PLC CUSTOMER MAGAZINE 2/2019 Massive dry dock in the worl in Northwest Russia A grand day **Diamond bits changing** the Top Hammer scene out in Korea

Robit

DEAR READER,

We have often stated that our success rests not only on our motivated staff, but also on our distributor network across the globe. This was clearly manifested in early September when our key dealers and distributors from all continents gathered in our Distributor Days conference in Tampere, Finland. The successful event demonstrated the high level of commitment our distributor community has in strengthening the Robit brand in the market and in serving our shared customers. Read more about the event on page 6.

We are particularly proud that 2019 has seen Robit grow much stronger in the mining sector. Customers with demanding needs in the industry have found our products to be cost-efficient and of high quality. Several customers have been positively surprised by the reliability of our services and the performance of our products – which shows that we have delivered on our service promise Further. Faster.

Early this year we received the largest project order in Robit's history from Russia. A dry dock construction site chose our sturdiest Steel Fist system – diameter 1.4 m – for piling. A massive job requires massive tools: we also delivered our largest, five-tonne 33" hammer with a 1.5 tonne piston. This project also took us a few steps Further. Faster. Read more on this on pages 4–5.

As a whole, business in 2019 has been developing positively, and the strong Robit team has a very confident outlook into the future.

Tommi Lehtonen *CEO*



IN THIS ISSUE

Editorial	2
Gigantic dry dock rising on the Kola bay	4
Robit Distributor Days - Two days packed with	
information, insight, and industry news	6
Diamond button bits: a game changer	7
$\label{thm:condition} \mbox{Top Hammer Theoretical and Practical Training in Ecuador} \dots$	8
Partnership in the Australian Outback	10
P.T. Marton showcasing Robit in Indonesia	11
Get to know	12
A grand day out for the Korean Robit Team	14

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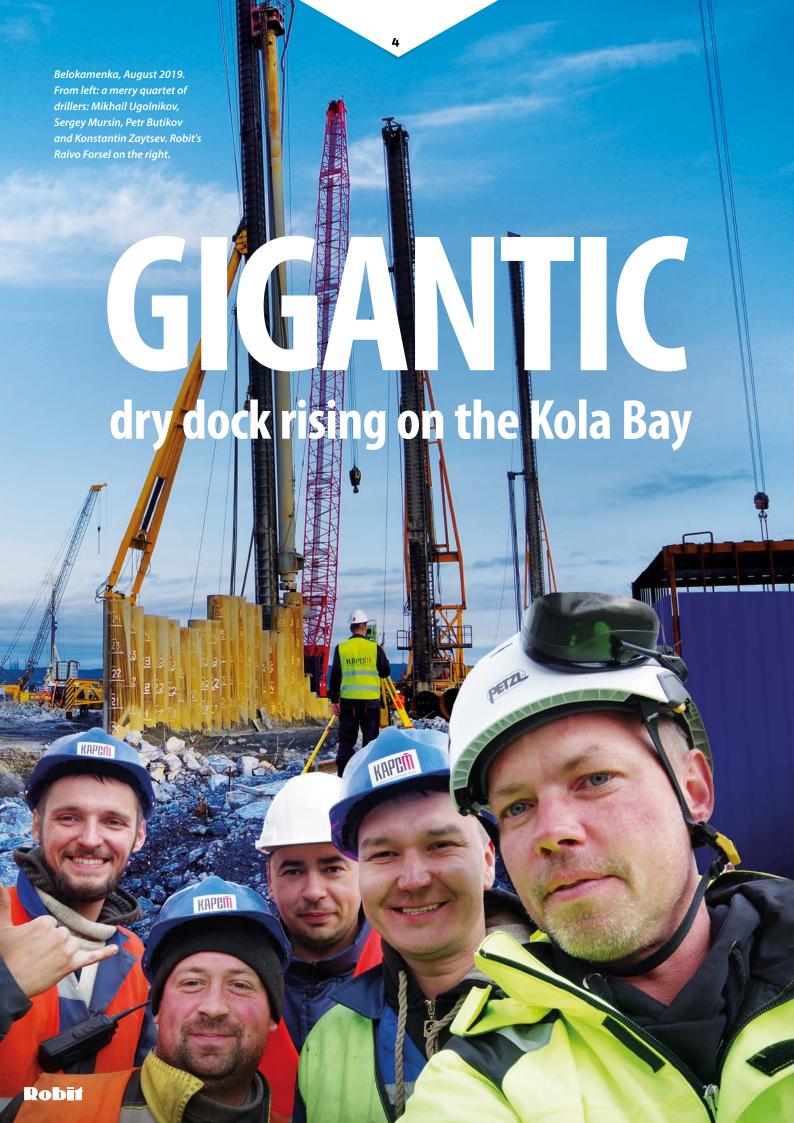
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In the coming years, the use of liquified natural gas (LNG) in transport and industry is expected to grow significantly. That is a key reason why earlier this year, a Robit Steel Fist pilot bit started to penetrate granite rock in the Kola peninsula.

