to service the nearby metropolis and surrounding local industry.

They moved to their modest workshop in 2010 where they have a 3 tonne lifting capacity and the facilities to rewind, repair and overhaul electric motors, pumps and alternators. Using a local subsidiary company, means they can also take on transformers and machine spare parts when needed.

It's clear that despite their recent move they are already keen to increase their workshop size to be able to bring this subsidiary work in-house. The shop floor was full of job orders, and with more space they would be able to expand into the business they are striving to be.

The company started in 1988 when Puah Geok Thong and his wife Maxine decided that they had enough experience, contacts and expertise to start up their own rewind company. Given Puah's background, the majority of work came from lifts and escalators at first. Many years later now, and they have built a strong company with an excellent and knowledgably workforce. Among the 30 or so technicians each one has more than 10 years' experience. Extraordinarily among rewind companies, Maxine has managed to employ a devoted, all female workforce upstairs to ensure the smooth running of the company.

Linda, KLVA's customer support engineer, proudly showed me around the workshop. Her degree in Electronic Engineering and thirst for understanding has meant Maxine has a trusted colleague on her side to manage the technical demands of customers.

The breadth of their knowledge has meant that they are able to solve many businesses problems quickly and efficiently. They are approved repairers for Baldor motors and even have the capability to take on Ex work. ■

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Maser & Quartzelec, Kuala Lumpur.

Quartzelec – gearing up to meet growing Far East demand

In the UK, Quartzelec are already an established provider of repair, rewind, refurbishing and retrofitting services for AC/DC motors and generators from 415V up to 22kV. Recently though, they expanded to Malaysia to cover the South East Asian region, and last year, Matt Brown took up the offer to move his life over to Kuala Lumpur to become the facilities new general manager.

The expansion was driven by sustained demand for power across SE Asia and from historical power generation opportunities within the region.

Due to differences in culture, Quartzelec needed a trade partner who understood the markets and business etiquettes. They formed a partnership with a local operation called Maser in the late 1990s.

This grew over the next decade into a permanent trading relationship, which went on to create the joint brand seen in the photo above. They established a purpose built electrical maintenance and service facility in Kuala Lumpur, Malaysia in 2011/2012. The building was setup to meet the rapid urbanisation across the

region and the urgent demand for power to support the electrification networks being created.

Since then Maser & Quartzelec Services (MQ) has grown from strength to strength and in August 2015 Matt Brown took up the post as the new General Manager. Matt was already a longstanding member of the Quartzelec UK senior management team and also treasurer for the AEMT 2014-2015. The role gives him responsibility for the 25+ local and highly skilled engineers and managers, the vast majority of whom are Malaysian nationals. The staff all have a wealth of electrical machine knowledge with a good understanding of local business practices, industries and markets.

Matt states, *“There is a myriad of players within the entry level motor and generator sector of this flourishing market. When it comes to providing quality maintenance, backed up by real expertise and excellent customer services, our operation is now the preferred choice for many. In terms of the equipment reliability and the level of service we provide, quality is fundamental to everything we deliver – and this reputation has been hard won.”*

Today Maser & Quartzelec boasts a purpose built, IECEx accredited workshop facility with installed craneage capable of lifting up to 50-tons. Alongside this sits a 32-ton balancing machine, a 28-ton lathe, a combined oven and burnout facility, plus extensive

test capabilities up to 11kV. Collectively this means it has all capabilities required to support fractional horse power up to multi-megawatt motors and generators. They often find themselves working on larger machines rated up to 22kV.

Portable site cabins are also be located on-site ready for immediate mobilisation to any location requiring the servicing and repair of electrical machines up to and including 600MW, 2-pole generators.

Since its formation, Maser & Quartzelec Service has increasingly been recognised as a high end independent electrical engineering service provider. This has resulted in its appointment by many of the OEM'S operating throughout the region, as their preferred 'service partner' for factory and site works within the region. Its knowledge, experience and 'can do' attitude has been a key factor in achieving this, ultimately resulting in various internationally recognised safety and quality accreditations being secured and retained over recent years. These include ISO9001, the most widely recognised quality management standard in the world; being recognised as an IECEx service repair facility; and achieving the internationally accepted OHSAS 18001 standard for assessing and auditing health and safety management systems.

A recently completed stator rewind of a 7.6MW, 11kV motor for a local Oil and Gas company is typical of the projects regularly delivered by Maser & Quartzelec Services. In this instance this motor was a vital cog within the overall plant and production process, so being off-line for repair, even for a short period, would impact the customer in terms of lost production and sales. Precise planning to minimise overall downtime was necessary, particularly as the project entailed working with many stakeholders, including the OEM for the replacement coils. This was not only achieved by the local Maser & Quartzelec Service team but they also successfully and safely delivered the project within budget and ahead of schedule.

It's not just about responding to customers' ongoing maintenance



Matt Brown at the Kuala Lumpur service centre.

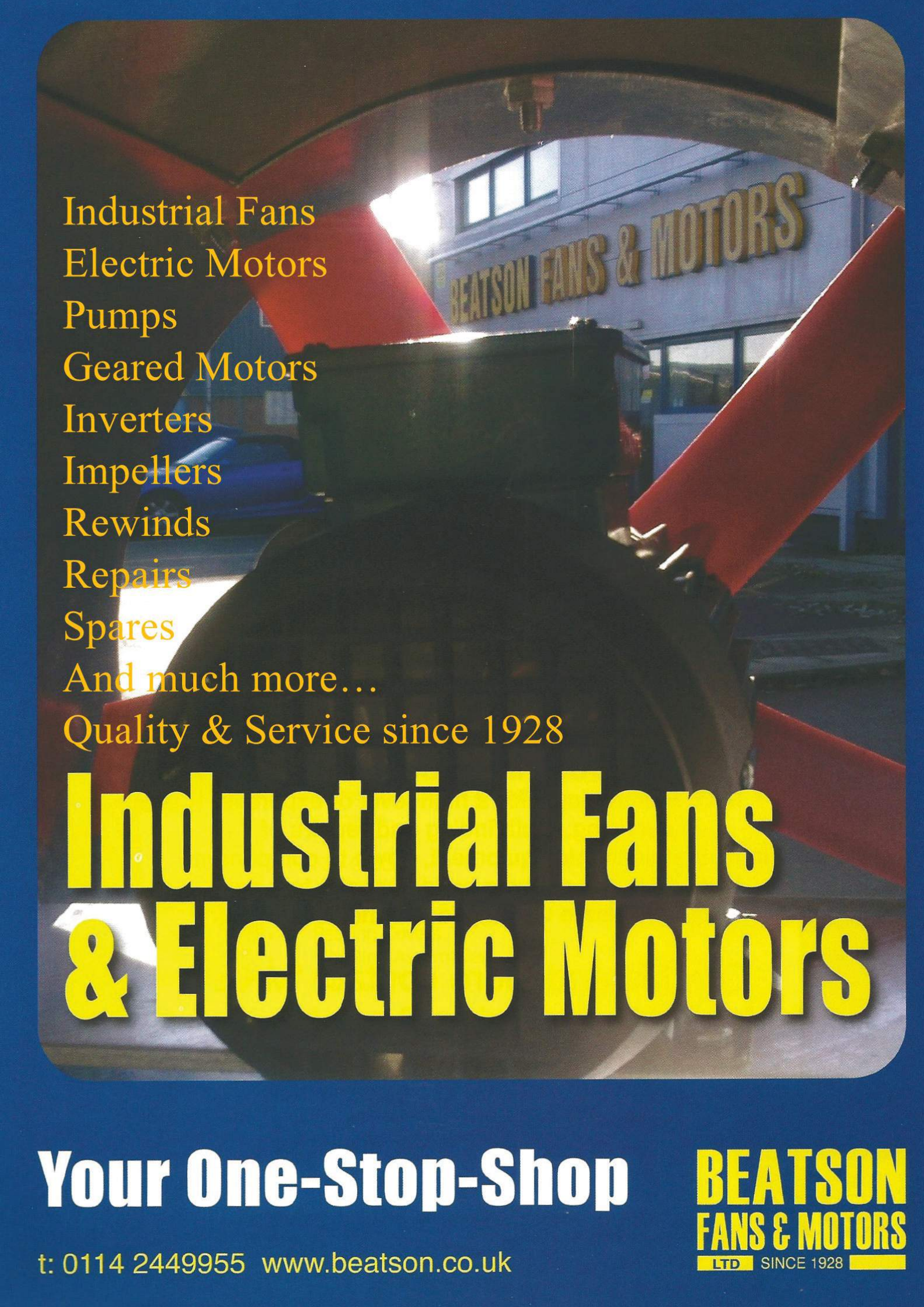


Maser & Quartzelec's 32-ton balancing machine.

requirements or troubleshooting critical repair issues. Over recent years a growing number of end users have come to appreciate the benefits that preventative maintenance and closer operational monitoring brings. The LIFEVIEW® conditioning monitoring system has been a great success in helping to ensure end-users assets are operating effectively and efficiently and remain at optimum performance. A range of analysers and sensors are fitted to HV equipment to provide a host of analytical readings, which help monitor performance. These can either be permanent and delivering a regular stream of data, or portable and collecting data at prescribed support intervals – meaning overall costs can also be reduced.

