Rammer®

MAGAZINE

Rammer Beats the Clock in California

PAGE 28

THE OFFICIAL RAMMER CUSTOMER MAGAZINE 1/2015

SAFE AND UNITED

Here at Sandvik, we want our customers to be productive and we want our customers to be profitable. But, above all, we want our customers, their staff, and those living and working around them to be safe. And nothing demonstrates our commitment to safety better than the new Rammer Safety Kits that are designed to provide an operator with virtually every safety item he or she is likely to need during a typical working day. You can read all about the Rammer Safety Kit in this issue on page 6.

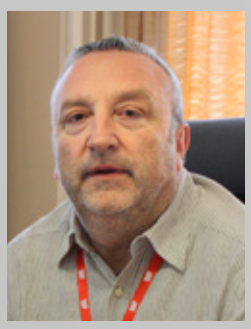
The introduction of the Rammer Safety Kit comes at the end of another challenging yet successful period for Rammer. At a time when many regions of the world are still facing economic uncertainty, Rammer and its global dealer network achieved a 28 percent rise in unit sales compared on the previous year. With those economic uncertainties continuing, the company has redoubled its efforts in existing territories and underlined its commitment to emerging regions with the appointment of a number of hand-picked and highly respected local dealers across Eastern Europe and Africa.

But we're not finished yet. The global dealer network will be strengthened still further this year. And we have also instigated a highly focused and successful dealer training initiative to ensure that our customers across the world receive the same high levels of support and aftersales service regardless of their geographic location.

Those customers have also helped shape the latest products to emerge from our factory here in Lahti, Finland. No-one knows the breaking business better than you – our customers. So who better to help us design and create hydraulic hammers that are application-matched to your requirements? It is our customers who drove the development of the new PRO series of hammers (see inside). And it is our customers who will steer our ongoing research and development to ensure that our hammers match their specific requirements.

In a world that is still filled with economic and political uncertainty, it would have been easy for us to compromise; to ease back on our research and development; to make do with our current dealer network; to get by with our existing product line. But that is not the Rammer way.

We sincerely hope that you enjoy this latest edition of the Rammer magazine and we thank you for being a part of the Rammer world.



Yours Sincerely
Rafa López, General Manager
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Rammer MAGAZINE

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"The global dealer network will be strengthened still further this year."

Rafa López

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DESIGNED FOR EXPERTS, BY EXPERTS

Our willingness to listen to our customer demands and then to deliver innovative solutions for their specific needs has driven an ongoing upgrading and rejuvenation of our product line.

When Rammer customers speak, we listen. We recognize that they know their markets, business potential, applications and work demands far better than we could ever hope to.

So, when our customers told us they wanted an extreme hammer for the very toughest of jobs; a model that is designed to work versatile positions, especially horizontally and tackle tunneling duties in hard rock; a hammer that could withstand high levels of dust; we listened.

And then we acted.

GO PRO

Our team of highly experienced designers and engineers harnessed the very latest technology and advanced materials to create a new model that is every bit as innovative as it is tough.

The result is the Rammer 4099 PRO – an extreme hammer for extreme applications. The new model comprises all the key features that have made Rammer the world's leading hydraulic hammer brand. But it also incorporates a number of key additions that truly take the Rammer 4099 PRO to the extreme.

THE RAMMER WAY

Having overhauled, upgraded and rejuvenated virtually every model in its range, our design team has probably earned a rest. But that's not the Rammer way. Instead, we are continuing to listen our customers and – in the near future – will enlarge the PRO family to include Rammer 2577 PRO and Rammer 5011 PRO hammers too.

Like the Rammer 4099 PRO, these two new PRO hammers will be designed for horizontal working, be easy to install, have dust protected structure and will benefit from an easy-to-maintain water jet system.

And still our work is not done. As well as continually improving our product range, Rammer has demonstrated its commitment to helping customers overcome their own environmental, health and safety issues with features such as:

- Improved water spray to minimize dust
- Effective hammers that help reduce fuel consumption
- Hammers that are easier to install and adjust to eliminate oil spillages
- Easy tool grease adjusting for optimal tool grease use and longer tool life
- A fully sealed housing that is suitable for urban application

We have achieved a lot in the past few years, but we're not done yet. So please keep telling us what you need; and let our designers provide you with a specific solution to your specific challenges.