As far as fossil fuels go, LNG is by far the most environmentally friendly – it has the lowest CO₂ emissions per unit of energy while also having the highest heating value. Thus, it has big potential as a future transport fuel alongside biofuels, hydrogen and electric mobility, and most major fossil fuel companies have begun investing in it.

Treasure hidden beneath the permafrost

Russia has the largest natural gas reserves in the world. The bulk of those reserves is sitting under the permafrost in northwest Siberia, in the Yamal Peninsula and its offshore areas. Recent years in the region have seen a massive investment in the so-called Yamal project, a joint venture between Russian, French and Chinese companies, which includes a huge LNG plant, in operation since 2017.

The Yamal project is now being followed by the Arctic LNG-2, another major international joint venture, located in the neighbouring Gyda peninsula. It has an ambitious plan to cut the production costs by placing the LNG production plants offshore in the Gulf of Ob on so-called gravity-based structures (GBS). These reinforced concrete structures are built on a shipyard, towed to the intended location, and then sunk onto the seabed.

Arctic village transformed

Until recently, Belokamenka was a small village just north of Murmansk in the northwest corner of Russia. In 2017 it was chosen as the location for the new shipyard where the GBSs are to be built. This means a massive transformation in the area, covering more than 150 hectares. The shipyard will have two dry docks, each 400 x 175 m, the largest in Russia. Currently the construction site employs some 4,000 people.



UNTIL RECENTLY, BELOKAMENKA WAS JUST A SMALL, SLEEPY VILLAGE.

The construction of pipe pile walls for the dry docks is performed by NK-Teplokhimmontazh and the drilling contractor Spetsfundament Plus. It involves the drilling of no less than a thousand piles, up to 32 metres deep, through sand and loam into the granite bedrock. Their tool of choice for this Downthe-Hole job is the large diameter Robit Steel Fist Casing System. Drilling work on dry dock #1 is now completed and will continue into 2020 on dry dock #2.

In 2022, the first GBS built in Belokamenka is expected to start its 1,600 km voyage, with the help of a powerful tugboat fleet, across the Barents Sea to its destination in the Gulf of Ob.



Two days packed with information, insight, and industry news

Early September 2019 saw 120 participants, including 58 distributors and dealers from 33 countries from all continents, gather for the Robit Distributor Days at the Hotel Rosendahl in Tampere, Finland.

The Distributor Days is a source of valuable product, industry, and business information for all parties. The two-day event consists mainly of presentations, workshops, group work and case studies, divided into four application areas: Top Hammer, Downthe-hole, Tunneling, Piling & Well Drilling.

"The best thing about the workshops is that they provide a two-way channel of information", says **Daniel Palander**, Process Development Manager for Robit, also serving as the Master of Ceremonies guiding participants through the tight programme.

"Presentations by Pinnacle (piling / Canada) and Deltacorp (DTH / UAE), as well as the case study by Sesco (Colombia) were some of the highlights, to name a few. Our new Diamond bits, presented by Jorge Leal, also aroused a lot of discussion".

"We get to showcase any new developments in our product lines, but more importantly, we gain a lot of insight from the case studies presented by our distributor partners, discussing how, where and why we have succeeded in our joint efforts. Those are always valuable learning experiences for us – the best feedback comes from the field", Daniel concludes.

AWARDS 2019

DISTRIBUTOR OF THE YEAR 2019

Norsk Pumpeservice As, Norway

NEW DISTRIBUTOR OF THE YEAR 2019

Pinnacle Drilling Products, Canada

SPECIAL PERFORMANCE OF THE YEAR 2019

Han Viet Mining Equipments, Vietnam Atrium Llc, Russia

Inmin Supplies Cc, South Africa

Diamond button bits: A GAME CHANGER

We all know the basics: the Earth orbits the Sun. Spring is followed by summer. Drill bit buttons are made of hard metal. Right?