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Matt explains that *"Identifying what could quickly result in a critical failure before it occurs could save the user significant savings, even before any*



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The oven at Siemens Malaysia used for 2250kW Stator after rewinding.

Siemens settling into their new workshop in Malaysia

When the AEMT last visited Siemens Malaysia Process Industries and Drives back in 2011, things were different. Their facility was hidden away among the maze of streets in the suburbs of Kuala Lumpur. Their size was limiting their capabilities and they struggled with the retention of some of their high calibre engineers.



The massive 141 ton Flender Gearbox - big enough to fit a man inside.

5 years later they paint quite a different picture. Charles Clarence Nelson, the workshop manager is very pleased with the impressive new facility, which they moved into last November 2015.

The building is modern, spacious and on entering you are welcomed into a cool air conditioned reception room – heaven after the searing tropical heat outdoors. Going upstairs in a quiet hydraulically operated lift are the offices and administration – Charles Nelson’s

desk is parked in front of a landscape window opening out to a full view of the workshop below.

The workshop is 40% larger than their old premises, which has given them the room to breathe that they so badly needed. With the new space they are able to keep the works areas clean, tidy and organised, as well as having the capacity to bring in a wider range of work.

At the entrance to the workshops you are greeted with a monitor showing off all the jobs Siemens have in progress across the globe – demonstrating their truly international presence, but also how busy they are.

During 2015, Siemens received an order, scheduled for December 2015, to



Spray booth with water curtain environmentally washes away the back spray.

overhaul 15 HV motors from a major oil and gas company. In their old premises, it was not going to be possible to receive the order, so the deadline was set, and there was no way of delaying. In total it

took 8 months of preparation to move by their deadline and they succeeded without upset.

The lease on the old workshop was to expire in January 2016, meaning they had two months to complete the move and complete the major overhaul of all 15 motors. Having moved into the new premises in November they cleverly used both workshops to complete the overhaul of the motors.

With a 40% increase in space, Siemens are now able to cater for much larger equipment, as well as installing a traction motor repairs area. They have a combined lifting capacity of 40 ton, a test bed up to 11kV, balancing machines, heating and burn out ovens, winding machines and latest test equipments.

Siemens Malaysia Process Industries and Drives are currently overhauling a 141 ton Flender Gearbox made in Germany. The workshop has two 20 ton cranes, just enough to lift the largest component of the gearbox, a massive 37 ton gear. In order to manage the weight Siemens designed a bespoke lifting beam to spread the weight among the two cranes – only the first of many bespoke pieces of equipment in order to overhaul the gearbox. If you are interested, there will be a case study printed in due course with more details on the overhaul.

The new facility is easily found off the E5 motorway towards the Pelabuhan Klang docks, situated among other industrial buildings focusing on the same areas of interest.

A key strategy of Siemens is to become a trusted partner for process industries and drives. With technologies advancing to Industry 4.0, there is so much more than just the upkeep of rotating electrical equipment.

With many smart products installed in facilities now, Siemens are able to offer a full range of services to increase the reliability, safety and efficiency of products, processes and plants. ■



4 Left-Right: Bernard Phang, Senior Service Engineer; Frank Berger, Specialist in Mechanical Drive Field Service from Siemens Germany; Charles Clarence Nelson, Head of Repair Services; Thiagarajan (Raja) Palanivelu, Senior Sales Support Engineer.



A view down across the new workshop with the Flender gearbox being overhauled in the foreground.



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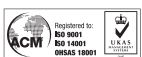
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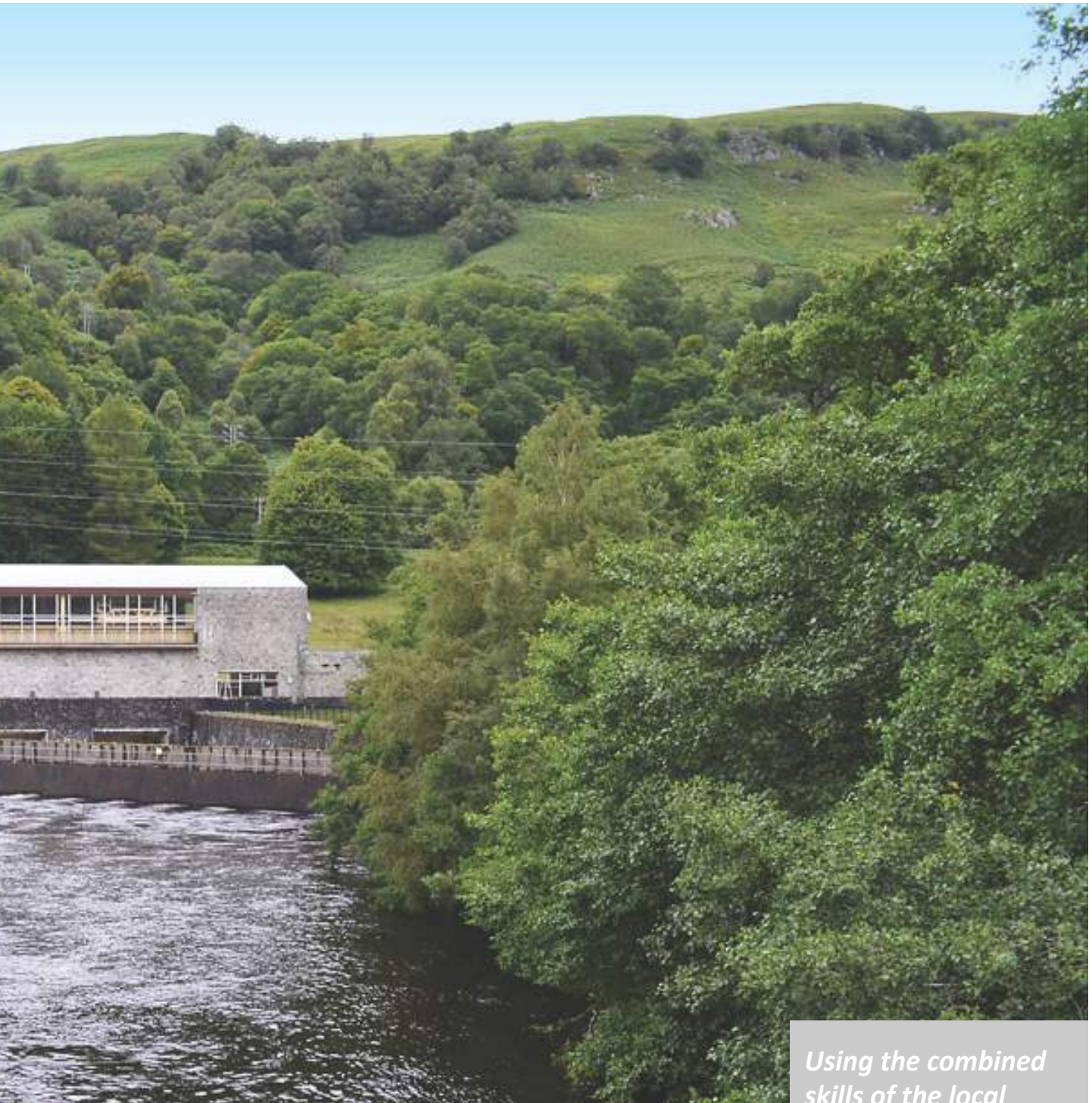
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After nearly 60 years of service the hydro generator at Lochay Power Station was scheduled for refurbishment and the project was awarded to Sulzer, which has a distinguished history in high voltage generator refurbishment.

