The technology leader in shaft hoisting and three-chamber energy recovery systems
or more than 40 years, Winder Controls has bridged the worlds of refined mechanical and electrical engineering with the tough requirements of the mining sector in Africa and around the world to become one of the industry’s contractors of choice and most experienced operators.

Founded in South Africa in 1973 Winder Controls has always specialised in mine hoisting, but as the years have progressed, the Company’s ownership, evolution and diversification has made it one of the go-to players in an industry dependent on operational excellence.

“Winder Controls specialises in the design, manufacture, installation and commissioning of a full range of mine winders and hoisting related equipment, and is proud to have a strong in-house team of service professionals who provide after-sales servicing and maintenance capabilities to the Company’s clients,” Joint Managing Director, Tim Keegan explains. “Since its inception, Winder Controls has supplied more than 800 mechanical and electrical hoisting installations to the global mining industry, including drum, Blair, Koepe and stage winders; as well as a wide range of rope handling systems, auxiliary components, spare parts and services. The Company has also carried out numerous relocations, upgrades and refurbishments of existing equipment.”

Now under the stewardship of the SIEMAG Tecberg Group since 2011, the combination of autonomous responsibility and governance, combined with SIEMAG’s international esteem, technical excellence and product range, has made the business an even more complete package; adding clout behind its market agility to cement its position as a bespoke service provider.
“In addition to its role as an OEM, Winder Controls functions as a systems integrator on major capex projects and since they are not limited to any one specific brand of product they are able to maintain a high degree of flexibility so as to always offer solutions tailored to their client’s needs,” Keegan affirms. “The systems integration role enables Winder Controls to utilise electrical and hydraulic hardware from a range of suppliers in order to align with the broad range of client’s requirements.”

**THE SIEMAG GROUP**

The Siemag Group was founded in Germany in 1871 with the establishment of a Blacksmith’s shop, and over the years has expanded significantly. In addition to Winder Controls, Siemag now incorporates subsidiaries in North America, Australia, the UK, China and Poland. The Group’s core focus is the supply of winders and hoisting related equipment and, in addition, the Company offers specialised equipment for mine cooling and energy recovery, ship lifting and the underground disposal of nuclear waste.

**Optimal performance**

The products emanating from this turnkey approach cover all manner of necessities, incorporating facets from the Company’s origins, as well as more modern innovations, nuances and technological advancements in line with Winder Controls’ own in house development programme as well as with general industry developments. Once again, the emphasis is on creating a flexible solutions-driven offering, capable of catering for any variation of requirements, and providing custom-designed solutions. “This is to ensure optimal performance against our clients’ specifications, operational requirements and budget,” Keegan details. “Our key site services within this include installation and commissioning, site management; site safety compliance; installation procedures; cold and hot commissioning procedures; personnel training; after-sales service and maintenance; dynamic testing; shaft guide alignment testing; and regulatory audits, inspections and compliance testing.”

Winder Controls’ scope typically includes full engineering, supply, installation and commissioning of all electrical, mechanical and hydraulic equipment; including switch gear, transformers, motors and drive systems, control and safety PLC’s, winder drums and drum shafts, clutches, bearings and brake systems etc. In addition to the provision of new equipment, Winder Controls also specialises in the refurbishment, relocation and upgrading of existing machines and accordingly carries a variety of ‘stock winders’ so as to provide clients with fast response times and cost effective hoisting solutions.

KEY PRODUCTS

- **Winders**
- **Brakes and brake control systems**
- **Mobile winches for rope installation and tensioning**
- **Rope handling equipment**
- **Rope attachments**
- **Cage decking systems**
- **Deflection and head sheaves**
- **Rope and sheave compensation systems**
- **Safety arresting systems**
- **Skips and cages**

- **Skip loading and unloading systems**
- **Automated rail car loading and unloading systems**
- **Shaft sinking lashing gear**
- **Shaft communication systems**
- **Engineering analysis of systems and components**
- **Failure analysis**
- **SILS rated equipment supply and compliance checking**
- **Mine cooling chilled water pressure exchange system**

Additional specialist services offered by the Company include detailed engineering analysis of components for proposed new duties, logistical planning and spatial scanning for movement of large components underground, and rehabilitation of gear-sets using scanning techniques combined with unique expertise in order to salvage customised gear profiles from worn or damaged gearboxes.

Keegan continues: “Winder Controls also offer a wide range of motors and drive solutions from various major manufacturers, including TMEIC, Siemens, Rockwell and Schneider.” Drive products include MV VSD’s up to 11kV (ideal for new or retrofit), LV drives up to 690V, DC drives, soft starters and Ward-Leonard drives; while motors include a full range from 380V to 11kV with powers up to tens of MW and speeds from 3rpm to 3,000rpm and above.

Driving this impressive array of products and services are the latest technologies and processes ensuring optimum performance and efficiencies beginning during the design, planning and project control stages. All mechanical design is carried out using a combination of purpose-developed in-house software, 3-D Autocad Inventor and Mathcad - while finite element analysis is carried out using Ansys.

“Electrical design work is done using Eplan and Autocad,” Keegan adds. “Every design undergoes a thorough risk assessment which the client is encouraged to take part in. As required by ISO 9001, a strict document control and quality control system is followed. This is achieved with a Windows Sequel based workflow management system. "The company also runs an ERP system for financial management, procurement, project controls, control of deliveries and stock management.”
TMEIC

One repeat beneficiary of, and contributor to, the Winder Controls service offering is TMEIC (Toshiba Mitsubishi Electric Industrial Systems Corporation), a Japanese expert with whom Winder Controls has developed a close relationship for the supply of high-end drives and motors. TMEIC’s TM10, TM70, MVE2 and TMDC drives have proven particularly relevant to the hoisting application, lending themselves to a series of successful projects between the two companies: including Bulyanhulu (Tanzania) service winder; Assmang personnel/material winder; Assmang production winder; Beatriz 1 shaft service winder; Prestea (Ghana) control shaft #2 man winder; Tautona 97 level rock winder; and Kloof 4 sub-vertical rock winder.