It turns out Robit's R&D department didn't want to accept the last one as a given. Hard metal does a decent job penetrating rock – up to a point. Sooner or later, depending on the application and the circumstances, the bit begins to wear down and eventually will need to be sharpened or replaced, causing downtime for the drilling operation.

For five years now Robit has been developing and testing diamond coatings for Top Hammer applications. "We have previously used diamond coating successfully in oil and gas operations in softer substrates", says **Niko Ojala**, R&D Engineer and Materials Specialist. "We are now finally able to offer the durability of diamond for Top Hammer drilling in hard rock."

According to the results of extensive field testing, diamond bits outperform regular Top Hammer drill bits many times over. "In hard granite, you may need to sharpen and/or change a traditional hard metal button bit after 20–80 metres. With a diamond button bit we have been able to prolong the lifetime to 400–1000 meters", Niko says.

"Since the diamond buttons practically don't wear out at all, their penetration rate does not deteriorate and thus the drilling speed remains the same throughout the lifetime of the bit. It also means that the diameter of the borehole doesn't decrease as the bit ages, which gives you more consistent and predictable results in production drilling."

Currently Diamond Button Bits are available for Top Hammer production drilling where the drill bit maintenance is a major bottleneck, especially in remote-controlled settings – so it is a real game changer.

Next up in the R&D pipeline are Diamond Tunneling bits which will notably decrease drilling time for each face, and Diamond DTH bits for mining and well drilling applications. Stay tuned for more news.

Niko Ojala, R&D Engineer and Materials Specialist, proudly presents: a fresh Diamond Button Bit, packaged and ready to be shipped to customers.





TOP HAMMER THEORETICAL AND PRACTICAL TRAINING IN ECUADOR

Training organized by: Maqoperador S.A. (Ecuador) and Robit PLC

Objective: To give Top Hammer drilling tool customers theoretical knowhow

and practical training to ensure maximum drilling performance

Location: Guayaquil, Ecuador **Date:** November 22, 2019

Drill bits used: Robit HTG bit 45C76 DSR vs. a bit from another brand

Reported by: José Rodríguez, Sales Manager, Robit

Summary:

In ensuring maximum performance in Top Hammer drilling, one key element is selecting the optimal drill bit. To this end, a series of training sessions for our customers in Ecuador were organized jointly by **Maqoperador**, the distributor of Robit's tools in Ecuador, and Robit.

In the theoretical part of the training we covered a wide range of topics such as drill string elements, energy flow through the drill string, correct drilling parameters, selection criteria for button bits, and total drilling costs.

For the practical training, Maqoperador arranged a visit to a quarry where the performance of two T45x76 mm bit designs was measured: a Robit Drop Centre Retrac bit vs. a bit from another brand. The other brand had overlarge 13 mm buttons whereas our bit was 11 mm. Typically customers see oversized carbides as a good feature, but our tests proved otherwise.

The difference in penetration rate was significantly in favour of Robit: **1,8 m/min** vs. competitor at **1,06 m/min**. In other words, Robit was faster by more than **70%**.

Being able to drill faster with less effort also means a better energy flow from the drill string to the rock. This is why differences in overheating were also expected between the bits. If percussion energy is not correctly transmitted from the drill string to the rock, it will dissipate into heat, creating additional problems. Due to the overlarge buttons, the energy was not efficiently transmitted to the rock, so the **competitor's bit was overheating the shank adapter at 150 °C**, while with the **Robit bit, the shank adapter kept a much cooler temperature at 98 °C**.

To ensure the reliability of the results, the testing was performed with the same drill rig, the same operator in the same quarry, using the same drilling parameters at a distance of 1 metre between the holes of each bit.

What was particularly rewarding for us to see was how actively the attendees participated in the training. Events like this are very rarely, if ever, arranged by other brands or distributors, so they truly add great value for our customers and help enhance the Robit brand. We will soon be organizing the same training in other parts of the world. Stay tuned!



Partnership in the AUSTRALIAN OUTBACK

Western Australia is a land of extremes. It's sitting on the oldest rock crust on Earth, formed three billion years ago. It's most likely also home to the oldest life forms on our planet, dating back even further, some three and a half billion years.