Scottish hydro power station refurbishment increases output by 15%

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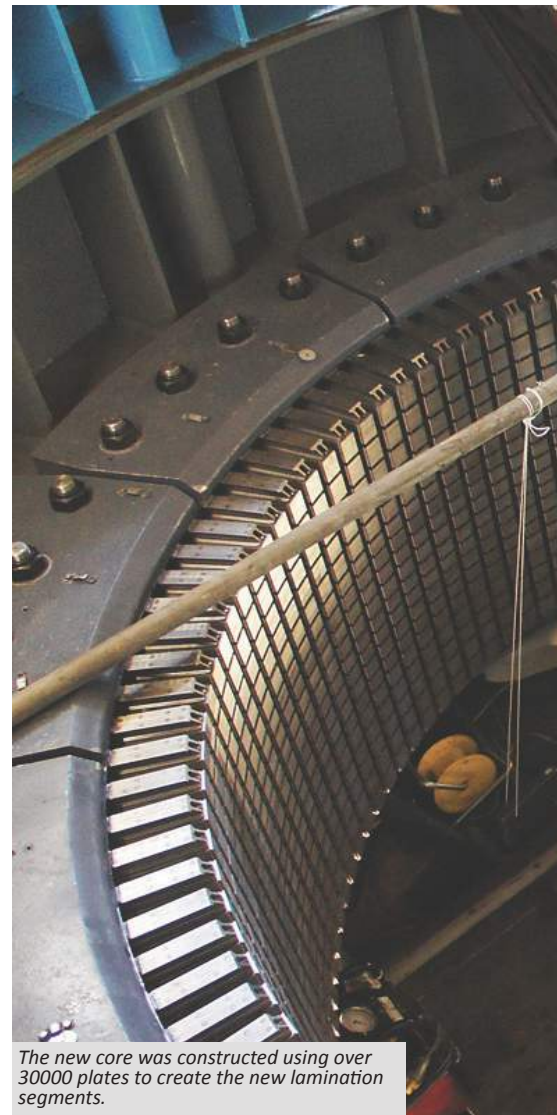
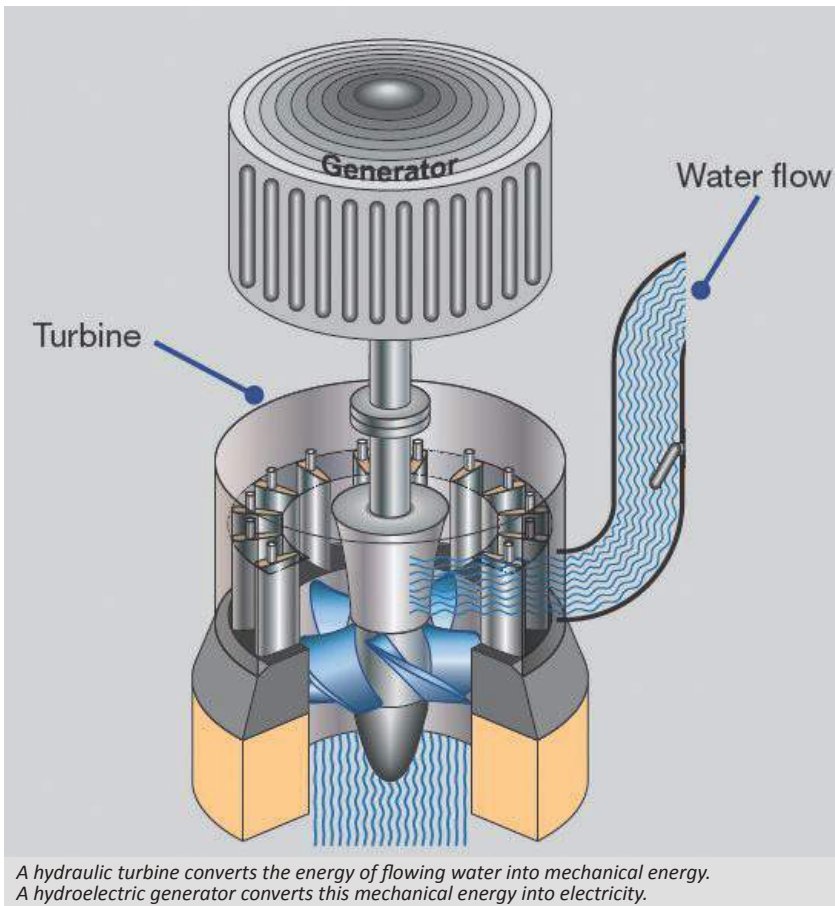
After nearly 60 years of service the hydro generator at Lochay Power Station was scheduled for refurbishment project. Sulzer was given the order, which has a distinguished history in high voltage generator refurbishment. Using the combined skills of the local service centre in Falkirk and the coil shop in Birmingham, Sulzer has improved the design and construction of the generator so that it now has an increased output and is more efficient.

The Lochay hydro power station is located near to Killin, Stirling, with a total capacity of 47 MW and is part of the Breadalbane Hydro scheme. The two main generators are English Electric 22.5 MW units, which were commissioned in 1958.

The remaining 2 MW are produced by a smaller Pelton turbine, which uses the compensation water that is released into the River Lochay when the main sets are not running.

Using the combined skills of the local service centre in Falkirk and the coil shop in Birmingham, Sulzer has improved the design and construction of the generator so that it now has an increased output and is more efficient.

The whole project was coordinated and run by the local service centre in Falkirk but involved the skills and expertise from other key service centres including Birmingham, where the design improvements for the stator and coils were created.



Initial diagnosis

In 2012, one of the generators started to exhibit some noise and vibration issues, and SSE, the owners of the installation, called in the specialists from Sulzer’s Falkirk Service Centre to dismantle the generator in question and investigate the cause. The stator design was slightly unusual in that it was built in two halves and bolted together on site, primarily because of the difficulty in transporting and moving the materials to the remote location during its construction.

The investigation found that the stator core had a gap in it due to movement

and the erosion of the insulation. When the generator started up from cold it would vibrate until it reached an operating temperature of around 50°C, when the core would lock together and the vibration would cease. More recent energy demand in the area had seen the usual continuous operation of the generators being replaced with more frequent start and stop operation that was exacerbating the situation.

Considering the mature status of these generators, it was testament to their construction that only the bearings

had been replaced during the past 60 years. However, the latest development indicated that a complete refurbishment would soon be necessary and so plans were put in place to complete the work in the most cost effective manner.

Getting under way

SSE awarded the project to Sulzer, which has considerable experience in refurbishing hydro generators, including a similar project that was completed at Barron Gorge, Australia. This particular project had a great deal of scope to apply design improvements to both the stator and the stator coils that would improve reliability, efficiency and overall output.

Work began in 2015 to dismantle the generator again and start the complete



repair process which would see design improvements that in turn would deliver considerable enhancement to its performance. Using the on-site lifting equipment, the 56 tonne rotor was removed to allow access to the stator and its windings which would be removed along with the stator core.

The whole project was coordinated and run by the local service centre in Falkirk but involved the skills and expertise from other key service centres including Birmingham, where the design improvements for the stator and coils were created. The first of these was the creation of a new one piece core that would replace the original two-piece core.

The site engineers completed the laborious task of rebuilding the core

using over 30,000 plates to create the new lamination segments. Each segment was manufactured from a grade of magnetic steel which provided a 10% reduction in losses when compared to the material used in the original construction.

The installation process involved the construction of a ring of plates around the stator frame to allow 22 hydraulic jacks to be used to pressurise each set of laminations and to remove any air pockets. The cylinders were connected to multi-port manifolds to ensure that the same pressure was applied equally around the lamination packs. Although a time consuming process, it was essential that the construction of the new core was of the highest quality to ensure the reliability of the generator when it was returned to service.

The new core was tested utilising a hire generator to provide sufficient power. The core flux test parameters were recorded and the temperatures recorded using a thermal imaging camera, which together determined that the core was in excellent condition. Following the assembly of the new core, the engineers used a high precision laser measuring device to create a complete 3D engineering drawing of the stator that was used to help create the new windings and ensure a perfect fit.

Technical expertise

The new coils have been redesigned by the technical team at the Birmingham Service Centre to account for the considerable improvements in insulation technology that have occurred over the past 60 years. The insulation class has



The new coils were redesigned to account for the considerable improvement in insulation technology since the original was manufactured.

Sulzer directly employs the expertise that is required for delivering projects such as this rather than using sub-contractors, thereby maintaining and building on the experience and expertise within the company. Several of the engineers working on this project have previously been involved in similar projects in Australia and the Philippines.



The service team used a thermal imaging scanner to check if the core laminations had a uniform temperature spread.

been improved from class B to class F and the reduced thickness of insulation has allowed the volume of copper in each winding to be increased by approximately 5%. The new design must also withstand the high specifications required of coils destined for hydro applications and subjected to more

frequent start/stop sequences. While the 126 new coils were being manufactured in Birmingham, the Falkirk Service Centre reinsulated the 12 rotor poles, again using the latest class F insulation, in order to provide consistent durability throughout the generator. At the same time the Falkirk engineers also

re-wound the DC exciter train ready to be reinstalled once the stator coils were all in place.

Marc Stuart, Works Electrical Manager, Falkirk Service Centre comments: *“This project has been managed from start to finish by the Falkirk Service Centre, reinforcing Sulzer’s commitment to use one point of contact for the customer and so simplifying the communication process for the project. Behind the scenes Falkirk is able to call on the technical expertise in Birmingham and also bring in experienced engineers from other service centres to maintain the 24 hour schedule that was in place for a time. It is this cooperation and broad base of skilled engineers that allows Sulzer to deliver turnkey projects on time and within budget.”*

Sulzer directly employs the expertise that is required for delivering projects such as this rather than using sub-contractors, thereby maintaining and building on the experience and expertise within the company. Several of the engineers working on this project have previously been involved in similar projects in Australia and the Philippines.

Mark Learmonth, Project Manager for Sulzer Falkirk, adds: *“Due to the location of many hydro-electric plants, it can be difficult to achieve the level of logistical support that you would like and so some aspects of the project have to be completed on site. In this case SSE stipulated that the stator and rotor had to remain but even so, the local roads would not have allowed the necessary transport to reach the site. Fortunately, our teams are experienced in managing these constraints and are more than capable of delivering larger projects like this one.”*

Once the new stator coils started arriving on site the process of rebuilding the stator continued, with all of the coils being carefully positioned and wedged into place before the first round of high voltage tests was completed. After completing the coil connections and another round of HV testing, the generator was turned into an oven by sealing the unit and installing heaters before varnish was applied to the coils and baked in situ.



The Breadalbane Hydro-Electric Scheme is located in the mountainous region in highland Perthshire and utilizes the water stored behind 6 dams. Over 20 tunnels and aqueducts carry water to 7 power stations, of which Lochay Power Station is the largest.

