MINING & CONSTRUCTION

MECHANIZED ROCK EXCAVATION WITH ATLAS COPCO - NO. 3 / 2012



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Atlas Copco

EDITORIAL



After a successful 2012 it is time to reflect on what we have learned as we think about exciting new projects for 2013. We in Atlas Copco Portable Energy Division find ourselves developing new equipment to meet government emission regulations.

While some government regulations are met with resistance, we feel the new Interim (iT4) and Final Tier 4 emission regulations allow us to take a second look at our equipment offering and engineering approach. The key to doing this is listening to our clients' needs and wants for their portable energy equipment. New iT4 equipment incorporates many engineering changes such as VSD fans for reduced horsepower draw on the engine as well as increased cold weather engine performance.

Efficiency to us means many things, not just fuel consumption. All of Atlas Copco's divisions, whether it be underground hauling, blasthole drilling or demolition attachments, consider efficiency in design. We all look at equipment with fresh eyes to continue the never-ending quest to produce the best possible mining and construction portfolio.

We look forward to supplying our customers with equipment that is both fit to their application as well as having the lowest operating cost possible for their projects in 2013. Atlas Copco's Portable Energy Division in particular looks to 2013 with optimism and a continued focus on investment. As a result, Atlas Copco continues to develop new products to satisfy our customers' needs relative to environmental care, efficiency and a better overall cost of ownership.

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Rob JohnstonWestern Regional Sales Manager,
Portable Energy & Construction Tools Division

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Canada, Powercrusher line lasts
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fracture geometry

Atlas Copco shows it's an ace in the hole at MINExpo 2012



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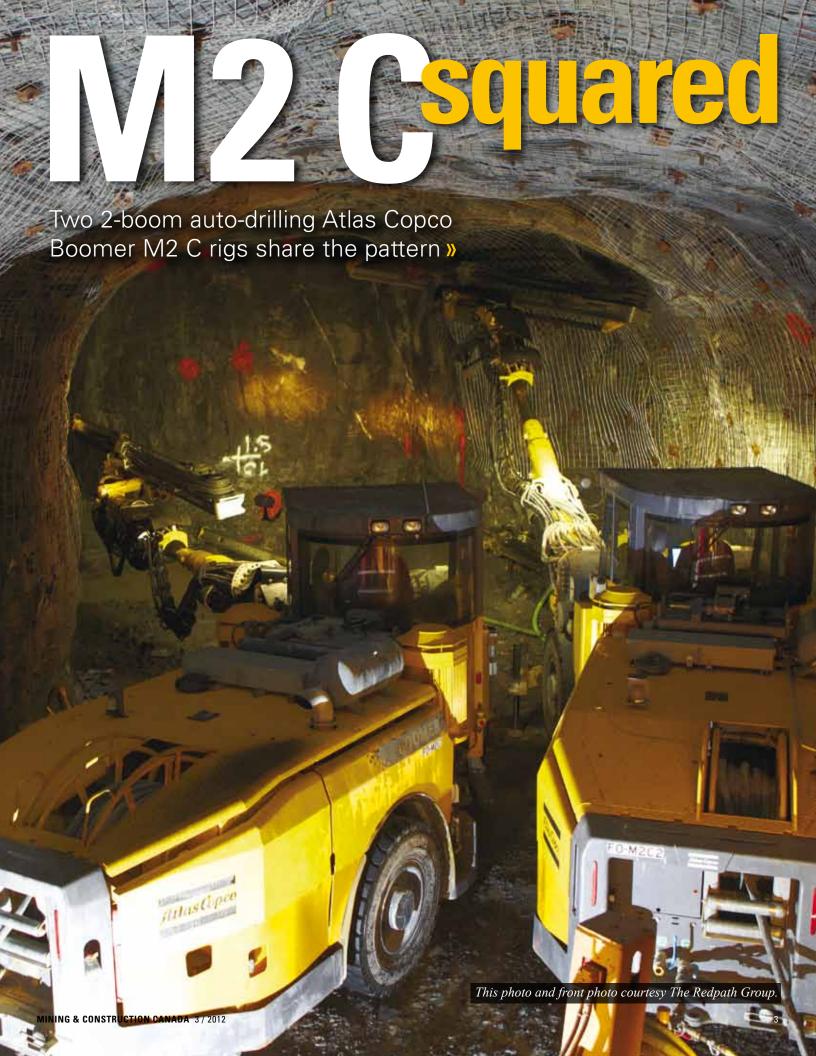
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SAFETY FIRST