UPDATING THE SMALLEST

Having updated one of its biggest hammers to satisfy customer demands, we didn't just stop listening.

Instead, we turned our attention to the smallest model in its comprehensive range: the Rammer 155. Suitable for carriers in the 0.8 to 1.8 tonne class, the 90 kg Rammer 155 completes the "double-five" family and utilizes the proven power cell design with PRS (Pressure Release System). Tools are the same as for the Rammer 111. The unit is offered with a sealed side-plate housing construction that allows mounting using bolted mounting bracket or direct Pin-On mounting to linkage, making it ideally suited to rental fleet operations.

COMPLETING THE SMALL AND MEDIUM RANGES

With the smallest model in the range enhanced, our design team then started work on upgrading the largest model in the Rammer Small Range; the Rammer 1322. Like the Rammer 155, this new model is based on a well-accepted power cell design and housing construction. The operating weight for this model is 850 kg, making it suitable for carriers in the 9 to 15 tonnes range.

A fully sealed flat-top housing encapsulates the field-proven Rammer S29 power cell with CBE operating principle that allows a wide oil flow range and easy installation. The Rammer 1322 also has a wide tool selection for every application.

But why stop there? Our design team then set about improving the Medium range with the addition of the new Rammer 1655 and Rammer 2166 models. Like the popular Rammer 2577, these two new models feature a heavy duty housing, Ramvalve, Ramdata II, VIDAT tie rods and an in-hammer adjustable pressure control valve.

The smaller Rammer 1655 has a working weight of 1080 kg and is suitable for carriers in the 12 to 21 tonne class while the 1400 kg Rammer 2166 is a match for carriers from 16 to 27 tonnes. For further operational flexibility, these models can be ordered with Ramlube II and SBS (Soft Blow Sensor) or IBP (Idle Blow Protector) as an option.

GO LARGE

Having upgraded almost the entire product range, it would be unthinkable that the company's largest model wasn't given the same treatment. And so the Rammer 7013 now has VIDAT tie rods together with the Ramdata II service indicator.

Twin Ramlube II automatic greasing devices are offered as an option to improve on this 7000 kg hammer that is designed for excavators in the 60 to 100 tonnes class.

AGW UNIT

For customers working especially in tunneling applications, Rammer has pulled together a full package of auxiliary systems and solutions designed to protect the hammer from the demands of this extreme application, lower owning and operating costs, and to make the Rammer 4099 PRO the toughest breaker in the world.

Rammer AGW Unit (Air, Grease & Water Unit) comprises the proven Ramair II air flush system that prevents potentially harmful dust ingress; the Ramlube I automatic lubrication system to ensure consistent and thorough greasing; and the Rammer Water Jet dust suppression package to minimize the creation of dust during breaking.

Hydraulically-actuated and requiring no additional power supply, the AGW Unit is easy and safe to install and maintain and ensures that the Rammer 4099 PRO and other coming PRO hammers are protected and productive throughout its working life.

SAFETY IS OUR TOP PRIORITY

Reaffirming the commitment to the health and safety of our customers and dealer personnel we have launched our far-reaching "We care about your safety" – awareness campaign. Main target for this campaign is to reinforce our safety image. As a part of the campaign we have launched a new Rammer Safety Kit containing key safety equipment and personal protective equipment (PPE).

EHS as a cornerstone

According to Kaj Koskela (VP, PA Breaking), Rammer is looking to build upon its reputation for equipment innovation, durability and customer care by making environment, health and safety one of the cornerstones of the company's sales and marketing efforts.

"We have worked long and hard to make our hammers and attachments the best, most innovative and most reliable on the market. At the same time, we have taken huge strides to improve the health and safety of everyone involved in the design and manufacturing process," Kaj says.

"With the launch of our campaign, we are extending those same values to our dealer personnel and ultimately to our customers."

The new Rammer Safety Kit comprises important PPE items such as:

- Hard hat
- Safety glasses
- High visibility vest
- Ear plugs
- Protective gloves
- Water bottle
- First aid kit
- Maglite-flashlight
- Bag

To order Rammer Safety Kit please contact your local Rammer Sales Manager.