Finally, the rotor poles were reinstalled and the exciter train reassembled before the rotor was lowered back into place. Final tests were completed before the main covers were replaced and the generator recommissioned and placed back into service.

As a result of the improved design and the use of the latest insulation technology, the power factor of the generator has improved from 0.8 to 0.85 while the overall output has increased by 15%, from 22 MW to 25.6 MW. Furthermore, these improvements and

the physical assembly of the stator will rejuvenate and greatly extend the working life of the generator for another 40 years. ■



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Ridgway Gantry and Taping Station for four BCT travelling head taping machines.

Preformed Windings is primed to make the most out of Brexit.

Tim Marks, AEMT Secretary, looks at the transformation of the company founded in 1968.



“Where there’s muck there’s brass” they say in Yorkshire. However it is Jim McColl’s Scottish company that has the Midas touch when it comes to regenerating struggling engineering companies into highly desirable investments.

Since the Thatcher years, engineering companies in the UK seem to have been pushed to the back of the queue by financial institutions, whereas in

Germany they are highly valued as one of the mainstays of their economy and global exports.

Clyde Blowers Capital (CBC) has invested heavily in niche engineering companies through two funds, which have raised £670m since 2008. The first £250m fund was invested in six portfolio companies including Clyde Union, the former Weir Pumps, which they sold after three years for £750m in 2011. The next fund set a

target of £350m, but was extended to £420m when it was oversubscribed in early 2012. A further six investments followed including Ferguson Marine, a shipyard threatened with closure in 2014. Ferguson last year won a £97m contract for two Hebridean ferries and intends to take on 150 apprentices over the period of the contract.

The team at Clyde Blowers Capital, formed by Jim McColl, have become masters at



Ridgway: Multi Position Pivoting De-Reeler Drum Stand.

The amount of planning and focus on buying the right companies at the right price to put the jigsaw together, is often followed up by an investment in premises, equipment, and management support, providing what most managers or owners could only dream of.

identifying companies that can benefit from their management experience and financial backup. The amount of planning and focus on buying the right companies at the right price to put the jigsaw together, is often followed up by an investment in premises, equipment, and management support, providing what most managers or owners could only dream of. However the companies that they invest in have been identified as having products with a long-term and recurring revenue from spare parts and potential to service “mission critical assets” and spares in a global market. Put these constituent parts together, with the funding and management guidance provided by the team at Clyde Capital Blowers, and the identified growth potential becomes a reality.

Since the initial purchase of Parsons Peebles Group (PPG) by Clyde Blowers in 2013, they have added Preformed Windings in 2014, Anstee and Ware in 2015, and Taylor and Goodman in 2016;

this is hitting their target of increasing the service coverage of their “Electric Machines Group”. It now has these four companies under its wing trading from 17 sites in the UK. Frank Barrett the CEO of Parsons Peebles Group has stated their intent “to become the no.1 UK supplier of electromechanical services. PPG now offer an extensive range of LV to HV electrical machines, both new build and also servicing machines already in the market. This is complemented by a capability on pumps, gearboxes, compressors and other mechanical equipment. CBC already owns the newly merged David Brown Santasalo, the global gearbox specialist, and Keto Slurry pumps as well as numerous other mechanical engineering companies.

When CBC purchased Parsons Peebles Group of Rosyth, they realised that for their envisaged plans to materialise, and to ensure a rapid growth of manufacturing High Voltage machines, they would require self-sufficiency in

coil manufacture. They focused in on Preformed Windings, who already had a strong relationship in supplying Parsons Peebles with manufactured coils. Just a year after purchasing Parsons Peebles they bought Preformed Windings from Deritend Industries in July 2014.

The company employed 35 people and had a turnover of £3.2 million. Since then it has undergone a period of major investment in new premises and new equipment, seeing a tripling in demand for its precision high voltage coils under the direction of Frank Barrett, CEO of the Parsons Peebles Group:

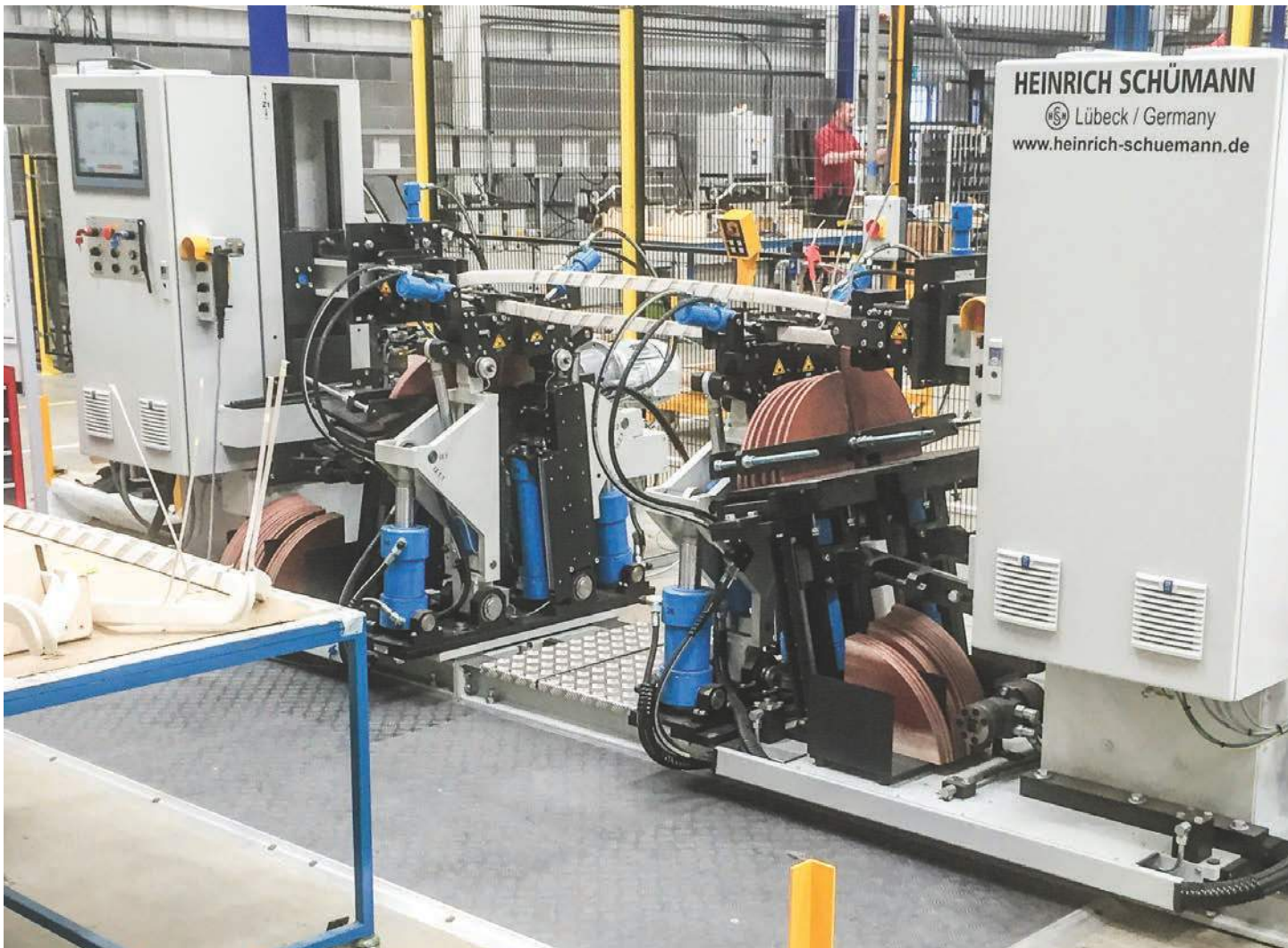
"We have had a strong relationship with Preformed Windings over a number of years, and enjoyed the benefit of the exceptional quality of their products and manufacturing responsiveness. We are excited to bring Preformed Windings into our group. This acquisition not only delivers, it also offers excellent prospects for Preformed Windings to continue to grow its reputation as a first class independent Coil Manufacturer supporting a number of OEMs and Service companies."

Preformed has really benefited from a rapid expansion. Dave Hardy, Customer

Service Manager said: *"The previous manufacturing facilities were located in the residential area of Hackenthorpe, Sheffield, and were not suitable for extension or significant changes in layout. A high priority following the company's acquisition by Parson Peebles had been to move to newer, larger and more suitable premises. These were found at the Vector 31 development in Waleswood, Rotherham. The new 17,300 sq. ft. premises are over twice the size of the previous premises but due to its optimised layout allows a much larger increase in output at shorter lead times. Walking around them a few weeks*



Gantry over the Schumann Hot Coil Press station.



Heinrich Schumann: Automatic coil-forming machine.

after their move, they had already filled every corner in a well ordered, light, and spacious premises."

The new building needed an electrical substation and additional plant enclosures to house the chiller and air compressor units required to provide the state-of-the-art manufacturing facilities essential for the company's expansion. The new work area has been custom fitted investing around £2m with the latest cutting, straightening, looping, shaping and taping machines. Most of the new equipment has come from Ridgway machines, another AEMT member. Ridgway worked closely with Preformed to meet their demand for an increased production capability using equipment that would provide consistent performance, reliability, and ensure the highest quality product.