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always use proper ear, eye, head and other protection as required to minimize the risk of personal injury.





oldcorp Inc.'s development project Éléonore, situated between the La Grande and Opinaca sub-provinces in the James Bay region, is steadily progressing on schedule for production in 2014. Once it's open for commercial production, the mine anticipates being able to move 7,000 tonnes of rock per day, producing more than 600,000 ounces of gold per year over the mine's 15-year life. It's an excitingly prosperous location, since mining costs here in the Roberto Deposit are predicted to average less than \$400 an ounce.

Staying on schedule, however, hasn't been without its challenges. One problem encountered during ramp development was the springy characteristics of the rock: jumbled sediment and rock in a clay-sandstone graywacke (pronounced "graywacky").

Normal sedimentation tends to sort gravel, silt and mud into layers. Graywacke, however, forms from layers that were stirred up at some point. Not yet the metamorphic stone it is destined to become eons from now. the springy graywacke tends to slow drilling. Fragmented rock within it promotes hole deviation, which can be quite significant over the course of an 18-foot-long, 2 inch diameter blasthole. Shorter rounds do not usually increase rate of advancement, but automated drilling can.

Éléonore's drillers have a trick up their sleeve that fully exploits automated drilling's capabilities: a pair of Atlas Copco Boomer M2 C face drill rigs split the pattern between them, drilling four computer-optimized holes at once.

Laurent Cliche, maintenance general foreman for Goldcorp at Project Éléonore, said all drilling has been assigned to Atlas Copco equipment. Even the company's mechanized bolters are fitted with Atlas Copco hammers. Goldcorp currently owns two Atlas Copco M2 C face-drilling rigs, operated presently by personnel from the Redpath-Tawich-Norascon Joint Venture, a Cri company.



Michel LeDuc, Atlas Copco account manager, and Andre Larouche, Redpath-Tawich-Norason's drilling trainer check in with each other at the project.

The pace of excavation is set by drilling, so ideally any downtime must be minimized, if not completely eliminated. According to Stéphane Langlois, the on-site Atlas Copco technician in charge of the rigs' maintenance, there has been no downtime at all so far, since drills are idle during blasting, mucking and ground support installation of the single heading. Scheduled drill rig maintenance is performed at those times.

Double down

Originally only one Boomer was set before the face at a time, while the other served as a backup to be used during the first rig's maintenance or repair downtime. It was Andre Larouche, the drilling trainer for Redpath-Tawich-Norason, who hit upon the idea of using both Boomers at once, side-byside. If he could split the drill plan between the rigs without risking drill interference or collision, one rig would not have to sit idle while the other worked. What could be a more efficient use of the mine's tactical resources at this phase of the Eleonore project?

Remarkably, Larouche is not an engineer: "He's just an old driller," said Mike LeDuc, the Atlas Copco account manager who works with both Goldcorp and Redpath-Tawich-Norason, whose long career in unground tooling and machinery garners respect as well, has known some of these men more than 20 years. Jerking a thumb toward Larouche, LeDuc said, "This old driller can do anything."

He explained that Larouche is one of the most scientifically meticulous men he's ever met. "He is the kind of guy who, when he comes across a problem, immediately analyzes it, knows what adjustments to make, adds 10 percent here or there, watches the effect, and solves the problem."

