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Government has once again reiterated its intentions to support growth in the mining industry and also spur beneficiation. We wish authorities could walk the talk and make the announcement a reality.

It's depressing to know that government is losing huge sums of money through mining firms exporting copper blisters, which fell short by two per cent for them to be 100 per cent copper.

With beneficiation in place more could be reaped from the copper blisters and even further the chain to have copper products being made local.

The ever increasing unemployment could also become a fairytale, once more industries open up across the country.

Beneficiation would ignite several economic activities for communities to enjoy, while government gets more taxes.

Yaluma and team are exhibiting far more reaching enthusiasm to make an inspiring turn around for the country's mining industry and making it a sustainable mainstay off the economy supporting and boosting other sectors.

Though government directive tend to display authoritarian regimes but for Yaluma's team to be scheduling to put in place plans to direct mines with smelters to invest in processing plants is a welcome development.

Indeed the plants could add value to the copper blisters. We say hooray to that, in whatever good Yaluma is doing for the mining industry the nation should benefit too.

Once the beneficiation dialogue are concluded, authorities intend to woo foreign companies exporting the unfinished copper to establish processing plants in Zambia and add value to copper blisters locally, before exporting.

Yaluma also revealed that government is eager partner with private sector to resuscitate a copper refinery plant.

And talks are ongoing with Konkola Copper Mines (KCM) to reopen its copper refinery plant in Kitwe for the company to be processing copper fully.

Early this year, we congratulated Yaluma for his visionary leadership and keenness to dialogue with stakeholders in the industry, we say, the same should continue.

The minister and his team should remain resolute and press hard where possible so that results can be forthcoming, a revived mining industry should be where the nation pins hope for economic growth.
African Company African Energy is on the brink of closing a deal to sell its uranium project in the Chirundu and Kariba Valley joint venture project tenements and Sitwe North prospect.

The company is selling to GoviEx Uranium Inc, an Africa focused company with on-going exploration in Niger, Zambia, Mali and Namibia.

The company is focused on the development of multiple integrated power projects in Botswana to meet the increasing demand for power in the southern African region.

So far, the company has completed a Joint Venture Agreement with First Quantum Minerals Ltd to jointly develop power generation capacity at the Sese coal project.

Sese is located in close to existing transmission infrastructure and can supply power anywhere into the southern Africa region by virtue of its central location.

The company is also finalizing a development partner for its Mmamantswe coal project located on the border with South Africa.

The project is designated for future power supply into South Africa as part of the Independent power procurement plan recently initiated by the government of South Africa.

Firestone review operations in Lesotho

AIM-quoted diamond company, Firestone Diamonds has recently commenced a review of its current life of mine plan in order to optimise mining operations at its 75% owned Lichobong Diamond Mine in Lesotho.

As a result, the Company is revising its production guidance for the year to 30 June 2018.

Firestone said will be extending the mining of the weathered kimberlite over the coming months, in order to access the lower areas of the pit that have historically yielded higher grade and higher value diamonds.

In addition, it also plans to mine additional waste rock in the coming year, in order to improve the long term mining operations.

However, the overall life of mine carats is not anticipated to change, Firestone now expects to produce between 800,000 and 850,000 carats in the financial year 2018 (previously 1.0 million carats), which is expected to impact revenues in the current financial year.

Government invest in cement plant to diversify economy

Zambia Consolidated Copper Mines Investment Holdings (ZCCM-IH) and Sinoconstr are to build a $548-million cement plant in Ndola.

The development is part of efforts to diversify the economy and reduce reliance on the country's economic mainstay copper mining.

President Edgar Lungu said the two companies will raise financing for the project from local and international financial institutions.

Government has been trying to diversify away from mining to insulate the economy from commodity price shocks by investing in other areas including agriculture.

Lungu said the plant to be built in Ndola would be completed in three years and create roughly 1 000 jobs at construction stage.

"The copperbelt being a largely mining province and with the cyclical nature of this industry that has affected job security, I believe this project could not have come at a better time," the President said.

Lungu further said two 20 MW coal-fired power plants are to provide electricity to the plant expected to have a daily output of 5 000 t of cement.

Illegal miners arrested in Petauke

Thirty illegal Tanzanians miners were recently arrested for working without permits in Petauke district, immigration department said on Wednesday.

Namati Nshinka, Immigration Department spokesperson the Tanzanians were arrested conducting illegal mining activities.

In June, authorities arrested 19 other Tanzanians in the same district over illegal gold mining.

Peatauke district has recorded an increase in foreigners, especially Tanzanians, conducting illegal mining activities.

Recently, authorities in the province revealed that about 5,000 people were involved in illegal mining activities in the province.

KCM calls on government to review energy tariffs

Vedanta developers of Konkola Copper Mines Plc (KCM) have bemoaned the country's electricity prices.

Steven Din, KCM Chief Executive Officer called on the country to have competitive energy prices to sustain growth of the mining sector.

"Affordable and reliable power generation and transmission should be a priority if Zambia is to attain and sustain a targeted annual production of one million plus tonnes of copper," said Din, at the International Conference on Geology, Mining, Mineral and Ground Water Resources.

Din said lower energy costs and prevailing favorable global market prices for metals can help transform the country's economy.

He is optimistic that on-going cost of power study on electricity tariffs to be concluded early next year should provide clarity and help stabilize power tariffs for the sector.

KCM commended government for taking significant steps to ensure reliability in the power sector through the recent commissioning of two new power stations, the 120MW Itzeho-Tezhi Power Station and the 300MW Maamba Coal Fired Power Plant.

"The plans to build the 750MW Kafue Gorge Lower Hydro-Power Project and the 1,200MW Batoka Gorge Hydro-Power Project point to a brighter future in terms of availability of power," Din said.

Mozambique cuts power supply to ZESCO

Mozambique’s power utility company EDM has cut electricity supply to ZESCO over the past seven months, to recover a $100 million debt.

Geta Remigio Manuel Percy, EDM's director of Economy and Finance told media that EDM stopped supply to ZESCO last December for lack of...
payment after debts which totaled to 8 million in 2015 rose to 109 by the end of 2016.

However, ZESCO is still receiving 100MW of electricity from the floating power ship in Mozambique’s port city of Nacala run by the Turkish company Karpower International.

Electricity from the ship is sold under a tripartite agreement between Karpower, EDM and ZESCO, which is separate from EDM’s other bilateral trading agreements with ZESCO.

ZESCO pays Karpower directly for the power and EDM a fee for transporting the power.

Reports indicate that ZESCO is managing to make some payments to Karpower, even if its accounts are not completely up to date.

Percy revealed that Mozambique has presented Zambia with a payment plan, adding that new supply to ZESCO would be dependent on the outcome of the discussions and approval of a new supply contract.

The upward spiral debts for ZESCO and other customers continue to bleed EDM whose key stream of income remain electricity exports to the Southern African Power Pool (SAPP) – an international grid connecting SADC countries.

The company has made up some of the loss of income following the power supply cut to ZESCO through short-term contracts with other buyers.