The plant supplied includes a hydraulically operated Roebel tooling

station able to shape a stack of pre-positioned conductors. An Automated Loop Winding Machine with Pin position setting, working with a Multi-Position, Pivoting, De-reeling Drum Stand.

The Straighten, Strip and Cut to Length Line includes the ability for conductor stacking and banding.

Ridgway also integrated an existing set of coil handling equipment into the new gantry together with additional linear rail systems for 4 BCT travelling head taping machine areas within the single gantry footprint.

The whole workshop has been designed using advanced value stream mapping and lean principles. This all adds up to a world class facility to provide coils of the highest quality, service, and speed of production. Preformed expect to more than double their staff numbers over the next three years.

Like most of the High Voltage coil manufacturers in the UK they stand to gain a huge amount from Brexit. They are now ready to take full advantage of the UK's new ability to negotiate trade deals in countries outside the EU, with a more attractive pound for exports to Europe and dollar based, oil producing, countries in the Americas, the Gulf, and South East Asia.

Preformed currently supply 7 of the top 10 major OEMs, and export more than 50% of their production to manufacturers, repairers, and end users worldwide. The industries covered include oil & gas, chemical, power generation, electrical machinery, general engineering, water, transport, paper, extraction and shipping industries. It is interesting to note that there are over 100 significant hydro stations in Scotland. Some of the most vital are kitted out with Parsons Peebles generators and other equipment.



Ridgway Mobile/Travelling Head Coil Taping Machine.

They also supply replacement coils and general field / workshops services to hydro and other renewable power facilities throughout the UK.

Ricky Guest, Sales Director of Preformed Windings, observed *“Even in these early days as part of Clyde Blowers, it is clear that the planned investments in people, plant and premises will enable us to develop our product range, manufacturing systems, and capacity, and allow us to serve our growing customer base with a first class service.”*

The planning for the move included major updating of machinery, optimising plant layout with input from all the workforce, recruiting additional staff and training. They had a dedicated team to manage the move, and kept the old facility operating concurrently to ensure a smooth transition. They have also strengthened their Enterprise Resource

Planning (ERP) and CAD capabilities. The new facility has a dedicated area for high voltage coils, traction coil production, upgraded test capability, and the ability to super fast-track coil batches to meet urgent high voltage machine rewinds. Their finished components are manufactured to ISO 9001:2008, ISO 14001:2004, BS EN 50209:1999 and ESI 44-5 standards, as well as to individual customer specification, and approved for Nuclear Energy in the UK. Their rigorous quality testing helps to consistently maintain the highest standards.

Using the latest technologies and the best materials, they create bespoke, cost effective solutions for end users, repairers and OEMs anywhere in the world. With a high degree of accuracy and precision, the preformed coils can improve winding times and extend the life expectancy of their customers’ machinery. They are proud to be able to work within very short lead times, minimising any downtime for their customers. There is such a focus on this rapid supply capability they have even branded it QualCoil-Rapid™

The much larger new building, equipment and employee input from

top to bottom has created a culture of excellence throughout their business, ensuring that their customers can rely on excellent customer service and accurate solutions – every time.

Their manufacturing range includes Diamond Coils, and Concentric, or Hairpin, Coils for High Voltage Motors and Generators, providing replacement windings for 400v – 16kV machines with copper, enamel, and glass conductors. They meet Hermetic, Sealed /NEMA, and Hybrid Specifications for resin rich and VPI insulation systems.

Armature Coils for AC/DC Traction Motors are manufactured up to 3,000 volts to custom and hybrid specifications for resin rich and VPI insulation systems.

Bespoke and standard designs can be ordered with a choice of insulation systems. Insulation types include hot resin rich, un-pressed resin rich and VPI, and a wide selection of specialist materials ranging from Mica/Film to Enamel/Dacron. Their winding kits include all types of slot wedges, packing strips, insulation tape, thermistors, HV cables etc.

Using the latest technologies and the best materials, they create bespoke, cost effective solutions for end users, repairers and OEMs anywhere in the world. With a high degree of accuracy and precision, the preformed coils can improve winding times and extend the life expectancy of their customers’ machinery.



Large Loop winding machine with pit.

Preformed have worked very closely with their suppliers to ensure that they can give an incredibly quick turn round if a critical situation occurs. Their determination to excel in this area was well demonstrated when Illinois Electric Works Inc. had a critical failure on an old turbine generator used in a cogenpower plant, producing heat and power. The specification of the 1959 machine was 9,375 kVA, 13.8 kV, at 3,600 RPM.

Having received the enquiry, they had a service engineer on a flight the next day to view the situation and take the relevant data. From the visit it became obvious that the original coil drop would not allow for ease of coil insertion, and the replacement coils were redesigned as diamond coils to enable the replacement winding to fit into the old stator. Using up to date materials, they improved the insulation specification further enhancing the coil design, and improved the coil geometry. If redesign had not been carried out a more expensive stator bar would have been required. The new design incorporated

an increase in copper allowing the machine to run more efficiently.

Before despatch by air to Illinois, the final coil shape was checked to ensure conformity of the radius and coil drop and the consistency of space between coil overhangs. They were tested in accordance with IEEE standards for Inter-turn test, Tan Delta (Tip-up test) and High voltage test. On receipt the coil design made it much easier to install the 9 foot coils in the very tight stator envelope, much to the winders satisfaction, and some initial coil flexibility allowed for easier winding. The customer and end user were absolutely delighted. Dale Hamil, President of Illinois Electric Works Inc. remarked

"The quality of coils and speed of response enabled us to complete the rewind 5 days ahead of schedule. We were delighted with their response and professionalism throughout the project."

As this work was carried out at Preformed's old premises, without

the benefit of their state of the art equipment, they feel sure they can now improve even on this rapid turn round.

It is good to see the benefits of so much investment coming out of East Kilbride, going into engineering companies across the UK and globally. The very high levels of investment and management input is creating world class companies out of companies that have often been through many difficult times to survive. Their investment and management strategy is creating impressive returns by collating and investing in medium sized engineering companies, which have been squeezed for cash for far too long. ■

Clyde Blowers Capital:
www.clydeblowerscapital.com

Parsons Peebles Group:
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Preformed Windings Ltd:
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Ridgway are the leading manufacturer of precision taping and winding machines for the electrical and energy industries, with over 90 years engineering experience. Ridgway machines are widely used for manufacturing electrical coils, cable and conductors. From innovative flexible designs to worldwide customer support, we provide expert solutions developed from a close understanding of our customer's individual needs.

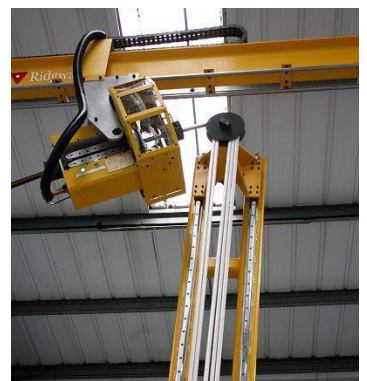
From suspended hand-held coil taping units for motor and generator coils/bars to fully automated multi-axis complex coil winding systems, Ridgway offer a wide range of cost effective machines for coil pull-out, forming, taping and loop winding - including narrow coil profiles and **Heavy Duty** processes for large HV coils and bars.

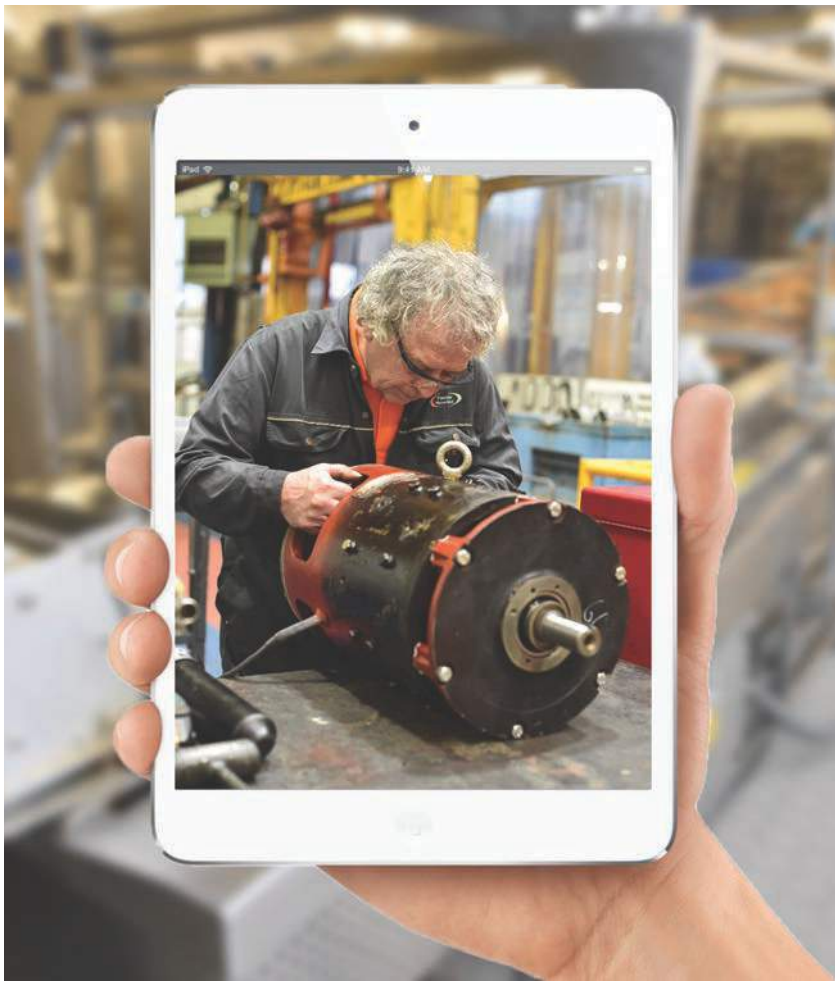
HEAVY DUTY LOOP WINDING PROJECT

Ridgway work closely with their Customer's to develop solutions that meet with their specific demands such as increased production capability, providing automated functionality, consistent performance and reliability and at the same time ensuring operator safety by eliminating any physical operator interventions during normal production.