Dance of the two drills

Larouche had personally observed underground drilling for nearly a month to ensure he got the synchronization right. His laptop shows how he worked out the way two booms of a single M2 C must approach hole locations so as not to interfere with the other rig's two booms working their own side of the pattern. Each side's perimeter holes, of course, are closer together than the general

coverage area, which presents the primary sequencing challenge.

On the wall above his desk Larouche now keeps an orderly array of drilling diagrams for various assignments, each with its corresponding Rig 1 and Rig 2 USB flash drives pegged to them. Drillers simply come to his office before they start their shifts, locate the plan they will be drilling, take a hard copy printout with their designated memory device, and down the ramp they go with their partner to begin another round.

It's working well. Positioning a Boomer alongside another in the tight confines of the nominal 5-by-7-meter heading is made a bit easier with 4-wheel drive and hydrostatically controlled steering. The articulated carrier has the capability for up 41-degrees of angle. Inner turning radius is just 3.7 meters. Each rig is 2.25 meters wide while moving, and even factoring in their hydraulic jacks, they each require less than 2.7 meters in width while drilling. They fit.

Once the rigs are at the face, fixed reference point lasers, set within the ramp by the survey technicians, train the rigs to their relative locations. Drillers make only two or three holes manually before letting each M2 C rig's computer take control of the BUT 35SL booms with ABC Total. The pattern is easily reached, as boom extension is 1.6 meters, with feed extension of 1.8 meters. Larouche said deviation that had been "just crazy" before automated drilling plans is now far more precise. He spread his hands apart and brought them in toward each other indicating about a foot or so to demonstrate how auto-drilling had tightened up precision and reliability for the 18 foot long (5.5 meter) blastholes. The rigs have each been averaging 25 holes an hour or so on a good face, depending on the pattern.

After the blast is mucked, screening and bolting are also completed by two machines side-by-side, protecting the pace set by the drills. Bolting machine operators secure roof and walls with 2.4-meter-long Swellex as primary support and 4.5-meter-long Super-Swellex as secondary ground support in the intersections. They use two hydraulic bolting rigs outfitted with Atlas Copco COP 1132 rock drills.

Shared responsibilities

The multiphase contract calls for Redpath to complete most of the portal and decline development before turning that part of the project over to Goldcorp personnel. At that >>>



The ramp has now reached a vertical depth of 290 meters. When the Gaumond Exploration Shaft is commissioned in early 2013, Redpath-Tawich-Norascon development crews will transfer and develop the ramp from this location at a depth of 650 meters, excavating up to meet the down ramp midway. The 650 meter level is also where ore will be collected for hoisting during production in the main headframe. At that time the Gaumond Shaft (smaller headframe) will be converted primarily to ventilation and utility purposes.



tion on to completing the mine's small and large headframes. At the time of this visit, the ramp was 2 km long and had been completed down to 290 meters of the mine plan's 1,500 meter vertical depth. At 650 meters depth, Redpath-Tawich-Norascon will swap ends, working from the smaller of the two headframes up toward the portal to meet the ramp's decline midway. It can use the smaller headframe for lowering equipment and extracting excavated material. Then Redpath-Tawich-Norascon will move on to completing the larger headframe. Goldcorp's plan is eventually to use the larger headframe for hauling up ore during commercial produc-

time Redpath-Tawich-Norascon will transi-

that time to ventilation and utility purposes. Goldcorp and Redpath-Tawich-Norascon

tion, converting the smaller headframe by

both take part in hiring labor for the project. As the crew transitions from ramp to head-frame development, they have the option to stay on the ramp as experienced Éléonore staff who will now be working directly for Goldcorp or to continue on with Redpath-Tawich-Norascon. About 40 percent of the personnel at present come from the local work-force of the First Nation communities in the St. James Bay area, particularly nearby Wemindji, as part of the agreement with Tawich Development Corporation an in a collaborative agreement with the Cree Nation of Wemindji, the Grand Council of the Crees (Eeyou Istchee) and the Cree Regional Authority.