SMALL HAMMER, BIG RESULTS IN AUSTRALIA

An Australian construction company has put its faith in a small Rammer hammer following a highly successful trial against a competitive brand. The outstanding performance of the small Rammer 455 hammer, combined with the commitment to service and support from the local dealer, Walkers Hammers, were both instrumental in the company's purchasing decision.

With a staff of 10, plus a long-serving team of contractors, Dante Constructions provides a range of building and maintenance services for the Victorian food, paper pulp and manufacturing industries. To provide enhanced levels of service the company recently purchased a 3.5 ton Takeuchi TB128FR excavator, and subsequently went looking for a breaker to work with it.

According to company director Frank Mazzitelli who took over full ownership and management of the family company in 2009, Dante Constructions has made changes in the equipment it operates and what it subcontracts to suit the needs of the projects it undertakes.

"We gave up operating excavators over 10 years ago when I decided to subcontract this work to contractors who I use on a regular basis," he explains.

"However, we recently secured a job where an excavator was needed long-term, so having promised never to own a hydraulic machine again, I decided to purchase a Takeuchi TB128FR. To increase its flexibility, we then decided to purchase a small hammer for a specific project; as I do with most things, I asked around and identified what I thought were the two market leaders, Rammer and another well-known brand. For me, it came down to a trial between these two makes."

Upon being contacted by Frank Victorian Rammer dealer Walkers Hammers was happy to loan Dante Constructions a Rammer 455 for a few days to see how he liked it. However, things didn't go so well with this other brand.

"There was a bit of a delay with the other dealers' availability to provide a breaker, then a further delay because I needed to wait until I returned from leave," Mazzitelli said.

"When the other dealer finally arrived with the hammer, we put it up against the Rammer 455 which was far superior in every way. It then turned out that the other hammer was a previous model, because the dealer was out of stock of the current comparable model – but did not inform me of this before the trial. As the other dealer left the site, knowing he had lost a sale, I called Walkers and asked them to send me the invoice for the Rammer 455."

Comfortable trialing

Overall, Mazzitelli was very impressed with the total Walkers Hammers package – not just the hammer itself, but also service and support.

"From the word go, Walkers couldn't do enough for us," he said. "They were the first to supply the Rammer on site and mount it to my machine. They were happy to leave it with me for a lengthy period of time, which made me feel comfortable trialing the hammer without any pressure and in my own jobsite. It hasn't missed a beat. It's a small hammer, on a small machine, and currently we are using it primarily to break up factory concrete floor slabs and plinths. It's operating in pretty tight spots, breaking relatively high strength concrete, and I would say it performs magnificently."

Frank Mazzitelli is equally impressed by the attitude of his local Rammer dealer. "Every step of the way, Walkers has been understanding; they assured me the hammer would speak for itself, and it certainly did. I've only got really positive things to say about Mike and Tino from Walkers." Mazzitelli concludes: "Their credentials certainly shone through when I spoke to others in the industry; everyone I spoke to had positive things to say about them."

FOR THOSE ABOUT TO ROCK

An Australian quarry operator has demonstrated its faith in the Rammer brand with the purchase of another new Rammer 4099 for a hard rock quarry application.

WA Limestone is a family-owned company that has been operating for over 40 years. With a strong emphasis on customer service and satisfaction, WA Limestone is now one of the largest suppliers of granite armour stone, magnetite, quarry & construction aggregates, road construction materials, and marine infrastructure in Western Australia.

As part of an ongoing growth, the company has expanded its fleet of Rammer hammers with the purchase of a new Rammer 4099 through local dealer Total Rockbreaking Solutions.

The purchase of the 2,800 kg hammer is the latest step in a relationship that stretches back to 2000 when the company bought its first Rammer hammer: a 3,800 kg G100 model.

Steve Della Bona, director of WA Limestone, bought the first Rammer G100 hammer for use in a hard rock quarry in Byford that supplies all types of granite products. After 11 years of reliable service in this demanding application, the Rammer G100 was replaced by a Rammer 4099 hammer in 2011.

In the past few years, WA Limestone has expanded its operations with two hard rock quarries being established in Western Australia. Due to the increased demand for specialised rock, another Rammer 4099 was acquired for the Karratha quarry in December 2013.

"I chose Rammer for their reliability, durability and proven record in Byford quarry. Other brands were considered but, due to the remote operation, the Rammer sealed accumulator system is far more reliable than the piston accumulator that is offered by competing breakers that need more frequent maintenance due to charging of the gas system," concludes Della Bona.