The latest Ridgway Heavy Duty Loop Winding Line included:-

- 26 – Position Drum Stand with individual cantilevered drum shaft and back tension braking
- Localised operator control station for drum stand tension setting
- Conductor separation, gathering, bunching and guidance system
- Heavy Duty Loop Winder with fully automatic or manual operating modes
- Heavy Duty Winding beam with automatic set up of loop pin tooling positioning for a variety of loop lengths and electrical 'quick release' for ease of finished loop removal
- Servo driven support gantry to cater for the full height of the vertical beam
- Gantry mounted 'Squirrel' Turn Taper (STT) for which the automatic set up and control of taping head speed and STT linear speed is fully synchronised with the rotation and speed of the winding beam. The STT control is scaled to suit the length of loop to be wound.





ServiceVIEW opens up Fletcher Moorland's workshop.

A new system developed for the company has enabled workshop personnel to send service updates and overviews by video to customers, providing transparency and increased trust.

Fletcher Moorland enjoys its position as innovators in the industry. By pioneering new systems and tools, they can often keep ahead of the game and provide their customers with ever better service.

In the past Fletcher Moorland have opened up the doors of their workshop to the Google street view cameras giving customers the opportunity of touring round the workshop from the convenience of their armchair. It proved

a hit with customers who proclaimed, "your place is like the Tardis" or "I never knew you did that..."

They are pioneers in servo motor repair, being one of the first companies in the UK to offer a reliable service back in the 80s. Their decades of experience has enabled them to keep ahead of the competition that has popped up in the following years.

Recently, in late 2015 they launched

SERVICEview. The idea comes from the frustration that customers are unable to see and understand the damage of equipment sent in for service. It's only once the machine is stripped down and cleaned that the full extent of any damage can be examined. So, as with google streetview, they've brought the cameras back into the workshop, allowing customers to understand and view the work required from their own desks.

The idea isn't new, car manufacturers already provide a similar service when customer's cars are in for work. The service automatically builds trust as the customer doesn't feel he's being pushed into paying for something he can't see or is unaware of. Not only that, but it helps to increase turnover, through repeat business built on trust, and increased sales based on a transparent, fact based presentation.

This successful innovation has seen many videos created and emailed to customers with information such as:

- an update on the repair
- faults found in a motor
- an explanation of the repair process they are recommending
- a diagnostic report on a generator
- the programming of an encoder on a servo motor
- a flamepath condition report of Ex d equipment.
- the load testing of a VSD
- the screen on a repaired HMI
- and many, many others.

SERVICEview is simply accessed by clicking a link on an email, Fletcher Moorland have designed the system to allow direct communication with their BOS computer operating system too, this means a communication channel can be opened up with the engineers and workshop repairing your equipment.

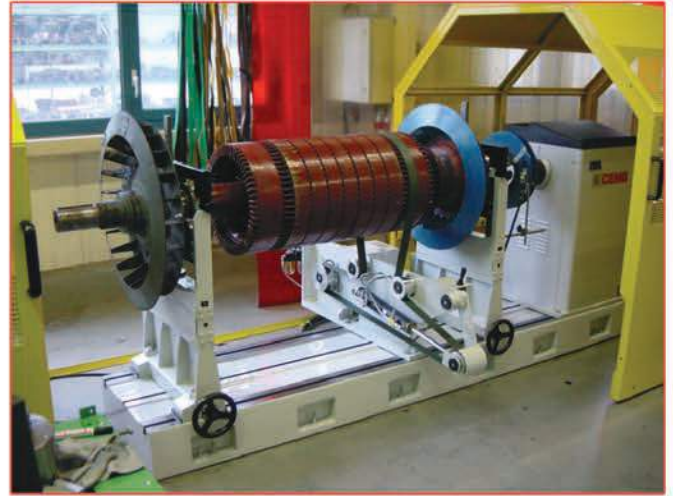
The service is free to customers and has proved to be a great success so far, to view some example videos, visit: <http://fletchermoorland.com/about/serviceview-new-innovation-repair-industry/> ■

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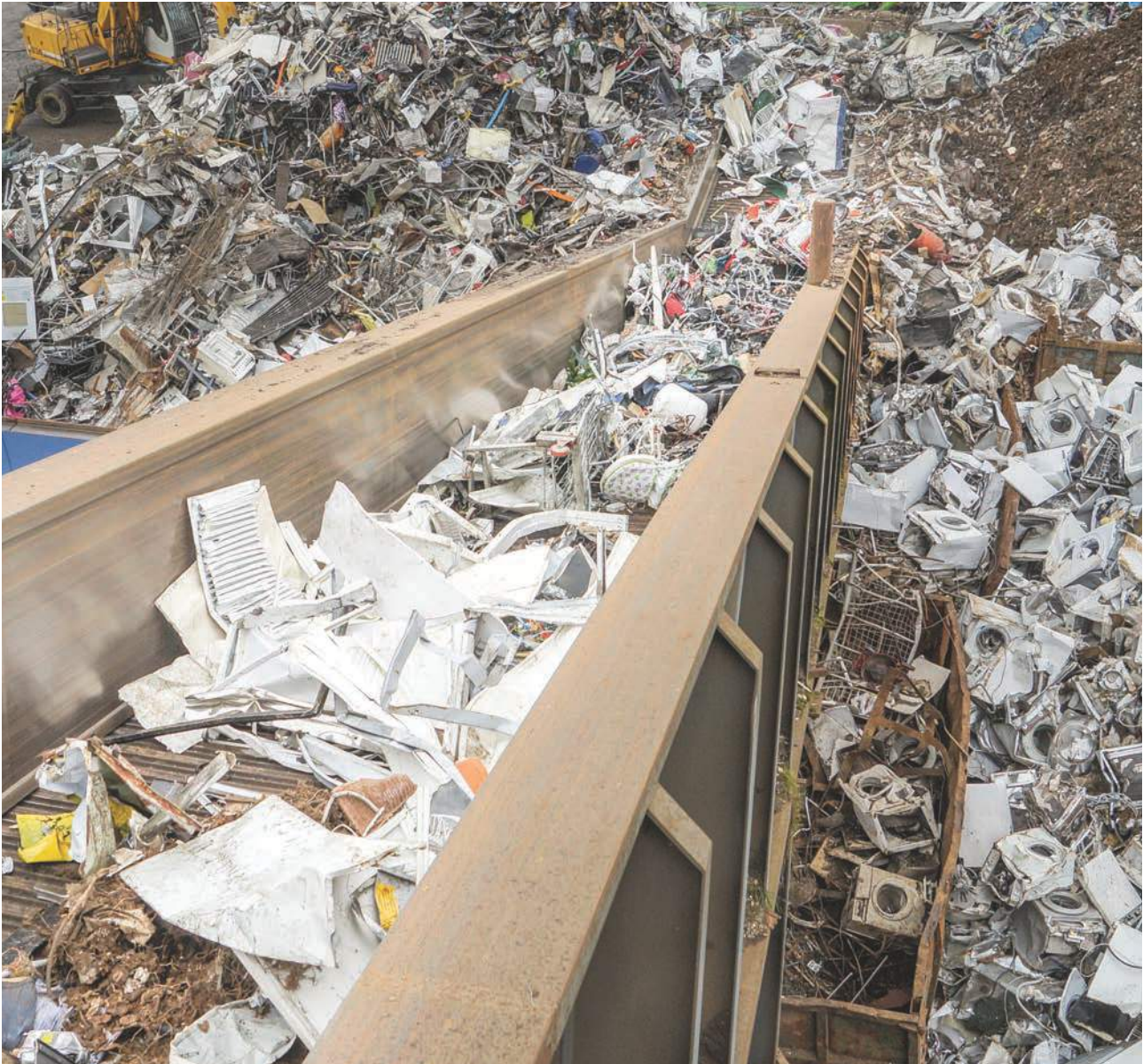


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Sims provides a recycling service for End-of-Life Vehicles (ELVs), industrial scrap, domestic appliances as well as non-ferrous materials.