**Technology spur First Quantum’s operation in Zambia**

First Quantum Mining’s Kansanshi Mine last year produced around 120,000 ounces of gold worth $150 million, amounting to about 10% of the group’s revenue.

The significant gold produce coupled with 250,000 tonnes of copper is attributed to the company’s technology drive operations.

"We are a world-class operation in terms of technology, people and operations," said Assistant General Manager, Meiring Burger.

"We face one of the most complex ore bodies in the world, but we mine it by using world-class technology and expertise," he added.

Burger said the company is always pushing boundaries and trying out new technology.

First Quantum’s mine situated in North-Western province is by far the biggest technological leap in recent years with its new $900-million smelter, which has dramatically boosted its production capacity.

The smelter has an annual production capacity of finished copper anode that ranks among the top smelters in the world.

"Over the years, we have created our own opportunities through investment and innovation," said Burger.

"We need to maintain that investment into the future to extend the life of the mine and to maximize the value of the mineral deposit, but it's not as simple and straightforward as before."

However, power deficit is the most pressing of challenges the company face and constrains the viability of any planned mine or smelter expansion.

Currently there are background negotiations with regard to new electricity tariffs that are expected to be around 9.30 per kilowatt of power.

---

**PUMPS / VARIABLE FREQUENCY DRIVES (VFD)**

**EML** have a date, successfully evaluated and converted numerous Direct on Line (DOL), star delta, soft starters to Variable Frequency Drives (VFD), for various applications, ranging from agriculture to mining.

This work has been guided by the following general principles:

- Defined by type of load requirements and typically used on smaller motors less than 7.5kW – it does not allow motor control.

- Star / delta – decreases the starting current to 1/3, however requires 3 contacts and controller to control change from start in star connection to run in delta.

- Not ideal for high power induction motor starting – does not allow motor control.

**Variable Frequency Drive** – offers continuous and fully adjustable motor speed, typically used for applications with variable load to make energy saving.

- VFD is very versatile, with multiple brake options, multiple speed adjustments, and control from start to stop.

**Typical applications:**

- Low current restrictions i.e. remotely located irrigation system – a drive can offer higher torque levels while remaining below the current requirement of the system.

- Fans – drives can be utilized on i.e. large fans that are required to vary the speed during the process.
Government is mooting plans to put in place a copper beneficiation scheme for both communities and the state to reap more benefits.

Christopher Yaluma, Mines and Minerals Development Minister told ZNBC that government was losing huge sums of money through mining firms exporting copper blisters, which fell short by two per cent for them to be 100 per cent copper.

Yaluma revealed that government is making frantic efforts to guard against capital flight and ensure that value is added to copper before it is exported.

“That blister copper, it contains other minerals in there and when it’s taken out, exported like that, it means where it goes, one, Zambia is deprived of employment,” Yaluma said.

He said processing was done local, people were going to benefit and government coffers also get more from taxes, resulting from proceeds of other minerals found while processing copper blisters.

Together with different stakeholders in the sector government is yet to agree on copper blisters to be processed local.

Government is putting in place plans to direct mines with smelters to invest in processing plants that could add value to the copper blisters, in the next two years.

Once the beneficiation dialogue are concluded, authorities intend to woo foreign companies exporting the unfinished copper to establish processing plants in Zambia and add value to copper blisters locally, before exporting.

Yaluma also revealed that government is eager partner with private sector to reuscitate a copper refinery plant. And talks are ongoing with Konkola Copper Mines (KCM) to reopen its copper refinery plant in Kitwe for the company to be processing copper fully.

Meanwhile government in collaboration with the Mine Suppliers and Contractors Association of Zambia (MSCAZ) is keen to stop the mines from sub-contracting foreign companies to render goods and services when that could be done by the locals.

Apart from beneficiation and localization, authorities have also plans to strengthen mine safety regulations in line with international rules to improve the well-being of workers in the mining industry.

Paul Chanda, Ministry of Mines and Mineral Development permanent secretary said safety cannot be over-emphasised in the mining sector.

Chanda said all stakeholders should ensure that safety and occupational health are adequately funded as they are a worthwhile investment.

“Government will strengthen mine safety regulations in line with international rules to better safety issues in the sector,” he said.
Cranes and port technology provider, Demag Cranes has launched DMR modular rope hoist for diverse applications.

According to the company, the newly-launched Demag DMR modular rope hoist can be adapted precisely to match specific requirements.

With one basic technology, Demag is now able to cover an even broader range of applications than rival products on the market.

"Due to its modular design, the Demag DMR modular rope hoist provides a unique range of possible combinations, enabling the rope hoist to be configured to meet specific needs, thereby providing the perfect 'one-stop' solution," said Richard Roughly, Senior Manager: Sales and Marketing at Demag.

Roughly said customers can specify the design of their rope hoist, and have a choice of options with just one system.

The Demag DMR modular rope hoist is available in two versions, namely a C-design and a co-axial design.

The smart interfaces meant that the Demag DMR modular rope hoist can be supplemented with a range of fittings and accessories that are freely selectable.

In addition, application types, from foot-mounted hoists to double-rail crabs, can all be implemented according to specific customer requirements.

"With its unmatched level of modularity, Demag has made it that much easier to implement more rope-hoist variants than ever before," Roughly said.

The hoist is available in five sizes with load capacities up to 50 t. And controls can be ‘smart’, conventional, or provided by the customer, with a stepless or two-stage drive concept.

Control can also be wire-connected or by radio, depending on requirements coupled with a range of extra safety and control functions.

"Our modular design allows us to offer customers the exact control system needed for their Demag DMR rope hoist. Your equipment can be enhanced for future production and logistics processes due to our innovative control systems, which transform your rope hoist into a smart solution for maximum transparency, safety, and reliability," Roughly said.

The Demag DMR modular rope hoist guarantees reliable operation by means of the tried-and-tested contactor control option.

Roughly said not only can be maintained easily, but it is also available with various control voltages.

An even more flexible option is for customers to implement their own ‘plug-and-play’ controls. In this regard, Demag can supply its own electric enclosure with various cable unions for customer-specific solutions.

Demag’s SafeControl allows for high operating safety, reliability, and efficient production. This feature meets all of the requirements for optimum support of state-of-the-art manufacturing and logistics processes. Thanks to its range of applications, it enables networked production in today’s modern production environment, paving the way for further innovation.

For example, the integrated Demag SmartCheck sensor system detects all of the rope hoist’s operating parameters continuously, and reports them to the control system.

The critical parameters range from information on speed to brake wear and precise overload protection is fitted as standard, giving customers more peace of mind that they have the best total system for their individual applications.

Slack-rope monitoring means that the tension of the rope can be checked continuously. The hoist drive switches off automatically when the load has been lowered to its destination. Bypass control allows for areas to be specified where the travelling hoist is blocked. This means safe bypass of high parts of machinery, for example, or alternatively zones that are out of bounds.

Demag StatusControl also allows customers to monitor complete crane systems in various production facilities and at different locations, regardless of the brand. Target positioning means that loads can be transported automatically to a selected target position, as long as the crane operator presses the corresponding button on the radio control.
First Quantum Minerals’ Kansanshi Mine has posted positive results despite operational challenges, declining ore grades and the need to contain costs.