Winning formula

Drilling time has been cut nearly in half. Side-by-side, drillers have increased their skills double-time, challenging each other, learning from each other, keeping up with each other to complete their patterns at approximately the same rate. Automated drilling has eliminated any operator-induced variance, and deviation has been greatly minimized.

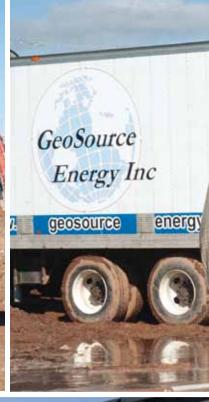
Overall, drilling time is a more predictable part of the excavation cycle, with advances generally completed in 18 hours but sometimes as little as 12 hours. Average daily waste hauled out of the mine during development has increased to about 500 tonnes. And with two more drill rigs arriving by end of year, you don't have to be Einstein to see that "M2 C squared" might just take greywacke's relativity out of the equation for the Goldcorp-Redpath team at Éléonore.

Green-saving geothermal drilling

Energy-saving geothermal drilling gets cleaner with Atlas Copco portable air compressor »







n a new era of energy consumption when everyone is looking for ways to depend less on fossil fuels and more on alternative "greener" options, companies such as Geo-Source Energy Inc. are leading the way to the future. GeoSource is an industry leader in the business of Geothermal Drilling which is essentially the process of installing geothermal loops to facilitate natural heating and cooling. The loop fields they are installing make it possible for large industrial or corporate structures to achieve a net-zero energy footprint.

Helping to reduce the energy needed for the drilling work, GeoSource is using Atlas Copco's XRVS 1000 CD6 portable air compressor with FuelXpertTM technology, a much more fuel efficient option as compared to other existing products currently available in the marketplace.

In business since 2004, GeoSource is owned by three brothers: George, Peter and Stan Reitsma and is based on Ontario, Canada. Stan comments that, "Consumers are looking for energy-friendly homes and structures. It's a grassroots drive to live greener. We are seeing a larger percentage of these types of projects."

The project showcased is for what Stan called a progressive builder, Davies Smith Developments. There will be two parking levels below the living structure with utilities in the basement. The loop field required 76 holes to 170 meters deep. A manifold will bring the loops together and direct the fluid through the geothermal appliances.

Geothermal heating and cooling works simply by passing liquid through pipes. Those drilled pipes (the loopfield) move heat from a building and discharge it into the ground during the summer months. In the winter months the geothermal system draws heat from the earth and delivers it to the building. The geothermal system will pay for itself in five years based on current energy rates. Drilled loops as described in this particular contract are typically more efficient than horizontal installations.

With the company's two drills and one compressor, drilling was scheduled to take four weeks.

"This will be a good looking building when it's complete," said Stan. He said that partly because it won't have rooftop air units. Instead plans call for a rooftop pool and rooftop gardens - a private park for condo residents.

The utilities for this building are provided for in a 30-year contract. This gives the owners a fixed cost for energy that won't spike with fluctuations in energy rates.



Stanley Reitsma stands next to the Atlas Copco XRVS 1000 CD6 compressor that is providing air to two drill rigs.

First on-site

GeoSource is pretty much the first contractor on-site at a building project. The company's specialty is drilling on a future building site before excavation begins on the basement. It's an advantage to work the site alone, with no interference from other contactors and on undisturbed ground.

Although they have tried other compressors with their drill, the company has found success with the Atlas Copco XRVS 1000 CD6 compressor, mostly because of its fuel savings and reliability.

Here the unit was running at 52.8 lph at 80





percent engine capacity. Stan equated this to about 30 to 40 cents per drilled foot for fuel. "Efficiency of equipment can be the difference between making profit or not," he said.