"For over 10 years, Rammer hammers have been one of our most trusted attachment tools, delivering excellent reliability in harsh conditions."

> "I chose Rammer for their reliability, durability and proven record in Byford quarry.
>
> Steve Della Bona

Steve Della Bona, director of WA Limestone.

Central European dealer Ascendum participated in Rammer training at dedicated training facilities in Lahti, Finland.

LEARNING THE RAMMER WAY

To become a Rammer dealer it takes more than the ability to sell; you also have to be willing to learn.

According to the old adage, a chain is only as strong as its weakest link. With Rammer brand, that chain is strong from the beginning to the end.

The company, Sandvik, uses only the best materials and manufacturing processes to make its hammers each chosen by recognised experts. Another group of experts then check and test those hammers before they leave the factory. And they are then despatched to another group of experts – The Rammer global dealer network – for onward sale and delivery to customers who are, in turn, experts in their own rights.

We safeguard Rammer's reputation by the extensive use of training in all levels in our business. And nowhere is this more evident than in the training and support it provides to the dealers.

Recognising that our hammers are likely to be just one of a number of products being sold by each dealer, we take time to ensure that Rammer dealer personnel are trained in the Rammer way. Customer-facing sales staff are trained to understand each individual hydraulic hammer, its most appropriate carrier, and its likely performance across a wide range of different applications and industry sectors.

Aftersales staff are trained to deliver parts and service support in the Rammer way; quickly and with the minimum of fuss. They are trained in the fundamentals of hydraulic hammer maintenance and repair including advanced diagnostics to ensure that customer downtime is minimised.

The latest company to benefit from the Rammer training programme is new Central European dealer, Ascendum which covers the Croatia, Czech Republic, Hungary, Romania and Slovakia. The company, one of the world's largest distributors of Volvo Construction Equipment, sent five of its key personnel to Rammer's dedicated training centre at its Breakers Lahti facility in Finland for a full week of intensive training.

That training included basic hammer theory, family-specific construction and operation training on the Small, Compact, Medium and Large ranges, warranty issues, and modules on parts, failure analysis, and hammer assembly and disassembly.

The trainees were clearly impressed by the training provided. "The training was not just theory, it was hands-on so we actually got the chance to practice in real conditions with real breakers," said one of the delegates. "Everything was really well explained including some additional tips and tricks that even experienced mechanics might not know," added another.

All five Ascendum representatives agreed that the training will make them better equipped to meet the sales and aftercare needs.

WHERE SECONDARY COMES FIRST

A Rammer hammer has helped a New Zealand aggregates producer double its production in just four months.

According to the Aggregate and Quarry Association, New Zealand uses 11 tonnes of aggregate per person per year in construction. Higgins Group-owned Baldwins Aggregates Limited provides 160,000 tonnes of the sedimentary rock into the country's construction industry every year. Having recently procured another 80 hectares, Pokeno-based Baldwin's Aggregates has ensured it has the capacity to continue providing vast quantities of aggregate to the New Zealand market.

Sheep to Stone

Rewind 15 years and Baldwins Aggregate was just another sheep farm. Kerry Reilly, operations manager, stumbled upon it and started its transition from a greenfield site to the quarry that sits there today. From the beginning, Baldwins Aggregates focused on producing a high quality product in an efficient manner, while respecting the environment and safety of the staff.

Since 2002, Baldwins Aggregates has been working hard to ensure environmental sustainability. The company started a voluntary initiative to improve the quality of water that was discharged from the quarry, creating a wetlands to naturally filter the water. Reilly conceived the idea, however, he also praises the input of neighbouring dairy farmer, Peter Buckley. Buckley donated several hectares and "put a lot of trust" in what seemed like a wild idea at the time, Reilly says.

Over the last 12 years Baldwins has planted 15,000 indigenous trees and shrubs, with assistance from the Waikato Ecological Enhancement Trust. Those efforts were rewarded recently with Baldwins Aggregates taking home the Gold Mimico Environmental Excellence Award at the Quarry NZ Conference.

Gary Johnstone, Director of Digga NZ, and Rammer Sales Manager David Scurr celebrating the 10th year of their business relationship.

Kerry Reilly, Operations Manager of Higgin's-owned Baldwin's and Cobus van Vuuren, Higgins Aggregates Manager, celebrate their award success.