The company’s 2016 financial results confirm its status as Zambia’s flagship copper mine.

Kansanshi maintained its position during 2016 as Zambia’s largest copper producer (250 000 tonnes), one of Zambia’s largest mine employers (8 700 people) and Zambia’s largest corporate taxpayer (K1.75 billion in income tax and Mineral Royalty Tax).

“We are a world-class operation in terms of technology, people and operations,” says Assistant General Manager, Meiring Burger.

“We face one of the most complex ore bodies in the world, but we mine it by using world-class technology and expertise. Our people are always pushing the boundaries and trying out new technology, which is what you have to do when you are mining low-grade copper.”

Kansanshi is also Zambia’s largest gold mine, and produced around 120 000 ounces of gold in 2016, amounting to about 10% of its revenue.

The key driver of Kansanshi’s continuous improvements in operational efficiency and productivity is constant innovation – sometimes in seemingly insignificant areas of operation.

One example is Trolley Assist, a system that provides Kansanshi’s 180-tonne haul trucks with electrical power on steep inclines, and saves more than $6 million a year in net energy costs. Another is the use of GPS-equipped blast balls to improve the efficiency of blasting.

But by far the biggest technological leap at Kansanshi in recent years is its new $900-million smelter, which has dramatically boosted its production capacity. It has an annual production capacity of finished copper anode that ranks it among the top smelters in the world.

“We need to maintain that investment into the future to extend the life of the mine and to maximise the value of the mineral deposit, but it’s not as simple and straightforward as before.”

The power deficit is the most pressing of these challenges, and currently it constrains the viability of any planned mine or smelter expansion, says Burger. The ability to hire expatriate miners – or expats – is another challenge, says Burger.

Although expats account for less than 6% of Kansanshi’s workforce (a globally very competitive number), they play a central role in training and mentoring local employees in order to increase the Zambian skills base.

“Expats are critical for our success in a competitive, global market,” says Burger. “They bring in vital expertise in implementing new technology and global experience. They allow us to exploit modern technology fully to remain competitive.”

Infrastructure is another area of concern. Burger cites the Solwezi-Chingola road, the key export corridor for copper produced in North-Western province, and a lifeline for Zambians travelling to and from the Copperbelt.

“We’re spending $150 000 to $200 000 a month patching potholes and keeping the bypass roads passable – and that’s after the $4 million we’ve just spent on reconstruction in recognition of the central role the road plays in the Zambian extractive sector supply chain and in the local communities as their principal means of communication,” he says.

“North-Western province is producing most of Zambia’s copper and paying a significant portion of its taxation, and it would be a positive move to see more of that money reinvested for the benefit of the people living and working here.”

There is a lot riding on continued investment at Kansanshi, for it would help to extend the life of the mine, and ensure continued economic prosperity for North-Western province, the article concludes.

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www.miningnewszambia.com
Not many people get to visit a gemstone mine in Africa. So when Gemfields invited me to be part of a press trip to Zambia’s Copperbelt Province—to Kagem, the single largest emerald mine in the world—I jumped at it.

Like India, Zambia was once a British colony, and was known as Northern Rhodesia till it gained independence in 1964. Because of this, almost everybody speaks English, which makes life very easy.

We reached the mining camp on the night of 14th June, and were quickly shown to our rooms. After we had showered, we gathered at the Lake House, the mining camp’s watering hole.

As I had been warned, I took care not to step on the sinuous trails of dangerous army of ants that moved like dark mercury across the walkways. One bite from a single ant is said to be excruciatingly painful. Imagine stepping on an entire foraging party!

The Lake House is exactly what the name suggests. It is a recreation area built on stilts on the bank of a small lake adjacent to the camp compound. This is where the higher-level employees of Gemfields’s Kagem mine congregate every evening to entertain themselves, and sometimes, guests like us.

Kevin Gallacher, mine overseer and all round host-with-the-most, is in charge of the Lake House and its entertainments, and he told me about the lake’s famed crocs.

“This one is a baby; he’s just a metre and a half long,” he said. “When they grow too big, we release them into the wild.” Kevin and his volunteer crew (sometimes including Kagem GM Dibya Jyoti Baral) lure them into a cage and free them outside the mine’s boundaries in one of the many rivers that feed Zambia’s forests. Before Number Seven, the lake has had crocodiles named Butch, Lakehouse, Scarface, and, ahem, Fluffy.

It wasn’t till our third evening that I saw Number Seven gliding silently towards us as dusk fell, no doubt smelling the delicious barbeque Kevin and his mates had got going.

That said, not every waking moment was a party. Emerald mining is a tough business, and how tough, we only got to know when we went into the forests surrounding the actual mining site. To get the precious stones out of the ground, the Kagem teams of engineers, explosives experts, miners, geologists, and other specialists have to work together constantly.

Our first stop was a little patch of primeval jungle near an existing quarry where trained field agents were taking readings of the magnetic activity in the ground. This they had to do on foot in a pre-marked graph-like pattern of straight lines a hundred metres long and spaced 10 metres apart.

This looks easy on a map, but tries doing it in a jungle. With it’s ancient trees, trailing brambles and branches, treacherous anthills and termite nests, uneven ground, rotting leaves, and insects whose sole purpose is to fall inside your collar, it’s not a fun job.

Once this is done, all the data is collected by a master computer and prepared into a subterranean map of what the ore formations and layers look like below ground. Then comes the exciting task of core drilling, for which they use a core driller (what else?). This is basically a long (over 10 metres) hollow pipe with a diamond edged drill bit that bores into the ground. Once it’s pulled out, it regurgitates samples of the layers of the earth that allow Kagem’s scientists to analyse the topography and ascertain if emeralds are to be found where they are digging. Imagine holding a piece of the sample; a chunk of rock that was formed before even the dinosaurs evolved. The experience is spiritual.

And scientific. Because to mine for emeralds, you have to be completely sure where they are. Before you get to them, you have to do a lot of...
preliminary preparation. The area needs to be deforested (sad, but don't worry, it gets better; just read on), the top layers of the soil need to be carted away and put in a safe area, and the seams of emerald-bearing Talc-Magnetite-Schist have to be exposed. After this comes the really difficult part: finding the emeralds. This has to be done manually by trained miners with shovels and pickaxes, working through the long hours of the day, searching for stones that may, one day, decorate the collarbones of a beautiful woman, or dangle from her delicate earlobes.

Emerald is, by nature, a brittle gemstone. It grows in hexagonal crystal structures which are called pencils, and cracks easily. This is why, when cutting a rough emerald, the gem cutter has to preserve the best part of the rough stone, and sacrifice the rest to get the best possible cut from the lump. This means that only about 12-20% of the original rock ends up as a usable, cut-and-polished gemstone. Kagem supplies over 20% of the world's total demand for rough emeralds, and most end up in Jaipur for cutting (as do about 90% of the world's total gemstones. Did you know that?).

Once the mine has been emptied of all of its gemstone deposits, the top soil layers are put back from where they were taken. After this, Gemfields has two choices: One, to reforest the land; two, to give it to the local communities to farm. And here is where the company's CSR kicks in.