They have found that the XRVS rotary screw compressor, capable of delivering 1,000 cfm at 25 bar (365 psi), uses a third to half of the fuel of their past compressor. It averages about 50 liters per hour, compared to the former unit's 125 liters per hour. The XRVS's Caterpillar C13 Tier III diesel engine and Atlas Copco FuelXpertTM provide efficient air. The FuelXpertTM system electronically regulates engine speed and the air inlet valve to optimize fuel consumption.

To drill shale or limestone, PDC bits are used with the compressor operating at about 100 psi. The compressor sends air through a manifold that splits the air between the two drills. If the dual rotary rig is drilling overburden, GeoSource uses an Atlas Copco Total Depth 3.5-inch hammer with a 4-inch bit, which requires air at 300 psi. In this scenario the XRVS compressor will supply 1,000 cfm of free air delivery at 300 to 325 psi to the manifold valve. The manifold is set up to deliver up to 600 cfm to the dual rotary rig and 400 cfm to the single rotary rig drilling with a PDC bit in the shale below the casing.

Stan likes how the electronic pressure control doesn't freeze up on the XRVS. It also runs much quieter than their old compressor. This is important in the residential areas where they most often work.

Drilling conditions

GeoSource uses a dual rotary rig to advance 133 mm threaded steel casing through overburden up to 100 meters depth. The casing is retrieved after the loops are in place. They use a 100 mm PDC drill bit and 73 mm drill pipe for most bedrock drilling where there is a prevalence of shale and limestone. Typical depths of geothermal boreholes are 150 m to 180 m gut GeoSource has drilled deeper, into the 195-meter range, but Stan said it's necessary to upsize the geothermal pipe if they are going deeper than 195 meters. Depth has increased over the last 10 years from the 100 m range and boreholes up to 300 meters have been discussed.

Laying out the pattern

When the basement is excavated, the holes for the pipe are drilled at an angle to be exactly in the right location. "Vertical is easy. Having to figure the azimuth so the holes are at the exact location two stories below surface takes some expertise."

Stan is a former engineering professor at the University of Windsor, Ontario, Canada whose education includes a geology undergraduate degree and civil engineering graduate degree, so figuring drilling patterns for geothermal wells would be right up his alley. Multiple rows of holes must ultimately line up at the proper depth, each well away from another.

Drilling a series of angled holes so close

(top left photo) The remote control for drilling operations allows operator Andrew Gordon to stand away from the wet area. Once the surface is excavated the holes will line up for easy connection.

(top middle photo) Stanley Reitsma and Peter Reitsma. The mobile grout truck behind them offers a convenient and efficient setup. It's also a great billboard.

(top right photo) Lawren Guldemond

together in the basement of a building that isn't built yet takes some detailed planning. "Our system sets us apart," said Stan. It is a system GeoSource pioneered, which forecasts the angle of the holes so they don't cross, or more importantly, don't draw the ground energy from other holes. They also place a plug at the depth of the future basement to ensure the geothermal loop will remain free of debris during excavation of the parking garage.

GeoSource is just the first of a team of specialists to work on this carbon-free housing project. But with their expertise and experience the site is on its way to a successfully green foundation. •

ROCKSOID CRUSHER

New to Canada, crusher line lasts longer, produces higher quality fracture geometry





For many of Schotterwerk Moersdorf's customers, consistent cubic fractions are a necessity, since their geometry provides superior compaction.



oronto Maple Leafs vs. Montreal Canadiens, Coke vs. Pepsi—only a few brand names evoke the same fierce loyalty that many companies have for their favorite crusher makes and models. That's the observation of Peter Walsh, Atlas Copco Canada's business line manager whose purview includes the new line of crushers, Atlas Copco PowercrusherTM.

"Companies trust the Atlas Copco name implicitly but the Powercrusher models are new to them," explained Walsh. "Companies have to see for themselves how much of an improvement they are over other makes out there." He said

> that's why models such as the Atlas Copco Powercrusher PC3 and PC6 are currently being demoed across the country.