Today, human life forms in the state are mostly concentrated on the fertile coastal areas. In contrast, the vast central parts – the Outback – consist mostly of sparsely inhabited hot desert. In these circumstances the only significant economic activity is mining. 15% of all the world's iron ore is produced in Western Australia; the state is also a major extractor of gold and bauxite.

A young **Matt Izett** started out as a driller's assistant, or "offsider", for a major drilling operator in Western Australia in the 1980s. By the turn of the century he was managing a branch office of a mining supplies company.

In 2005 Matt took another leap forward and founded Ranger Drilling with his wife Julie, specializing mostly in Reverse Circulation (RC) drilling for customers operating in the West Australian iron ore market. In fourteen years Ranger has, through consistent growth, become a major player in the industry with 19 drill rigs.

A reliable choice for remote locations, RC drilling is a preferred method for mineral exploration. It uses far less water than diamond drilling, making it ideal for arid areas such as Western Australia, where sourcing water is expensive.

Since the beginning, Ranger has made a point of constantly optimizing and customizing tools, equipment and drilling techniques. In this mission, Ranger have enjoyed a great relationship with Robit Australia (formerly DTA) over the last ten years.

Robit supplies Ranger with RC hammers and bits. "We have made DIFOT a priority with Ranger as their business has grown the offering in mining, exploration, and hydro", says **Mark McGrath**, Regional Sales Manager, Robit Australia. "Our team does its best to ensure Ranger can continue to provide world class customer service each and every day."

P.T. Marton showcasing ROBIT IN INDONESIA

"Our focus is to improve connectivity", said Joko Widodo, the president of Indonesia, after his re-election last summer. That focus means increasing investments in infrastructure in the coming years – a trend that was clearly visible at the Mining Indonesia trade fair in September.

P.T. Marton, a leading Indonesian provider of mining and quarrying equipment, has long been an active player in building the country's infrastructure. This was evident at their booth in Mining Indonesia.

"After 30 years in this industry, we definitely have built a strong local presence here in Indonesia and we continuously had influx of clients coming to our booth during the show – from long time clients to even new ones", says **Eunike Dwi Widjaja**, Supporting Manager, P.T. Marton.

The company is the exclusive dealer of Robit's products in Indonesia. Robit's Top Hammer product line and the M-Sense System were on display at P.T. Marton's booth.

"The show was the perfect opportunity for Robit as our principal to meet with clients as many key personnel of the companies came. We have some big prospects in progress with gold mine companies and the show became a good way for representatives from Robit to meet all of them during the exhibition", Widjaja says.

"The meetings we had were fruitful and Robit's presence was really helpful for us as the distributor to convince the customers that Robit is here to support the Indonesian market with full force."

With altogether 740 brands and 39 exhibiting countries, the biennial Mining Indonesia attracted some 28,000 visitors this year, making it the largest mining event in Southeast Asia. No doubt the 2021 event will see an even more prominent presence by P.T. Marton and Robit.



Get to know

MIMOSA SALIMÄKI

Mimosa Salimäki started as Sales Manager for Robit Finland in October 2019. She has extensive field experience in the drilling and blasting industry. Alongside work, Mimosa studies international trade in college. In her spare time she likes to jog with Mini, her Labrador Retriever.

How did you end up working at Robit?

I'd been contemplating looking for new challenges for a while but didn't quite know what it would be. I got a call from Robit asking whether I'd be interested in sales. First it seemed like a distant idea and I said no, but a few months later I'd changed my mind, rang them back and got the job.

What are your key responsibilities as Sales Manager?

I'm responsible for the sales of our quarrying and well drilling products in Southern Finland, visiting job sites and meeting customers.

You have lots of hands-on experience from the field. What was it like to switch to a sales role?

Of course, the sales world is totally different from a driller's or blaster's job, but it's pretty much what I expected it to be. I firmly believe my background is a strong asset among our customers – I know the ins and outs of the industry from experience.



SVETLANA GALINA

Svetlana Galina joined Robit as Business Support Manager for Robit Russia in November 2018. She has several years of work experience in logistics and mining. Svetlana has a musical family with two teenagers. She likes to spend her spare time with the kids visiting museums, the cinema and other cultural activities.

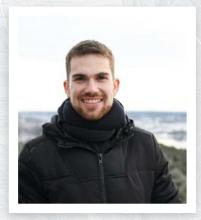
How did you end up working for Robit?