The best part about the fertile soil of Zambia is that it takes little work to transform a deforested field into lush farmland. The farmers' main concerns are irrigation (not water, because Zambia is well watered by a network of rivers) and crop rotation. To assist them with this, Gemfields's CSR wing helps them get loans from banks and becomes their guarantor. Then, once the farmers begin producing grains and vegetables, Gemfields buys their entire production to feed employees in the mining camp (filling nearly 900 stomachs three times every day requires a lot of food).

This enables the farmers to pay back their loans on time, and gives them a steady income that leads to a better quality of life. The main surprise, though, was that most of the farmers were women. They really do run the world in the surrounding villages.

While seeing all this and wrapping my head around the beauty of Zambia, the one recurring thought I couldn't get rid of was this: If there are such fabulous natural resources available in the continent, why is Africa still so underdeveloped? A little research threw up this interesting link on Quora, which gave me perspective: On colonialism, the lack of investment in human resource development, and the existing problems of tribal and political instability to name a few. Being Indian, I can understand these problems easily enough.

However, as one of the respondents on the Quora thread said, Africa, like Europe, is a continent.

And like Europe, it has developed and underdeveloped areas. I got to see this myself, because of a delayed flight that stranded us in Lusaka, Zambia's capital, for a night and a day.

The city is beautiful, modern, and highly planned, with malls and restaurants serving a prosperous population that drives Mercedes, Audi, and BMW cars, amongst other makes.

And the work of mining for emeralds is one of many industries that are helping the economy of the country (the Zambian government holds a 25% stake in the Kagem mine).

From Lusaka, as I boarded the flight to Dubai, I realised that I was bringing more than just memories back with me.

I had been given a chance to see a country from a perspective not many people could. And for that, Zambia will always remain one of my favourite places on our wonderful planet.

Source: mensxp.com
Over the years, the Energy Regulation Board (ERB) embarked on a programme to nudge consumers to get actively involved in exerting pressure on service stations to improve service delivery.

The programme dubbed the Service Station Grading Scoring Criteria was mooted essentially to inform all stakeholders (especially consumers) about the state of infrastructure at service stations from where they purchase fuel.

With focus on reliability and safety, the ERB set out to scrutinise the state of infrastructure at service stations dotted around the country through site inspections.

The infrastructure rating system was also meant to motivate licensed companies to improve the state of infrastructure at their respective stations. From the onset, retail sites that fall under the category of rural filling stations as defined in the Zambian Standard (ZS) 703: Rural Filling Station Specification were exempted.

Coincidentally, the introduction of the grading criteria fitted in perfectly with one of the regulator’s objective under the ERB’s 2014 – 2016 Strategic Business Plan ‘to monitor the performance of licensed entities in order to ensure the provision of quality energy products and services’.

Roll out of the grading system’s first phase was conducted in February 2015 covering Lusaka, Kafue, Livingstone, Kitwe and Ndola on a pilot basis. Phase two of the exercise was conducted between November and December 2015 in all provincial centres in the country covering Lusaka, Kafue, Livingstone, Choma, Mansa, Solwezi, Mongu, Ndola, Kitwe, Kasama, Kabwe, and Chipata.

Inspection teams from the ERB’s headquarters in Lusaka and regional offices in Chinsali, Kitwe and Livingstone were despatched to communicate the state of infrastructure at various sites through stickers prominently displayed at inspected sites. Sites scoring 90 to 100% were graded A (Very good); 80 to 89% grade B (Good); 70 to 79% grade C (Fair) and 41 to 69% grade D (Poor).

During the grading exercise, the ERB focused its attention on aspects relating to tanks installed and leak detection, dispensers, safety, fire, environment and infrastructure and ancillary services such as compressor, tyre inflator, functioning pressure gauge and conveniences to rate the filling stations.

The grading criteria has been applied by ERB inspectors only after verifying that a station is compliant since some operational issues hinging on safety and product quality have an immediate and devastating impact.

Service stations found to be non-compliant to safety and quality issues were immediately closed pending rectification of the anomalies noted by inspectors. The regulator only entertained lifting sanctions against erring stations after ascertaining beyond reasonable doubt that the integrity of the quality of the product at a station had been restored.

After phase one and two of the grading system was conducted, the ERB was compelled to return to its drawing board to review feedback garnered from various stakeholders regarding how the system had fared so far.

Stakeholders acknowledged that the system had helped in upgrading the status of service stations in the towns where it was implemented. Feedback pointed to the fact the stickers were too small and not easy to replace.

After reviewing stakeholder feedback, the ERB revised the grading as follows:

- Sites scoring 95 -100% (from 90 to 100%) will be graded A (Very good);
- Sites scoring 80 – 94% (from 80 to 89%) will be graded B (Good);
- Sites scoring 60 – 79% (from 70 – 79%) will be graded C (Fair) and
- Sites scoring 60 – 79% (from 70 to 79%) will be graded D (Poor).

Site failing a technical inspection will have a sticker displaying F (Closed).

The stickers will be valid for a period of six months.

Using the revised methodology to determine the compliance rating for a service station, the checklist for ERB inspectors has been expanded to consider several aspects relating to Safety, Consumer Services, Courtesy, Aesthetics and Public Health.

*The author is ERB Spokesperson/Director – Consumer & Public Affairs.*
40 YRS OF ENGINEERING EXCELLENCE

C.P. Engineering Ltd, a company formed in 1972 and was originally founded by an Italian. It was later purchased in 1975 by the current owners making the Company 100% Zambian owned. Over a period of almost forty years, C.P. Engineering Ltd has grown in size and now has a staff of over thirty eight employees and is sub-divided into four different sections, namely: The Machine Shop, Boiler Shop, Bulk Storage Warehouse and a Retail outlet.

The Company was originally started with only a few machines, but over the years has built a healthy fleet of almost thirty different pieces of equipment which includes lathes, milling, drilling, boring, power saws, welding, pressing, rolling, guillotine and threading machines. All four sections of the Company are spread over an area of sixty five thousand square feet of space with a manager in each section.

THE MACHINE SHOP
The machine shop and the boiler shop are the two original sections of the Company where all our machining and fabrications are done. The machine shop manufactures various types of gears, sprockets, anchor bolts, pins, sleeves, couplings and numerous other products.

THE BOILER SHOP
The boiler shop is involved in fabrication of tanks, repairs and rebuilding axles, repairing dumper truck bodies, bulldozer and excavator buckets, customised containers, and other items as per drawings. Trolleys are also manufactured and distributed to other hardware stores.

Most of the staff have been with the Company for more than ten years and are experienced in various aspects of engineering. C.P. Engineering Ltd has three full time engineers with more than fifty years of experience combined. Over the past years the Company has serviced several different industries such as textile, food & beverage, transport, construction and mining. With the advent of numerous new mines and several new major construction projects, the company is deliberately focusing more on servicing these sectors.

FASTENERS
The third section deals with wide range of fasteners. C.P. Engineering Ltd in recent years has become the country’s largest stockists of numerous types of bolts, nuts, washers, threaded bars, screws, and studs in mild steel, high tensile steel and stainless steel. No other dealer in the country carries as much variety of fasteners.