The removal and relocation of overburden is another issue for all sedimentary quarries. Baldwins found an innovative solution that would solve the problem from both an environmental and economic perspective. Incorporating the overburden into the wetlands was the logical solution with any excess placed into Baldwins consented landfill site. This means no transportation on public roads and the landfill will provide good conditions for future forestry development.

Hard Rock

Baldwins Aggregates produces a very hard rock. After the initial explosion, the company is often left with large boulders that require secondary breaking before crushing. While most aspects of the quarry were running very smoothly, the company was struggling with its secondary breaking.

Baldwins trialled many different breakers, with little satisfaction. But the Rammer 2577 truly hit the bull's-eye. Four months since purchasing the Rammer 2577, Baldwins could not be more pleased with how positively it is impacting production. "Since getting the Rammer, rock breaking has doubled," says Reilly.

The Rammer 2577 is also impressing with its auto self-greasing to conquer the "rock crazy" operators. Reilly asserts that operators can often go numb and only focus on continually breaking boulders, causing premature wear on the hammer. Thankfully the Rammer hammers were made with this in mind.

Baldwins purchased the hammer from Digga New Zealand which has just celebrated 10 years of continuous service as an authorised Rammer dealer.

Dean Hewlett from Digga NZ; Allan Parnwell, mechanic at Baldwins; and Zak Reilly, the Rammer 2577 operator, soon to give the hammer its first run.

MIGHTY RAMMER 5011 HAMMER GETS THE JOB DONE

A Western Australian-based contractor is successfully using a Rammer 5011 hammer fitted to an 80 tonne excavator in harsh outback conditions for a time-critical mining rail line construction in North Western Australia.

FinnMining's recently purchased Rammer 5011, fitted to a Komatsu PC800-8 excavator, is being used for breaking blue rock and preparing the ground works for the new Roy Hill railway line.

Roy Hill is an iron ore mining project in the Chichester Range in WA's Pilbara region; the 344 km long, heavy haulage railway line will connect the mine site and Port Hedland, enabling the transportation of over 150,000 tonnes of iron ore a day once production starts late next year.

> I can deliver what I promise to my customers.
>
> Gavin Kelly

With a contract value estimated to exceed $620 million, construction of the line requires moving approximately 10.5 million cubic metres of material between its commencement in September 2013 and scheduled completion in January 2015.

FinnMining was established by Gavin Kelly in 2011, and was named after his son Finn.

Specialising in plant hire, with options for wet or dry hire of over 50 excavators, along with a variety of attachments, it employs more than 50 staff.

To date, FinnMining has provided the Roy Hill railway contractors with over 15 items of earthmoving equipment, including two large Rammer hydraulic hammers for bulk excavation and ground works.

Gavin Kelly first came across with Rammer when he needed a heavy duty hammer on Barrow Island in September 2013. He talked with a colleague who recommended the brand.

"I searched online and as a result found Total Rockbreaking Solutions' website, which gave me valuable information on the size and style of a hammer that would be suitable for primary breaking on Barrow Island," he said.

Within three days of making contact, a Rammer 4099 hammer was delivered and commissioned at the site.

Encouraged by the product support and service delivery from Total Rockbreaking Solutions, shortly after that Kelly purchased two 3288 Rammer hammers for two of his 35 tonne excavators operating in the Pilbara.

Then in March this year, he needed a larger hammer for ground works on the Roy Hill railway, opting for a Rammer 4099.

"Having seen a Rammer 4099 operating in harsh conditions on Barrow Island without missing a beat, it was an easy decision to make," Kelly said.

The Rammer 4099 was delivered to Roy Hill, commissioned on a 45 tonne excavator, and was put to work breaking the region's tough blue rock.

However, it soon became apparent that an even larger hammer was required due to large scale of the operation at Roy Hill, so Kelly ordered Rammer's largest hammer model, the 5011. It was delivered to the site in early May.

"Attached to an 80 tonne Komatsu excavator, this hammer is operating in unforgiving conditions, almost 24/7 in a very remote location in Roy Hill where reliability is fundamental.

"And Rammer features such as Ramlube auto greasing, lifetime warranty, Ramdata, idle blow protection, combined with the brand's reputation and local dealer support give me the peace of mind that I can deliver what I promise to my customers," he said.