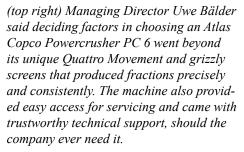
The primary improvements users notice come through the jaw crusher's unique "Quattro Movement" that developed as part of the Hartl line Atlas Copco acquired in 2010. Walsh said: "The Quattro Movement is created by the upswept toggle jaw plate positioning. Other makes have a down-swept design. What companies discover is that the even wearing over the whole jaw makes them last much longer and produces consistent fracturing." The figure-8 motion of the moving jaw also increases the feeding capacity and produces a post-crush at the crusher outlet. And Walsh said its upsweeping motion greatly reduces jamming.

Though new to North America, Hartl crushers have nearly a 30-year track record in Europe. One Luxembourg company reported that it will only run a Powercrusher, saying it cannot afford anything less in the highly competitive European market. Schotterwerk Moersdorf has been a regional leader in the stone and aggregate market for years. It developed loyal customers who depend on Moersdorf's precise and reliable fractured stone quality. The consistent cubic fractions the company gets from its PowerCrusher PC 6 are sought for a variety of applications.

Schotterwerk Moersdorf, which translates as "Moersdorf Gravel Works," operates from a 104-year-old stone quarry in the northwest European Duchy of Luxembourg under Elenz-Goertz family ownership since 1961. Today Moersdorf extracts and shapes natural stone for a variety of end products from backfill, to aggregate for concrete and asphalt, to customizable gabion retaining systems. About 350,000 tonnes of backfill material is sold annually.

Moersdorf's products are also used as road construction base and as aggregate for concrete and asphalt, as well as in public works projects and for horticulture and landscape construction. Some is used as blast furnace aggregate. In addition to providing raw materials, Schotterwerk Moersdorf has also been an industry leader in >>





(right) The excavator's operator controls the Powercrusher by remote control, safely and easily adjusting its position or moving the machine to another task.





asphalt recycling and has become a model of land reclamation practices for mines and quarries. Since 1993, the quarries have been receiving more than 250,000 tonnes per year of soil for quarry reclamation projects, filling in its stone excavations.

Total package: quality, safety and easy maintenance

Moersdorf's Powercrusher PC 6 is used to produce six different fraction qualities. But the machine is also used for recycling concrete and asphalt, resulting in a final product that is perfect for backfill in construction projects.

Independent laboratory tests proved for Moersdorf that the PC 6's Quattro Movement jaw crushers ensure high quality cubical products. The company's road construction clients in particular prefer the cube-shaped fragments, Bälder said. "Cubic stone compacts best," Moersdorf's Managing Director Uwe Bälder said, holding up a neatly square-shaped stone for inspection. "This is what we want."

Bälder said the decision to purchase the PC 6 was based on several other factors, as well, making it a complete package for Moersdorf's operations.

"We bought it because of how its grizzly screen separates the small fraction from the bigger stones so well," Bälder said. The double-deck independent grizzly section operates separately from the hopper and efficiently screens out the fine material prior to it entering the crushing chamber. And by using the screen box, the Powercrusher PC 6 gives operations the ability to produce two sellable products.

"Then there's the crusher, that 'Quattro Movement,' which gives good shape to the stones," Bälder said. "But we also liked that the Atlas Copco Powercrusher PC 6 has a very good access to everything. All three sides are totally 100 percent accessible. And that's a nice thing for maintenance, for service. The competitors do not have this easy access. So, all of that was our reasoning for purchasing the Powercrusher."