RETAIL SHOP
Lastly, the fourth section of the Company is the Shop. The storefront has been C.P. Engineering Ltd’s latest expansion to expose the range of fasteners to individuals and other Companies. Additionally, a lot other hardware items related to fasteners have been introduced such as Ring, Combination and Open ended spanners. Impact Wrenches, Screw Drivers, Torque Wrenches and Vices. Pipe Wrenches, Allen keys and complete mechanics, fitters and electrician tool boxes. Items such as welding machines, boiler shop supplies, machine shop tooling, heavy duty jacks, shackles, and numerous other supplies can be found. C.P. Engineering Ltd is an Authorized Exclusive Dealer of High Quality world renowned HEYCO and HYTECH tools of Germany who are also the principle suppliers of all major tools to Mercedes Benz, Audi, Volvo, VW, and MAN trucks of Europe.

In the field of machining tools for the workshop, CP Engineering Ltd are the exclusive agents in Zambia for PILOT TOOLS (PTY) LIMITED of South Africa. Pilot is one of the leading manufacturers of tungsten carbide blanks for the mining industry. Additionally, they also manufacture tungsten carbide metal cutting inserts, brazed turning tools, brazed boring tools, brazed threading tools and also tool holders for the engineering industries.

The management and the engineers of C.P. Engineering Ltd are always available for consultation and professional advice.

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- PILOT
  - Machining Tools (RSA)

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Mauritian company African Property Investments is building a $25 million complex with 10 000 m² of commercial space in Solwezi. The presence of three major copper mines, whose 18 000-plus employees and contractors collectively release millions of dollars of disposable income into the local economy every month has attracted the investor.

The Solwezi City Mall has attracted tenants that include big-name brands such as Shoprite, Woolworths and Mr Price.

"Without the presence of the mines, Solwezi would not be a viable investment destination," says Richard Herring, a spokesman for the company.

"They provide the pool of disposable income that makes shopping malls viable."

On Solwezi’s doorstep is First Quantum Minerals’ huge Kansanshi Mine, whose operations in the area employ some 10 000 people (employees and contractors); an hour up the road, in Lumwana, is Barrick Lumwana mine, with 3 700 people; and two hours away in Kalumbila is FQM’s Sentinel Mine, with some 4 800 people.

By virtue of its proximity to the town centre, Kansanshi has the biggest effect on local consumer spending. But employees of Barrick Lumwana and FQM Sentinel make regular shopping trips to Solwezi too – either in their own cars, or in the buses laid on every week by the mines.

The presence of Solwezi City Mall – and the town’s other two smaller malls – has made a huge difference to shopping habits in the region.

Solwezi City Mall even attracts regular shoppers from across the border in the Democratic Republic of the Congo (DRC), where consumer goods are in short supply.

African Property Investments is no stranger to shopping malls in Zambia. Before building the Solwezi City Mall, the company had also built Kafulu Mall in Ndola, Cosmopolitan Mall in Lusaka and Mukuba Mall in Kitwe. These malls represent an investment of close to $180 million.

The developer’s success in Zambia did not happen overnight, and is based on extensive prior experience both in big cities and in mining towns.

"We’ve always liked mining towns, because of the disposable income," says Herring.

And contrary to what one might expect, he says, mine employees prefer to spend their money in middle-to-high-end stores.

"People are aspirational; we’ve found that cheaper products at the lower end of the market don’t necessarily work."

Knowledge of mines and mining also explains why African Property Investments pressed ahead with the decision to build the Solwezi City Mall, despite the downward trend of the copper price at the time and the impending crisis in global mining.

"Yes, the copper price was going down," says Herring. "But markets recover. We are long-term investors."

The valuable experience gained in Zambia has emboldened the company to expand into its next African market – the DRC. Herring acknowledges that the DRC is a far riskier proposition than Zambia, but he thinks the risk is overstated.

"In any event, risk means opportunity," he says. "We’ve got a good model for our shopping malls. We know the major tenants. We believe that they will follow us into the DRC once they see that things are not as bad as they are made out to be."

In the DRC, as in Zambia, the key investor attraction is mining.
OUR VISION

We are active in the evolution of "machinery" and the synergy between "human" and "business".

We consistently develop and provide our customers with the technology, products and services that generate new value that combines to create rich living spaces, making them more comfortable, highly developed and efficient.

While maintaining profitable operations, we act as a "corporate citizen having good judgment" by staying in harmony with the environment and participating in cultural activities, striving for a symbiotic coexistence with society.

Wheel Loaders

Hitachi’s wheel loaders give you safe, easy operation that even beginners can work with like veteran operators. These user and environmentally friendly machines give you the productivity you need to get the job done.

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When you’re looking for quality Excavators, you know you can rely on Hitachi. Just like our large excavators, the medium excavators are known throughout the world to be well-designed, utterly reliable machines.

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Konecranes is celebrating a milestone of its cranes this year with phenomenal installations across the globe.

Konecranes’ 100th rubber tired gantry (RTG) crane has been installed at the Georgia Ports Authority at the Port of Savannah in the USA.

In South Africa, three 350kg RMG’s have been installed at Transnet in Gauteng.

“It is one of the largest scale installations of RMG cranes ever to be undertaken in Southern Africa”, said John MacDonald, Service, Sales and Marketing Director at Konecranes Southern Africa.

“Weighing over 350 tons, the cranes are each able to move a container every three minutes”.

Konecranes’ RTG crane is an integral part of the global company’s product offering –the productive and reliable RTG was developed more than 20 years ago and remains the top choice for container terminals around the globe.

Konecranes’ RTG has three main features which were part of the design from the start.

The non-hydraulic design, unique to Konecranes’ RTGs in the 1990s, has since been adopted by competitors.

Nonetheless, Konecranes was among the first to realize the immense benefits of non-hydraulic RTG cranes, which are designed to provide higher reliability, less downtime, and lower maintenance and spare part costs, particularly at ports that experience harsh coastal weather.

Two other main features that have remained part of Konecranes’ unique and market-leading RTG design are the Direct Gantry Drive design with 16-wheel mechanism that separated Konecranes’ RTG crane from its competitors’ 8-wheel RTG cranes.

And the increase in wheels from 8 to 16 meant lower wheel loads, less maintenance, and minimal wear to the wheels. The extra wheels also allowed the crane to move sideways, potentially increasing productivity.

The other unique patented feature of the Konecranes RTG is the Active Load Control (ALC) system, which is designed to prevent containers from swaying, and enable the fine positioning of the spreader.

Combined, the features are intended to significantly speed up the container handling cycle, increasing the productivity of yard operation.

The benefits likewise extend past the ease of container handling. With decreased unnecessary movements due to the precision of the ALC system, productivity can remain kept at its highest level and energy-waste can be kept to a minimum.

The use of AC-motors and frequency converters, instead of direct current technology, can also lead to significantly improved eco-efficiency.