In just a few years, FinnMining has developed a reputation of getting the work done reliably, on time – and the fact that its customers return to hire more services from the company speaks for itself.

As with other large hammers in the range, the 5011 has been designed using Rammer's well known operating principle, which combines stroke length, blow energy and a patented idle blow protection feature, allowing the hammers to be adjusted to match individual carriers and applications, giving improved hydraulic efficiency and safety.

Lifetime Warranty

David Scurr, Sandvik Construction's Sales Manager for Hammers, Boom systems and Demolition attachments, said the use of advanced hydraulics, materials technology, strength calculations, impact wave theory and production technology has made Rammer hammers the most powerful, durable, cost-effective on the market – and the undisputed leaders in their class.

"Rammer hammers and attachments have been associated with the Western Australian mining and construction industry for more than 20 years, earning a reputation for quality and value for money," he said.

"Rammer's sealed high-pressure membrane accumulator system ensures optimum performance at all times because our membrane accumulator is gas leakage proof and does not require any refill servicing or a special sealing system – unlike some competing hammers."

In addition, a pressure adjustment valve ensures full impact energy in heavy duty environments.

As with all Rammer hammers, the 5011 hammer also comes backed with Rammer's Lifetime Warranty, which for a professional user is a maximum of 10 years.

Its 1000 hour/one year service intervals have also been designed to meet the service demands of a product working under normal conditions.

Industry leading performance and reliability

In Australia and New Zealand, Rammer hammers and attachments are distributed through an independent network of qualified and experienced dealers.

Total Rockbreaking Solutions was appointed as the authorised Rammer dealer for Western Australia by Sandvik Construction in June 2013.

"Since our appointment as the WA Rammer dealer, we have ensured that existing and new customers receive the industry's highest-quality support, while enjoying the industry leading performance and reliability they have grown to expect from Rammer products," said Jeff Jackson, Sales Manager of Total Rockbreaking Solutions.

"Our company consists of a team of experienced professionals with a combined experience of more than 40 years in the sales and service of Rammer hammers and attachments.

"We offer solutions for a variety of applications, including optional systems such as Ramlube to minimise downtime and Ramdata to help operators and service staff obtain information on the accumulated working and service history of a Rammer hammer," said Jackson.

"And as the authorised dealer for Rammer in WA, we can ensure customers' current warranty and lifetime warranty programs remain valid, because Total Rockbreaking Solutions is the only Rammer-approved company in the state authorised to service these products."

Total Rockbreaking Solutions offers a full range of Rammer attachments and specialty products for demanding applications, including rock breaking, demolition, primary and boulder breaking, scaling, tunnelling, underwater demolition and boom systems.

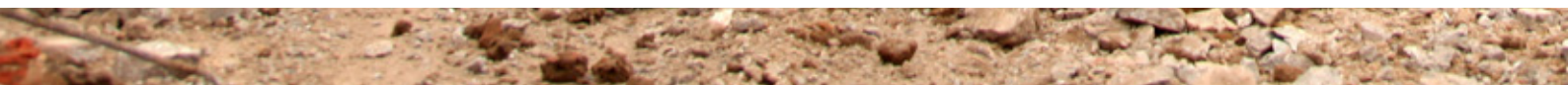
"As WA's 'one-stop attachment shop', the guys at Total Rockbreaking Solutions are easy to deal with, and they get things done promptly and as promised," said FinnMining's Gavin Kelly.

ENGLAND

AR DEMOLITION TESTS RAMMER POWER & PRECISION

One of the UK's fastest-growing demolition companies has put its faith in the power, productivity, performance and precision of Rammer hammers.

AR Demolition founder and Managing Director Richard Dolman.



A pair of Rammer hammers are spearheading two demolition contracts currently being undertaken by leading UK contractor, AR Demolition. But while both hammers – a Rammer 5011 and a Rammer 3288 – are both performing breaking duties, the factors in their selection are markedly different.

Bus Stops & Bungalows

In the space of just 20 years, AR Demolition has grown from a sole trader operation to an award-winning demolition company with an annual turnover of around £15 million and an unrivalled reputation for the training of its personnel. Although AR Demolition prides itself on a no-job-too-small philosophy, it has tackled everything from bus stops and bungalows to major industrial sites, factories, fire-damaged structures and disused quarry plant.