Sims Metal Management selects bespoke 3MW WEG Motor for shredder application.

Sims Metals Management is the world's largest electronics and metal recycling company. Based in Newark, Nottinghamshire, they process over 1,000 tonnes of scrap per day. When one of their motors failed, Sims were forced to look for a quick solution to replace the motor.



Left: Wayne Oscroft, Electrical Engineer for the Northern Region of Sims Metal Management Right: Gustavo da Silva, Business Development Manager at WEG

The most effective solution was to approach WEG and ask them to design, build and supply a new, bespoke, high voltage motor. With WEG having a history of working with Sims, they were able to design a machine to fit into the exact footprint of the legacy OEM equipment. The bespoke 6.6kV, 10 pole, 3MW motor was the most cost effective option available for the giant shredder.

The Nottingham site has the capacity to process up to 1200 tonnes of scrap metal

every day which arrives from a number of regular customers as well as members of the public. Sims provides a recycling service for End-of-Life Vehicles (ELVs), industrial scrap, domestic appliances as well as non-ferrous materials. All the received material is fed into the shredder by an inclined conveyor where it is literally torn to pieces by the rapidly-spinning hammers. The resulting fragments are then sorted into different categories with the ferrous material being shipped through the rail head on

site to a number of iron and steel works, both in the UK and abroad. In all, Sims exports roughly 2.5 million tonnes of metal every year, with around 60% going to South East Asia.

The relationship between WEG and Sims Group Ltd. goes back several years to when the first motor was installed at the company's Newport site. For the recent installation in Newark, the requirement for a robust, reliable and efficient motor was important, but the principal demand



The Nottingham site has the capacity to process up to 1,200 tonnes of scrap metal every day which arrives from a number of regular customers as well as members of the public. Sims provides a recycling service for End-of-Life Vehicles (ELVs), industrial scrap, domestic appliances as well as non-ferrous materials.

was for a motor which would fit exactly into the footprint of the legacy motor, without any additional engineering.

Engineers from WEG visited the site installation to discuss the list of requirements and to record all the necessary measurements for the design team. With considerable experience in this application, the site engineers understood the demanding environment as well as the customer’s expectations for reliability and efficiency.

Based on the WEG ‘M’ Line motor range, the casing for the 800 frame motor was designed so that the fixing points and the footprint of the new motor would exactly match those of the old motor. With the precise measurements for the drive shaft height and diameter, the installation time for the new motor would be minimised, allowing the Sims installation team to complete the testing and commissioning with a minimum of lost time.

Wayne Oscroft, Electrical Engineer for the Northern Region of Sims Metal Management comments: *“We looked at a number of options for replacing the existing motor, including a new OEM unit or repairing the existing motor. The most cost effective solution was presented by WEG. The key for us is maintaining our operational efficiency so, while cost is always a factor, we needed to minimise the downtime imposed by the motor change as well as ensuring that the new motor would provide excellent efficiency and reliability.*

“Sims has worked with WEG on other projects in the past and that experience,

combined with its reputation, has given us the confidence to place another order with them. The new motor was installed by our engineers without any problems and it has been performing at more than 96% efficiency, which is excellent for this size of motor."

WEG's 'M' Line motor range is designed for larger applications in the output range up to 20MW and voltage range to 13,800V. Manufactured from robust cast iron or welded steel plate, the 'M' Line range of motors provide outstanding performance and high efficiency operation. Key to this performance is a design that delivers excellent structural strength and low levels of vibration and noise. The same design also provides the user with the flexibility for eight different methods of cooling to meet the constraints of different applications.

Gustavo da Silva, Business Development Manager at WEG adds *"WEG worldwide have a vast manufacturing capability, but we also like to work closely with our customers. We've done projects across many sectors including refineries and power stations. We are always looking for retrofit projects and WEG offers a competitive solution for bespoke made to order products."* ■



The Nottingham site has the capacity to process up to 1200 tonnes of scrap metal every day which arrives from a number of regular customers as well as members of the public.



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"WEG worldwide have a vast manufacturing capability, but we also like to work closely with our customers. We've done projects across many sectors including refineries and power stations. We are always looking for retrofit projects and WEG offers a competitive solution for bespoke made to order products."



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An extension in 2015 allowed TEC to create a fantastic showroom to show off their range of stock.

TEC Motors, fortune favours the brave.

Ten years may not seem long ago, but by taking a minute to reflect on 2006 when TEC motors began its story, it's amazing to see what a start-up company had to adapt to: The first Energy efficient motors were only hitting 50% of the market; Tony Blair was running a labour government; The apple iPhone was not yet available; Facebook only had a few thousand profiles, and the term 'to google' was added to the Oxford English Dictionary.



Directors, Scott Edwards, Tina Edwards and Gareth Richardson have had a lot thrown at them over the years. Their ability to adapt and make themselves stronger at every turning point has been the key to TEC's significant growth.

Prior to TEC motors, Tina, Scott and Gareth worked for a division of Turk Electric Motors whose responsibilities were in the drives and automation division. However, with the majority of these motors going to the commercial and domestic markets in the form of white goods, air-conditioners and home appliances, the drives and automation division never had the support it needed to flourish in the UK.

Looking at their position, it was clear what they needed to do; a talk with Turk motors led to Tina, Scott and Gareth taking the division away from Turk motors, and turning it into an independent distributor of electric motors in the UK known today as TEC motors.

As soon as they started, their first major blow hit them; one of the worst global recessions the world has seen. A testament to their adaptability, they saw opportunities when most others were tightening ship. When companies were selling stock and making redundancies, TEC saw the opportunity to acquire good quality stock at rock bottom prices. Rich pickings of the growing unemployment gave them a winning team to battle the next few years of austerity.

Predictably, they weren't going to get the banks on board to help them achieve their growth plans. In fact, they put their necks on the line by re-mortgaging their homes and borrowing as much money as they could. Really it was all down to the water-tight, yet ambitious, business plan. They had faith in their abilities, their team, and they never looked back.

Marching Forwards

Business started in a 4,500 square foot unit with just 6 employees in Droitwich working out of a disused warehouse based within Nu-Way Ltd a long term OEM company. Their aim was to make £2.5million turnover in the first year – far too ambitious for their bank manager to support, all HSBC could offer was their invoice financing service to help with cash flow. One year on, they smashed that record by 20%.

In 2008 they were already able to expand their storage capacity to 35,000 square feet. During 2009/2010, the industry was coming out of recession, dusting themselves off and consolidating what they had left, TEC motors however was on full steam and continued turning over 15-20% above target.

They recognising the need for OEM companies to be able to provide 'off-the-shelf' units along with specialist and custom product solutions on shortened delivery times, so in 2011



Employee of the month from the shop floor, Mark, prepares a motor for delivery.

they opened up their specials division to provide purpose built equipment, bespoke brake units, paint jobs, shaft and flange modifications coupled with geared unit builds. The Worcester facility now has the full machining capabilities to take standard stock motors and modify for encoder fitting, retro brake fitting, customer specific shafts, turning, milling, welding, shaft pressing. Anything that can be done at the factory will be available 'in-house' and at a competitive price.

3 years later in 2014 they extended their capacity by 12,000 square foot to 65,000 square foot in total. The increased space allowing them to store up to £6 million worth of stock. In doing so, TEC have reduced their delivery times and increased their stock profile.

With distribution key to their strategy, TEC have ensured warehouse locations in the North, Scotland, and Wales, to supply a growing number of re-sellers including AEMT members such as Beatsons Fans and Motors, Wilson's, Taylor and Goodman, CPMR, Bellwood and numerous others. This growing mass of suppliers are all part of their overarching strategy to have a TEC motor available to anyone within 50 miles.

Waiting for a factory delivery can sometimes mean waiting 6-20 weeks, and with many customers getting used to an on demand market, it made sense to give them what they wanted. With the new machining facility, they are now able



Trevor Whatmore working in the new special division building bespoke equipment.

to offer single, or low volume special products on a 2 week turnaround.

Warrior Team Spirit

Approaching TEC motors' headquarters through the Rushock trading estate, one starts to notice the company's influence expanding beyond its boundaries. In the

10 years on the estate, they've quickly swelled at the seams and spilled over into nearby units; vying for space.

The Hoplite helmet adorning the company emblem not only reflects their products strength and market infiltration, but also their team spirit. The film 300, which has inspired most of

the company's branding, tells a story of a spartan army (spartan meaning humble/ simple this time) who succeed in austere times and against all odds against the invading Persian forces. Through hard training and teaming together to create a unit as hard as nails, the TEC team/ Spartan army were able to triumph, despite being few in numbers.



Back at the headquarters, stepping through the front door you are immediately faced with a grimacing King Leonidas and his army of Spartan warriors. On either side of him, the walls are splashed with morale boosting quotes. Further on up and the open plan office is swathed with iconography of courageous heroes, trophies of success stories and a large red wall chart growing exponentially along the wall, representing their monthly turnover. In June 2013, a black line shows they reached their £Million monthly turnover mark for the first time.

The office finished their umpteenth expansion at the end of last year, allowing them space for meeting rooms, break-out areas and showrooms for sales and marketing, all decorated in the same powerful iconography.