Despite the innovative features, Konecranes’ RTG was not a straightforward success story. Konecranes’ approach to the RTG crane was unfamiliar to most container terminal operators, who were hesitant to order the slightly more expensive crane in favor of the more affordable partly hydraulic-driven RTG cranes.
Minerals, metals demand to rise

World Bank says aluminum, copper, lead, lithium, manganese, nickel, silver, steel, and zinc and rare earth minerals such as indium, molybdenum, and neodymium demand is expected to rise, as the world works towards commitments to keep the global average temperature rise at or below 2°C.

In a report ‘The Growing Role of Minerals and Metals for a Low-Carbon Future’, the bank examines the types of minerals and metals that will likely increase in demand to support boom in low-carbon energy technologies.

According to the report, the most significant example is electric storage batteries, where demand for relevant metals: aluminum, cobalt, iron, lead, lithium, manganese, and nickel—could grow by more than 1,000 percent if countries take the actions needed to keep global warming at or below 2°C.

The report shows that a shift to a low-carbon future could result in opportunities for mineral-rich countries but also points to the need for these countries to ensure they have long-term strategies in place that enable them to make smart investment decisions.

— The Bank says in readiness for growth in demand, countries will need to have appropriate policy mechanisms in place to safeguard local communities and the environment.

“With better planning, resource-rich countries can take advantage of the increased demand to foster growth and development,” said Riccardo Puliti, Senior Director and Head of the Energy and Extractive Industries Global Practice at the World Bank.

“Countries with capacity and infrastructure to supply the minerals and metals required for cleaner technologies have a unique opportunity to grow their economies if they develop their mining sectors in a sustainable way.”

The future demand for specific metals is not only a function of the degree to which countries commit to a low-carbon future, it is also driven by intra-technology choices.

The low-carbon technologies that emerge as most applicable and beneficial, will play an important role in defining the commodity marketplace of the next 50 years. For example, the three leading forms of alternative vehicles — electric, hybrid, and hydrogen — each have different implications for metal demand: electric vehicles require lithium; hybrid vehicles use lead and hydrogen-powered vehicles use platinum.

The World Bank says Demand for individual metals and minerals will reflect the component mix of low-carbon technologies, corresponding with economic changes and technical developments.

In addition, the bank says to position themselves well, countries will need reliable sources of economic data and market intelligence, as well as the capacity to turn that information into plans, investments, and sustainable operations.

Based on current trends, it is expected that Chile, Peru, and (potentially) Bolivia, will play a key role in supplying copper and lithium; Brazil is a key bauxite and iron ore supplier; while southern Africa and Guinea will be vital in the effort to meet growing demand for platinum, manganese, bauxite, and chromium.

China will continue to play a leading role in production and reserve levels in practically every key metal required under low-carbon scenarios. India is dominant in iron, steel, and titanium, while Indonesia, Malaysia, and Philippines have opportunities with bauxite and nickel.

A “green” technology future has the potential to be materially intensive, the report states. Increased extraction and production activities could also have significant impacts on local water systems, ecosystems, and communities.

The report further cites that countries should develop their natural resource endowments, to ensure sustainability, environmental protection, and options to recycle materials be integrated into new operations, policies and investments.

The report is intended to contribute to a richer dialogue around the opportunities and challenges for resource-rich countries that a low-carbon future presents.

Meanwhile the analysis is designed to support policy-makers and other stakeholders in the areas of extractives, clean energy and climate change to better understand the issues involved and identify areas of common interest.

www.miningnewszambia.com
Regional News

Vedanta Zinc International’s Black Mountain base metals mine in South Africa’s Northern Cape is reaping rewards from optimising its mining fleet.

The company is now celebrating record production levels and ever-improving profitability.

With 65% of production from cut & fill mining and 35% from open-stopping, the mine operates around the clock.

Black Mountain Mining (BMM) is heavily dependent on its load-haul-dump (LHD) fleet to haul ore in continuous round-the-clock tramming cycles.

The mine requires extreme reliability from the equipment to meet production requirements, as machinery breakdowns can restrict operations in the decline or access to production levels and have severe consequences for production and profitability.

For several years, this had been the case with several of the machines in its 18-strong LHD fleet.

The company’s comparatively low availability had hamstrung the operation and given rise to considerable frustration and lowers than expected production rates on the mine.

However, the tipping point came when management reviewed statistics of machines in the fleet and approached Sandvik Mining and Rock Technology, the OEM with the best performing LHDs on the mine, to replenish and optimise the rest of its fleet in line with the mine’s expectations.

According to Praveen Pinisetti, Sandvik Mining Key Account Manager, the mine has subsequently begun a program to standardise its fleet on the ever reliable and durable Sandvik LH517 (17 tonne LHD) machines and has begun systematically replacing other non-performing utility LHDs.

New equipment usage strategies have also been implemented in partnership with Sandvik and are rapidly improving production.

Since the inception of the program the mine has changed the composition of its fleet from just 7 Sandvik LHDs to 13 out of the 18 machines on site.

Pinisetti said others will be replaced in due course.

“This is an exceptionally tough mine with hard rock and long tramming distances that can reach up to 5.5km (round trip). The remote location of the mine and long tramming distances to surface through an old small decline make ‘swop-outs’ of faulty machines difficult and time consuming. But those are the challenges of the mine and the only solution is to have machines that are more reliable,” he said.

Pinisetti further said the relationship between Sandvik and the mine has developed into a close partnership.

“This is because they realise that for us it’s not just sales talk. We actually do deliver on our promises regarding machines, management services and around the clock support.”

Building on the success of the LHD fleet upgrade and support received from Sandvik, the mine has recently chosen to further expand its fleet with the acquisition of 16 Sandvik units.

The units are working at strategic points where the production units continue to produce above average tonnages at a fast, steady and reliable pace.

Sandvik facilitate Vedanta’s BBM production growth
SERVICES

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A R Controls has successfully supplied and maintained large installed bases of DeZurik KSV severe-service knife gate valves on the Zambian Copper Belt in demanding tailings applications.

The most popular valves supplied by the company are cast stainless steel, urethane-lined and severe-service knife gate valves, as well as high-performance and concentric butterfly valves, general and severe-service ball valves, and non-return valves.

In addition, AR Controls is consistently introducing new and innovative products, adopting the latest technologies and manufacturing methods available to industry.

Julien van Niekerk DeZurik APCO Hilton Director said this is further complemented by new product offerings through its long-term valve manufacturing supplier and US-based valve giant.

AR Controls introduced the DeZurik KUL ductile iron urethane lined knife gate valve to the African market in 2014. “We have enjoyed unprecedented success with this product, creating our own standardisation on most copper- and gold-processing plants throughout Africa,” van Niekerk said.

All the internals of this valve, apart from the urethane lining, as well as the upper works and actuation, are standardised from the stalwart DeZurik KGC Cast Stainless knife gate valve. And can handle pressures of up to 17.2 bar, and has the same face-to-face dimensions as KGC valves.

AR Controls began exporting valves throughout Africa in 1999, and has been growing its market share and footprint steadily ever since. It experienced rapid growth from 2010 onwards, owing to major mining houses developing new assets across Africa to accommodate the rapid growth of the mining industry at the time. “Commodity prices soared, and by 2010 AR Controls was already a well-established name in the African export market. With our infrastructure in place, we were well-positioned to meet our customers’ growing demand for valves and automation,” van Niekerk points said.