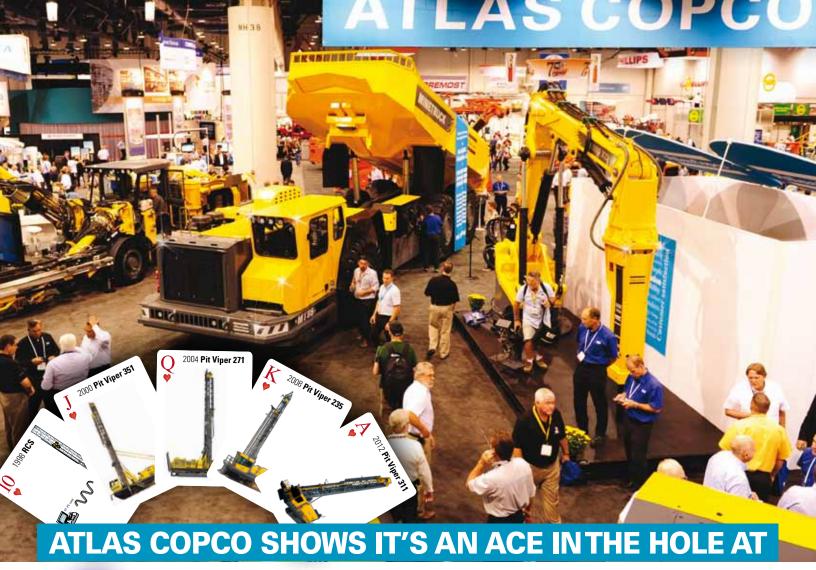
The Powercrusher is remote-controlled

by the operator in the excavator. The operators, Bälder said, can safely and easily adjust the position or move the machine to another task.

Bälder said he counts on his Power-crusher in the competitive rock crushing and concrete business. "It's reliable. We cannot afford any breakdowns because our customers want to have the product in the time, in the quantity and quality we have promised them."

There have not been any major service or repair issues, but Bälder said he is assured by Atlas Copco's technical support. "With Atlas Copco we have this service. We can call them and know we will get the spare parts almost immediately, within 24 hours."

For Moersdorf, a company that specializes in shaping rocks for tight compaction, the Powercrusher PC 6 itself has been a perfect fit. Crusher brand loyalists in Canada need to take a closer look at the new arrival on this continent's shores to see for themselves how the unit can increase profitability and suit their client's needs here. •





tlas Copco was a key participant in MINExpo International 2012—a record-breaking show that drew nearly 55,000 attendees and 19,000 exhibitors to the Las Vegas Convention Center Sept. 24 to Sept. 26. Atlas Copco's commitment to ingenuity and productivity is seen in the state of Nevada, the United States and around the globe. MINExpo, which occurs every four years, is a way to reach out to customers and fellow businesses in the mining community.

Central to Atlas Copco's booth was the release of the latest addition to the Pit Viper family of blasthole drill rigs. The Pit Viper 311 is the first of the new Pit Viper 310 series, offering a range of hole sizes 9 to 12.5 inches that fills in the gap between the hole diameters of the Pit Viper 351 and Pit Viper 270.

Atlas Copco also showed for the first time at MINExpo the world's largest articulated underground mining truck, the Minetruck MT85. It hauls 85 tonnes (93 short tons) while fitting the same drift dimensions of 50 to 60 ton trucks.

Other new products were launched just in time for the show, and other longstanding successes were on display for the mining industry—rock drilling tools, air compressors, boosters, light towers, exploration drills, core drilling products, grouting machines, surface crawlers, underground ventilation, face drilling rigs, ANFO charging truck, long-hole drill rigs, pedestal boom systems and more.

A global vision

The presidents of Atlas Copco's Mining and Rock Excavation sector got together during MINExpo to talk about opportunity, technology and growth.

Today Atlas Copco is diversified to support mining more than ever before. Customers are looking for equipment that will go







deeper, drill faster and produce ore more efficiently—all at reduced costs per drilled foot or excavated ton—and the service and support to go along with it.

President of Atlas Copco Underground Rock Excavation David Shellhammer, said, "We are introducing new products like the largest underground mine truck, the MT85, because mines want to move more material with less effort, and we are also working on mechanical excavation projects that will reduce the number of machines needed for the same work."

One factor driving this focus on equipment is the industry's need for manpower. "I see the lack of skilled labor as the biggest challenge facing our industry," said Shell-hammer.