I was on the lookout for a new job. A colleague of mine – who had also been my mentor – had started working at Robit earlier and forwarded me this job offer from Robit. I realized that all the knowledge and experience I had obtained so far would be useful for Robit.

What does your job as Business Support Manager mainly consist of?

Our team is very small, but really professional. My colleagues do a lot of travelling promoting Robit's tools, but there is a huge amount of work in the office too. My key responsibilities include logistics: managing product shipments from Finland to Russia and from us to our customers, as well as collaborating with customs brokers and transport companies. Another key role is sales: placing orders to Robit Finland, creating sales orders, collaborating with accounting, and so on. I'm also in charge of office maintenance.





Get to know

TRENT LEE

Trent Lee hails from Sydney, Australia and joined Robit as an IT Coordinator in May 2019. He has extensive IT experience in a wide range of industries. Trent lives now in Tampere, Finland with his girlfriend. They love hiking, bike riding and other outdoors activities – and Trent has even learned to enjoy mixing a sauna visit with ice swimming in winter.

How did you end up working for Robit?

It's a tale of both sliding doors and perseverance. When I moved to Finland, I originally found work as a cleaner and continued rigorously search for IT related work relevant to my university degree and original career path. One day while searching I found the Robit IT Coordinator job posting on LinkedIn and thought I would be a perfect fit and could offer extensive value to Robit.

What are your key responsibilities as IT Coordinator?

Oversight, communication and coordination of all IT related matters: strengthening information security, improving IT support processes, overseeing the flow of ongoing projects and being hands-on with IT related issues when necessary. It's my responsibility to coordinate resources, support and integration of IT technologies globally to ensure all Robit employees have high quality and readily available access to IT. A segment of Robit's workforce are constantly on the move which requires a very agile approach to IT with a focus on mobility and information security.



Get to know

JOSÉ CISNEROS

José Cisneros joined Robit in May 2018 as Sales Director / General Manager for Robit SAC in Peru. He has extensive experience in sales and marketing in the mining industry. Married with three teenage kids, José enjoys sports and other outdoor activities with his children and likes to travel with the family on vacations.

How did you end up working for Robit?

I got involved with this post through a head hunter. I then had an interview with Robit where they told me about the company in general terms and about their ambitious plans for growth. I knew about the quality of their products and considered this a good opportunity to grow personally and professionally, so I decided to accept.

What are your key responsibilities as Sales Director?

Developing the sales of Robit products in Perú and other assigned countries in South and Central America. Also, as General Manager of the Robit branch in Perú, our main challenge is growing our sales and our market share in a sustainable way. We are focusing mainly on the mining segment, since it is a very stable market looking for cost-efficiency, and we can offer great solutions catering to those needs.

The Korean Robit Team spent their annual Picnic Day climbing the Mani mountain as well as visiting the Jeondeung Temple and the Chojijin Fortress.

All our Korean Robit Team Members and their

All our Korean Robit Team Members and their families gathered on Friday 25 October for the annual Korean Picnic Day – a day to refresh, spend some time together outside the workplace and strengthen the team spirit.

In previous years, the Korean Robit Team has climbed mountains, played paint ball, gone fishing and visited other special spots. This year, our team climbed the Mani mountain on Ganghwa Island as well as visited the Jeondeung Temple and Ganghwa Chojijin Fortress.

Mani mountain, the "Demon Expelling Mountain", is the most sacred site on Ganghwa Island, relatively famous throughout the nation. An ancient stone shrine on its highest peak (469 m), the Chamseongdan, or Truly Holy Altar, commands a wide view of the Yellow Sea. Steeped in ancient myths, the mountain is a spiritual place for Koreans. Just east of Mani mountain, our team also visited the historical Buddhist temple of Jeondeung, more than 1,600 years old. Among its significant architectural works is the main building Daeungbojeon Hall. Decorated with delicate carvings, it is a superb example of the architecture of the mid-Joseon dynasty.

The team also visited the Chojijin Fortress, built in the mid-1600s for defense against coastal attacks by foreign enemies. Chojijin was the scene of many hard-fought battles in the 1870s. Some of the cannons used by the military are on display. The patriotic spirit of the Joseon Dynasty still remains on this historic site.

The highlights of the Picnic Day were definitely the team building and refreshing of the whole Korean Robit Team together with family members. Climbing the Mani mountain, which is famous for its rocky and stiff path to the summit, was a real endurance test bringing all participants closer together.

James Kwack, CEO, Robit Korea