Most mining houses have continued to standardise on AR Controls, as its products were already largely the industry standard. “As a result, we have become a household name with many mining giants during the nearly 20 years we have been exporting actively.”

AR Controls not only supplies valves, actuation and control accessories, but also conducts audited plant surveys to optimise a customer’s valve efficiencies to increase plant availability. It offers consulting engineering services relating to pumping systems requiring valves and automation through its engineering department.

The company offers a refurbishing service for its OEM valves that have reached their end of life, restoring them to their original standard for further use at customers’ operations. All valves refurbished by AR Controls have an 18-month warranty (from date of purchase or 12 months from the date of installation), as does any new valve.

“We prefer to see ourselves as our customers’ partners. We do not sell to our customers; our customers buy from us. They get the entire AR Controls package, including superior products, technical expertise, stockholding, and excellent service and aftersales care,” said van Niekerk.

AR Controls manufacturers a comprehensive range of designed to isolate and control the flow of erosive and corrosive media in niche markets across Africa, Australia, Europe, North America and South America.

As the exclusive importer of DeZURIK valves in Africa, AR Controls commands more than 80% market share in niche mineral-processing projects across the continent, while the company’s in-house manufactured and branded ARVALV range continues to gain considerable ground in the international export market.
As latest trends such as Internet of Things (IoT) spurs on continuous innovation, big data and analytics stands a chance to play an increasingly important role in the future of the mining industry.

Jeanne Els, Regional Director, Digital Mining Australasia speaking at the Hatch Intelligent Mining Conference 2017 recently revealed that only 1% to 5% of the data generated by the mining industry is actually used for prediction and optimisation.

Els, however bemoaned that not all the correct data is being collected, and neither is it being stored properly, adding that it is invariably difficult to extract and use to perform analytics.

She said Data is also unavailable in real-time, making the actual decision-making process more challenging.

"The bottom line is that there are tremendous opportunities to use data in the mining industry, and much of it is low-hanging fruit," Els said.

She said a paradigm shift is being driven in the mining industry by the Fourth Industrial Revolution and the advent of the IoT, which promotes connectivity, modularity, and reuse of sensors, data, networks, and platforms.

Els said advances in technology offer the mining industry the opportunity to develop sophisticated models to simulate processes and systems that can then be used for prediction of outcomes and optimisation.

"Once this is done in real-time, you then have the ability to close the loop and introduce automation.

"The aim is to transform mining from a people-intensive industry to an algorithm-based industry, to get to a place where we have codified processes and real-time information to make real-time decisions – that is really powerful," Els said.

She says the first major benefits are decreased variability and increased predictability, which means less unplanned events such as unforeseen stoppages.

"Therefore, we have better health and safety outcomes, and improved productivity and efficiency. We are also actually unlocking new ways of doing business."

However, Els says the biggest challenge for the mining industry was not technology, but being open to collaborative ecosystems and open platforms to drive such innovation.

"What is required to apply digitisation in the mining industry, and to really exploit data, is not a small task. A single mining company cannot do it alone.

"We have to get to a place where we encourage different companies working together on open platforms to develop new applications, and new types of sensors, for example, that will ultimately unlock this kind of value for the entire industry," Els said.
International industrial company Mesto has invested EUR 3.5 million in a crusher wear parts manufacturing plant in Africa, to meet growing demand from the mining industry.

The company is increasing its manufacturing capacity for large crusher wear parts castings used in minerals processing by investing in a second melting furnace at the Isithebe foundry in South Africa.

“The demand for large crusher wear parts is growing in the mining industry. With this investment, we ensure we can meet our customers’ needs. Through the renewal of the foundry, we will improve our capabilities to deliver high quality heavy wear parts,” said Joni Meronen, director of Mining Crusher Wears at Metso.

The renewed foundry will be able to manufacture wear parts for the Nordberg® MP2500 cone crusher as well as for Metso and third-party primary gyratory wear parts with full use of the latest manufacturing technologies.

According to Mesto, the first product deliveries from the new furnace are scheduled for May 2019. During the renovation project, production of castings will continue as usual in the existing facilities.

“We are the leading service partner for the mining industry, and the only supplier able to provide a full portfolio for comminution, from spare and wear parts to equipment and service.

This investment is part of our development agenda to execute our commitment to ensuring availability and reduced lead times for our customers,” said Jose Perez, Senior Vice President of the Crushing and Screening Wears business line at Metso.

Sustainable foundry operations

The Isithebe plant is part of Metso’s global foundry network, consisting of foundries located in Ahmedabad, India; Přerov, the Czech Republic; Quzhou, China; and Sorocaba, Brazil.

The renewed foundry will be built to follow Metso’s strict sustainability and quality principles as well as international standards.

“Sustainability is of utmost importance to Metso. We are developing our operations in a safe and sustainable manner, in close dialogue with local communities,” said Thando Makhoba, Director of the Isithebe Foundry.

Metso services the mining industry - aggregates, recycling, oil, gas, pulp, paper and process industries.
Monitran, a leader in the design, development and manufacture of sensors and systems for vibration and displacement measurement, has launched the latest condition monitoring system that monitors and logs vibration on as many as 32 channels.

The parameters that can be measured include velocity, envelope g and temperature.

According to Monitran, the microcontroller-based system dubbed MTN/5032 has an easy-to-navigate 18.5cm colour touch screen that enables users to set alarm thresholds and delays either individually or across all channels.

In addition, data sampling periods, ranges and accuracy levels can also be easily set.

The channels are configured to customer specifications and offer 12 bit sampling, with an input range of 25 mm/s for velocity and 10 g for envelope g.

Meanwhile temperature channels, which can be used to monitor bearings or gearbox oil for example, can monitor up to 120°C.

AC output data for each channel is accessible via door-mounted BNC connectors for easy analysis, while Modbus and remote PC monitoring are available as options. The stainless steel enclosure provides IP66 ingress protection.

“The versatility of our MTN/5032 makes it ideal for monitoring a wide range of rotating machinery, including industrial, power, water, mining and marine applications,” said Andy Anthony, Monitran’s managing director.

On the locally market Monitran’s MTN/5032 is sold through Instrotech.
Air compressors used in industry are, for the most part, well-proven, reliable pieces of equipment, able to operate for years with relatively little maintenance. However, their very reliability can lead to problems when the quality of their intake air is neglected.

“Many industrial air compressors work in very dusty conditions, particularly in the mining industry, where dust from newly broken rock is particularly abrasive,” said Ian Fraser Managing Director of RTS Africa Engineering.

“If you get dust into the cylinders of a compressor, it combines with the oil to form a highly corrosive grinding paste, which will accelerate wear dramatically,” he adds.

All compressors have their own air intake filters, which are, in the main, designed to filter out tiny low-mass particles. However, if a compressor is exposed to excessive dust from manufacturing or mining where the particles are larger than three microns (μm), the compressor’s air filters block up rapidly.