A Taste for the Oriental

A large amount of their success can be attributed to their Chinese partners, albeit a minor 5% stake in the company, TechTop motors account for the majority of their stock profile. In 2012, they agreed a joint venture partnership with the Chinese mega company that saw 30 containers a month/100,000 motors a year reaching UK shores for TEC's distribution. For every three motors leaving China, two will be TechTop motors. TEC, therefore, also have up to €35million worth of stock available to them from European distributors and a global distribution & support team able to create solutions to almost any problem.

TechTop were the obvious choice among a list of 15 Chinese motor manufacturers. From each company they inspected a batch of motors, and by employing a specialist, they opened up and checked each motor against key quality requirements. TechTop came out top, hands down, and with their global influence, they made the perfect partners.

TEC motors offer 24/7 availability to their stockists and have a wide range of power transmission products in their portfolio. The website if you want to check out their capabilities is www.tecmotors.co.uk ■



An additional 12,000 sq. ft added in 2014 allows TEC to increase their stock profile and reduce delivery times.



Scott Edwards, MD of TEC Motors, has made his office his home.

Leading the Army

With all successful teams, comes strong leadership. Scott Edwards has been MD of the company since inception, and makes sure he knows each one of his 46 employees in person.

Scott makes it his duty to walk around the complex every day and show support to anyone needing it.

There'll be a success story each month, whether that's a sales member exceeding their targets, technicians exceeding their output, or the company smashing another record. So celebrations are often called for.

Scott recently saw an opportunity to have the companies very own, backyard BBQ break out area where hardworking staff can kick back for a few after a hard week.

Both Scott and Gareth decided to take a step back from the open plan office, not to hide away in their own offices, but to let their staff breathe a bit more. They have an open door policy, but crucially, a space in which they can see the company from a different perspective.



AEMT Members Take the crisis out of an Emergency

AEMT members are highly skilled Electrical and Mechanical engineers often prepared to work round the clock to collect, repair and return faulty equipment, and keep downtime to a minimum. Most supply, service, and rewind electric motors, and look at the most economical and energy efficient solution.

The majority also repair pumps with some operating in confined spaces to remove and refit centrifugal and submersible pumps. Many also service gear boxes. AEMT members try to prevent problems and are probably the largest network nationally and internationally of companies able to carry out thermography, vibration analysis, and laser alignment. Their mechanical ability to rebuild and refurbish items is legendary. Many AEMT companies are trained to repair and work in Hazardous Areas, and most offer the quality expected with ISO9001.

So when you require help quickly at 1 am in the morning, or 5 pm on a Sunday afternoon, help is at hand! Whether you are in the UK or in Miri in Borneo, just look up the AEMT Website for a list of companies that are able to help you.

Visit: www.theaemt.com

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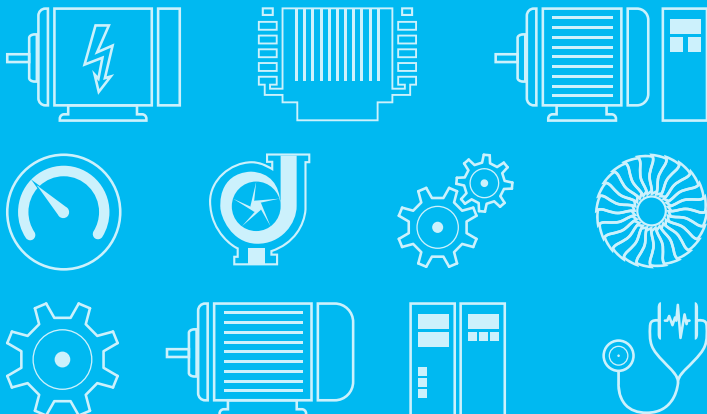
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Entrance is free for anyone to attend. Stand space is also free for members; please get in touch if you are not a member.

The AEMT Conference will host an impressive line up of speakers and be supported by exhibitor stands of motor manufacturers, distributors and other AEMT suppliers.

Speakers will focus on repair, refurbishment and efficiency of rotating electrical machines such as motors, drives, pumps and gearboxes as well as other items of interest.



AEMT's 71st AGM at the Vulcan Experience.

A strong turnout of members and associates started the AEMT's 71st AGM in good stead. The President, Graham Brooker, started by giving many thanks to all those who had worked hard to run the AEMT over the past year from the council and the secretariat. There had been a lot of work in getting a strong structure for the council to grow upon in 2015. Now the council are looking forward to strengthening the board with six more candidates, focusing on the key areas, including training and apprenticeships.

The secretariat's report started with an analytical insight into 2015's activities – the figures showed that 2015 had been a strong year with visits to the AEMT website increasing by 250% year on year. The AEMT had trained over 120 different companies in Ex Repair from Oil

& Gas Companies to Utilities and Pump companies.

Technically, the AEMT has been well represented on various standards committees (IEC, ISO, EN, BSI, ATEX, IECEx and EU Eco-design.) In September Dr. Martin Killeen, currently the lead lecturer for the AEMT, will join the secretariat full time to develop training. With the extra pair of hands available, our activity on standards committees will hopefully increase, as well as getting feedback to members on the developments at these meetings.

The officers for 2016/2017 were chosen with Graham Brooker remaining President for another year, and Gary Downes becoming Vice President and Treasurer. New council members joining the board include: Gareth Williams of

HG Rewinds, Shaun Sutton of Central Group, Simon Brooks of Rotamec, Derry Sheehan of Avonmore Electrical, Dennis Rawle of Exalto and Lucie Hodkova of Exico. Farewells and thanks went to David Rausi at Anstee and Ware, who stepped down from his role on council.

There followed a short discussion on EU membership and Brexit by some of the members at the meeting. A very informal vote after the meeting indicated 6 in favour of remain, 4 in favour of leaving, and 3 undecided. Very similar to the polls at that time.

To finish the day, members were treated to a tour of the Vulcan XH558 Bomber and a fascinating talk on restoring the plane by CEO of the trust, Dr Robert Pleming. ■



- 1. AEMT Members dwarfed by the enormous Vulcan Bomber.
- 2. Inside the Vulcan Bomber - the space was tight to say the least!
- 3. Bill Prior with Chris Waterfall of MicroClutch.
- 4. Scott Edwards and Gareth Richardson of TEC Motors; and Tom Beatson of Beatson's Fans and Motors.
- 5. AEMT President Graham Brooker and members look up into the fuselage.
- 6. Tony Ruane of SKF inspects the entrance hatch with Andy Collins of MKE on the left and Bill Prior on the right.



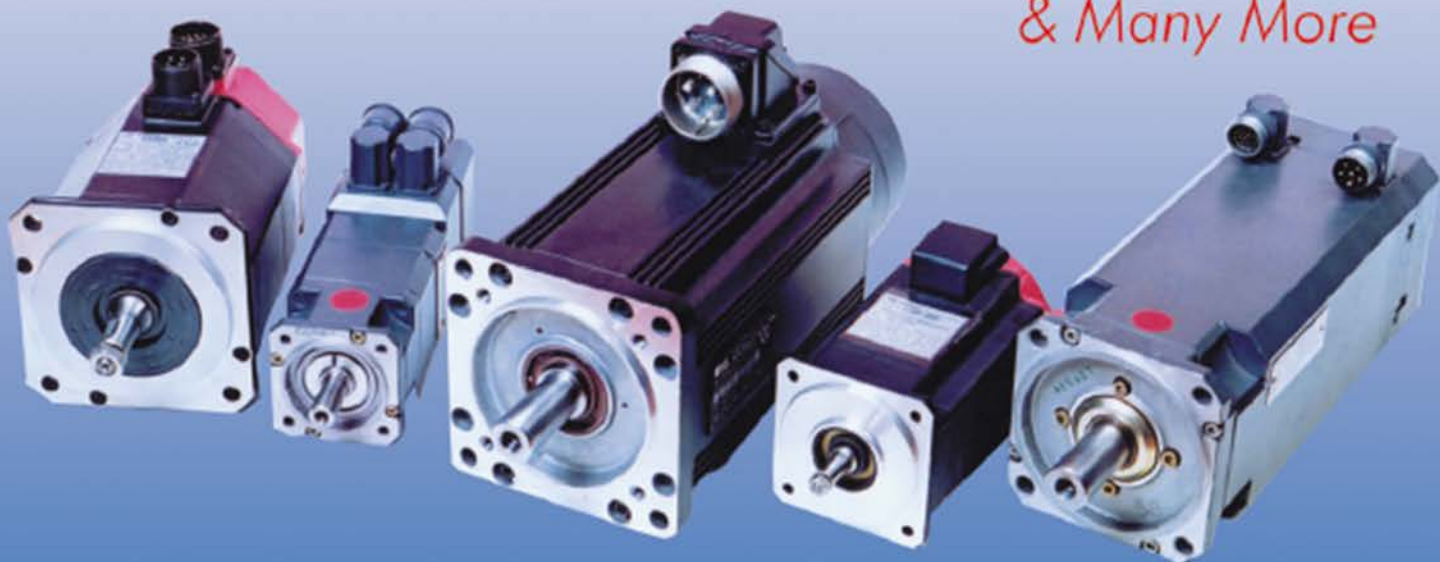
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