He also cites miner and equipment safety as future challenges. "Mines are going deeper, which results in the need for better roof stability and also brings attention to the hotter conditions. We need to take this into consideration when engineering products. We are working closely with our mining customers to accomplish this," Shellhammer said.

Andreas Malmberg, president of Atlas Copco's most recently formed business division, Mining and Rock Excavation Service, concurred with Shellhammer's assessment that the customer-manufacturer relationship is the key to success.

"Customers are looking to us to grow. Most customers would agree Atlas Copco's dedication to service defines us, but now with a business focused on service we are expanding our product offering to meet their expectations," said Malmberg. "We know there are 30,000 Atlas Copco rigs in operation around the world. We can provide customers with everything from parts support to training programs and even remote monitoring services. The point is, we are in a position globally to provide what they need."

One of Malmberg's key strategies in the future is training, which fits directly with

focus for Atlas Copco's President of Geotechnical Drilling and Exploration business Victor Tapia. "Training is an investment in a company's future. Ninety percent of our customers are small businesses and supporting new equipment training is critical for our customers' success."

Innovation is also a big part of the growth and future of Tapia's business. "Currently we have a very small market share and lots of opportunity. Our group is about consumables and capital equipment, and though our core business is exploration, we have growing presence in ground engineering."

Tapia said technology is what customers are here to learn about. His group is working on safer and more efficient products as well as a core barrel, for example, that can go deeper and reduce time in the hole.

President of Atlas Copco's Rock Drilling Tools division Johan Haling, the maker of Secoroc products, is onboard with Tapia's thoughts. "Someone who doesn't know



- 1. Atlas Copco Secoroc tools were showcased at MINExpo. New products introduced at MINExpo included the Secoroc PARD system, which combines the best of down-the-hole and rotary drilling technologies, and PrimO pilot bit.
- 2. Customers got first-hand experience inside a Boomer M2C face drilling rig.
- 3. Victor Tapia, Bob Fassl, Andreas Malmberg, Peter Salditt Back row: David Shellhammer, Johan Haling
- 4. Atlas Copco compressors and boosters were on display at MINExpo, including the Hurricane Booster B4-41, Hurricane Booster M-41, XAS1800 JD compressor. Atlas Copco also released the QAC 1250 generator and the QLTS 8 solar powered light tower.
- 5. The Pit Viper 311 was released at MINExpo for blasthole drilling in the 9 to 12 ¼ inch range. It is the first of the 310-series Pit Viper drill rigs. The design focused on a comfortable and productive cab and lifespan savings for the owner.

consumable products may think all tools are alike, but we are making constant improvements that focus on penetration rates and life cycle costs. We have to prove our products, but the little things make a difference."

Atlas Copco Drilling Solutions President Peter Salditt had the largest piece of innovation in Atlas Copco's MINExpo booth. The new Pit Viper 311 stood like a beacon in the exhibit shouting, "Technology!" Centered on the new cab design, controls and monitoring equipment put more power into the operator's hands, while the sleek and smart design gives the new rig a next-generation feel.

"We are making great strides in technological advancement. Rigs are more efficient and safer while providing greater productivity. This MINExpo has been a great success for Atlas Copco to show we are a leader in equipment, and also ideas," Salditt emphasized.

Business Area President of Atlas Copco Mining and Rock Excavation Technique Bob Fassl summed up the comments from group saying, "Atlas Copco is looking at long-term solutions. We need to offer more efficiency and mechanical availability to our customers."

He reflected that it's an "unsure time" for most mining companies. Big companies will cut spending, and small and medium companies will look to efficiencies. The consensus to deal with the future is to be more prudent."

In addition to keeping cost down, Fassl thinks times like this will drive automation and mechanization for products. "As a niche supplier we will continue to develop products that allow mines to be more efficient."

Fassl expects the demand for mined products to remain strong and believes the current slowing of the market will correct itself in time, just as it's always done in the mining industry. "We will continue to offer cost effective solutions and sell products that benefit downstream returns."

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