In this circumstance, one of two things will happen: either, the compressor owner has to spend a lot of money more frequently changing proprietary air filters; or the other potential consequence is that of neglect.

“With a blocked air filter, the compressor is increasingly starved of air and its efficiency levels drop. Ultimately, this leads to compressor failure. With large industrial compressors costing anything upwards of half a million rand, an unscheduled - and urgent - capital requirement for a replacement and the cost of lost production time can have serious consequences for a company,” Fraser said.

RTS Africa spin filters will remove 98% of 15 μm particles and above, 93% of 10 μm particles, and 80% of 5 μm particles. The spin filter is not designed to remove particles of 3 microns or less. However, by using an RTS Africa inertial spin filter to remove most of coarser particles from the air entering a compressor room, the compressor’s own filters will need to be replaced far less often.

Companies purchasing spin filters need to be aware that there are certain manufacturers which claim to be able to remove particles in the 3 micron or less range.

Fraser explains that particles of this size no longer ‘behave’ like particles but rather like molecules - at which point they no longer respond to inertial forces.

“A spin filter consists of a cyclone-shaped tube, through which air is propelled or drawn. On entering the tube, the air is induced to spin using vanes. Particles in the tube move to the outside of the vortex, and the clean air in the vortex centre exits through a central orifice at the end of the tube. A secondary stream of air is used to evacuate the dust-laden air back to where it came from,” he said, adding that it is a very simple concept, which makes it a very attractive proposition in terms of maintenance.

“A spin filter will run for years with absolutely no maintenance as electric motors – the only moving part in the spin filter – require infrequent attention.”

In an alternative application, spin filters can be very useful in the direct ventilation of variable speed drives (VSDs). These are used on many compressors and need to be consistently and continuously cooled.
THE COMPLETE ROCK DRILLING SOLUTIONS

ABOUT US
Innovative Rock Tools Ltd. is a professionally run trading company. IRT vision is to provide our customers with Sustainable Solutions. To achieve our vision, we have to work in close cooperation with our customers and develop deep understanding of end user processes.

- Higher Productivity
- Lower Cost / Meter Drilled

BUSINESS SEGMENTS
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- Water Well Drilling
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- Directional Drilling
- Tunneling

PRODUCT LINES
- Down the Hole Rock Drilling Tools
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- Rotary Drilling Tools
- Diamond Drill Tools
- Horizontal Directional Drilling Tools
- Soft Drilling Anchor Bolting Tools
- Rock Breaker Parts
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- Ddex/Tubex Simultaneous Casing Systems

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ELIS launches heavy-duty magnetic flow meter

Czech Republic manufacturer of electromagnetic and ultrasonic flow meters - ELIS’ latest magnetic flow meter FLONET FS10 is now on offer.

With an induction sensor for the precise flow measurement of conductive liquids, the FS10 has a special wear-resistant lining made from natural stone and is fitted with FISHER-ROSEMONT evaluating electronics.

The ELIS FS10 flow meter is intended for professional flow-rate measurement of electrically conductive fluids, which may include abrasive particles.

According to the developers, the meter has been specifically designed to work in the most stringent of environments - in wastewater treatment plants, industrial plants, as well as dusty, humid or corrosive atmospheres, such as the mining industry for hard-material dredging, the measuring of ash, various types of ore and very dense liquids, with more than 50% solids.

The FS10’s specifications:
- Suitable for pipes: DN100 to DN450 (4” to 18”)
- Pressure ranges: 10 & 16 bar
- Design of sensor: wafer or flanged
- Lining: wear-resistant material
- Liquid temperature scale: 0-150°C
- High accuracy: +0.5% in range to 5 to 100%q 3
- Communication interface: HART protocol

Local, Instrotech distributes various flow meters.

Kobold’s SCH Feature

Monitran, locally represented by Instrotech, has developed a new high displacement test rig that can generate oscillations accurately at frequencies as low as 0.2 Hz.

The system allows real-time back to back testing between different devices and its own built-in, calibrated MEMS sensors.

According to the company, the horizontal linear beam oscillator has a powerful motion control system that incorporates a precision AC servo with 17 bit encoder feedback.

It runs on two precision rails, uses magnetic springs and magnetic damping to ensure smooth operation and its software produces fast code, at 1.7 milliradians per step, which generates fine sinusoidal motion for the linear track driven by a rotary motor.

The intelligent shuttle, which can carry a sensor payload of up to 0.5 kg, incorporates seven MEMS accelerometers, signal processing and a microcontroller to monitor its motion.

In addition, also includes a mechanical low pass filter and has an operating distance of up to 1000mm, exerting up to 8g acceleration to the devices under test. That amounts over 35 kilometres per hour peak velocity, down to nearly 1/20th of walking speed.

“The new oscillating beam rig gives us accurate extreme low frequency data and is a highly useful addition to our accelerometer test and calibration capabilities,” said Andy Anthony, Monitran’s managing director.

Accelerometers and velocity meters are used to measure a wide range of frequencies, including low frequency vibrations found in building maintenance.

They occur at less than 2Hz, and can also be useful in monitoring bearing wear in cooling tower fans and gearboxes for example.
A s part of Kobold's efforts to offer reliable pressure monitoring of plant and machinery and has application in the fields of mechanical engineering, environmental technology and hydraulics, the company has launched model MAN-SD intelligent digital manometers.

The battery-powered devices, which are fitted with piezo-resistive sensors, resist overloads up to three times nominal loading.

In addition, there is a choice between 24 measuring ranges, which extend from 1...0 up to 0 ... 1600 bar.

According to Kobold, the manometer can be installed in such a way that the easy-to-use four-digit LCD display can be very easily read, as both the process connection and the front cover are rotatable.

The company says operation is simple and convenient using three function buttons on the film-covered keypad and the zero point can be set automatically using the zero function, and a freely-selectable password offers protection against incorrect or unintentional operation.

Models with analogue or relay output are available. In the model with a push button and relay, switching point and hysteresis can easily be set using the keypad. The devices can also be provided with a peak value memory.

The robust pressure measuring device fulfils Protection Class IP 65 and is therefore suitable for use in tough applications and all parts which have contact with media are of stainless steel or ceramic.

On the local market Kobold's MAN-SD digital manometers are available at Instrotech.

Vishay 178, a complete monitoring solution

Discrete semiconductors and passive components manufacture – Vishay's Model 178 extensometer is a load sensor designed for force measurement on any load-bearing structure.

According to the company, the new extensometer provides the total solution for weighing, level control, stress and fatigue monitoring.

The design also allows multiple sensors to be permanently mounted for more complex stress profiling and analysis.

Distributed local by Instrotech, the Model 178 extensometer provides the solution for non-intrusive level measurements for materials that are subject to uneven buildup, bridging, or sidewall collection.

In addition, liquids or wetted materials that are not suited for direct contact level measurement are an ideal application for the Model 178 extensometer.

The design of the Model 178 makes it an excellent solution for retrofitting existing structures without compromise of the integrity of the vessel or structure.

The 178 has application in tank weighing or level systems, agricultural equipment, rolling mill sensing, moment sensing, structural loading measurements and bridge structures.
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