“Winder Controls has made large strides in establishing a solid footprint in the South African mining industry, using TMEIC equipment which is proven to be of exceptional quality with unprecedented levels of reliability and availability.” Keegan says.

Using these tools in combination with its innovative approach, Winder Controls is constantly improving on established concepts while simultaneously carrying out development work on new products. This has allowed the Company to produce the largest Blair winders manufactured by any company to date (7.2m drum diameter, 12MW), a process which required significant innovative thinking and a departure from the traditional approach in the industry of relying on additional mass to cater for the extreme structural requirements imposed on the components.

TMEIC

TMEIC is the leading application expert for high performance drive systems and services, combining strong global capabilities with a flexible customer-centric business approach. As an industrial systems integrator, TMEIC focuses on industrial markets, brings innovation to Industry, takes positive and constructive approaches, and evolves continuously with our customers.

Built on the proud history of Toshiba and Mitsubishi Electric, TMEIC continues to provide high performance, high horsepower rotating machinery, variable speed drives and advanced automation systems to customers around the world. Our accumulated know-how and expertise are applied to create a variety of systems, while cutting-edge technologies are used to implement innovation in production processes.

TMEIC utilises a flexible “hands-on” business approach to become a collaborative solutions partner for our customers offering support across the board; from proposing solutions to post-sale services.

Our proven track record* in providing innovative solutions for hoisting applications, whether riding through 70 percent voltage dips for 500ms or realizing 54 percent energy savings, provides our customers with the confidence that TMEIC is the best partner to meet their production needs.

We are systems integration experts, and have a strong commitment to execution excellence which we use to assure customer success, every project, every time. It is our vision to be recognised as the global leader of industrial drive solutions and the partner of choice for supporting our clients’ quest for operational excellence.

* Bulyanhulu service-winder; Assmang personnel/material winder; Assmang production winder; Beatriz 1 shaft service winder; Prestea (Ghana) control shaft #2 man winder; Tautona 97 level rock winder; and Kloof 4 sub-vertical rock winder.

WINDER CONTROLS (PTY) LTD

TMEIC’s Superior Drive Products

- Unrivalled levels of reliability
- Short MTTR ensuring high availability
- Proven technology suitable for all mining applications

TMEIC, your partner of choice!

TMDrive-MVe2 – 400–7330kVA
- Up to 11kVac
- Closed loop flux vector control or V/Hz.
- Retrofit Friendly
- Full regenerative active front end
- Unity Power Factor & VAR compensation
- Very low harmonics
- Integrated transformer
- Simple air cooled construction

TMDrive-70e2 – 6–36MVA
- 3.3kVac closed loop flux vector drives
- Full regenerative active front end
- Unity Power Factor & VAR compensation
- Very low harmonics
- Compact water cooled construction

TMDrive-10e2 – 15–2750kVA
- Up to 690Vac
- Closed loop flux vector drives
- Full regenerative active front end
- Very low harmonics using LCL filters
- Unity power factor
- High power disturbance ride-through capability
- Simple air cooled construction

Remote Diagnostics available for ALL drive products

Visit our website for further details www.tmeic.eu or contact us directly at info@tmeic.eu
Quality management and production

Keegan continues: “Winder Controls has invested significantly in upgrades to their Wadeville production facility and equipment so as to increase quality and efficiency of production activities. The Company is ISO listed and maintains an extensive QA management system which is regularly verified by the necessary internal and independent external audit processes.

“Assembly and production facilities include a full electrical assembly and testing facility; heavy machining capability; a fully-equipped hydraulic assembly and testing facility; a vertical boring mill; and a horizontal boring mill.”

Long-term success

Complementing the Company’s core functions is an equally stringent and dedicated focus on the wider community, driven largely by its role as a Level 8 BBBEE Company with Empowering Supplier Status which has culminated in numerous corporate social responsibility (CSR) initiatives being conducted over the years.

Being part-owned by Shalamuka Capital - the BEE investment vehicle formed by the Shalamuka Foundation and RMB Corvest - has gone a long way to facilitate this aspect of the organisation.

“The Company is proud to have maintained several CSR initiatives, both through Shalamuka as well as directly to various community projects and selected suppliers,” Keegan emphasises. “This includes Shalamuka’s involvement with Penreach as well as direct contributions by Winder Controls to Freedom Park Secondary School and Luka Primary School in Rustenburg, and also to Badirile Secondary School in Carltonville; for projects including the construction of an under-roof feeding area for 1,600 children a day, the establishment of a secure Gr1 & 2 playground, and the supply of digital and hardcopy material for learners and educators.”

Winder Controls has also involved itself in micro enterprise development, whereby three privately owned micro enterprises were selected for a business development process and management education.

Alluding strongly to notions of sustainability and longevity through this initiative, this reflects a general ethos apparent within Winder Controls, who looks set to ensure even more concerted market growth for the business in the years to come.

“In the highly technical and demanding field of mine hoisting, Winder Controls believes that the key to its long-term success lies in the high quality of its engineering and the provision of top-class project outcomes to its clients,” Keegan concludes.

“In order to achieve this, Winder Controls has invested in the growth of their technical personnel and systems and the Company is home to some of the country’s top electrical, mechanical and hydraulic skills.”