More recently, the company has also established itself as a recognised expert in the partial or full demolition of former newspaper print works where heavily-reinforced, vibration-resistant concrete floors represent a major demolition challenge.

Sheer Fire Power

One such contract is the demolition of the former Northampton Chronicle newspaper works close to AR Demolition's home in Warwickshire in the centre of England. The works formerly featured huge and heavy printing presses stood on heavily-reinforced concrete machine pads and foundations that are up to six metres thick in places and which AR Demolition founder and managing director Richard Dolman describes as "potentially a demolition man's worst nightmare". "The only solution on a contract like this is sheer fire power, tackling heavy duty concrete with equally heavy duty breaking power," asserts Dolman. "We are clearing the site in advance of the construction of a new store for a major supermarket chain and we cannot afford delays. So we chose a breaker that was as reliable as it is powerful."

AR Demolition's tool of choice is the Rammer 5011. Mounted on a full demolition specification Volvo EC460 CL hydraulic excavator, the 4750 kg breaker utilises maximum power with an operator-selected slow impact rate to provide optimum breaking and concrete shattering power. "The Rammer 5011 is a great tool," Dolman insists. "Used and looked after properly, Rammer hammers are a real thoroughbred. They are a world leader for a reason."

Power & Precision

While the Northampton Chronicle works required "fire power", a simultaneous partial demolition contract at the nearby Bridgnorth Aluminium processing factory required more of a delicate touch.

"Our work at Bridgnorth requires far more precision," Dolman explains.

"We are removing floors and foundations from within a building that is to be retained to facilitate a ground-up internal rebuild. All of this work takes place in a factory, parts of which are to remain live throughout the demolition process. So while the foundations are equally challenging here, our primary concern was precision and the control of noise and vibration."

To meet these specific criterion, AR Demolition selected a Rammer 3288. Mounted on a Hitachi Zaxis 225 excavator piloted by two-time demolition operator of the year contender David "Simmo" Simmons, the 2400 kg hammer has proved equal to the challenging task, punching through the concrete with relative ease. "The Rammer 3288 allows us to penetrate the ground precisely where we need to without causing damage to anything around us," Dolman continues. "And once the ground is penetrated, the 3288 allows us to hit it with maximum force."

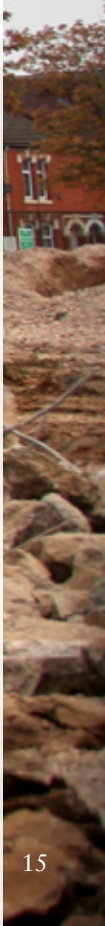
Quality Service

In many ways, AR Demolition's purchase of the two Rammer hammers sums up the company's approach to business and staff retention.

"At AR Demolition, we pride ourselves on providing our customers with a quality service. And we believe that starts from the bottom up, providing our operators with the highest possible levels of training and equipping them with the very best equipment available," Richard Dolman concludes. "Our operators love the Rammer hammers and are genuinely excited when they get an opportunity to use them. They are now an integral part of our equipment fleet. Having experienced them for themselves, I really don't think I could convince our operators to switch to another hammer now."

Scan the code and watch Rammer 5011 in action.

Scan the code and watch Rammer 3288 in action.



The training course took place at the PT Kasana head office in Jakarta and was attended by 12 trainees from across the country.

TRAINING PAVES THE WAY

Sandvik has underlined its commitment to Indonesian customers by hosting an intensive training course ahead of the arrival of the first consignment of hammers with newly-appointed local dealer, PT Kasana.

Hosted by Rammer Sales Manager David Scurr and Product Specialist Petteri Rajanummi, the training course took place at the PT Kasana head office training in Jakarta and was attended by 12 trainees from across the country.

One of the many highlights of the training was the hands-on sessions where delegates were able to strip down and reassemble a Rammer 2155 hammer, to familiarise themselves with the product.

"The guys are very satisfied with the training, especially as this is something new for most of them," says PT Kasan training manager Sulis. "They now understand the Rammer hydraulic hammers which will allow them to better serve our Indonesian customers. From my point of view, I'm very satisfied with the training. Petteri is a very good trainer, and he knows the product in great detail. All our questions were addressed very clearly."

Rammer Sales Manager David Scurr is similarly pleased with the outcome of the intensive training. "PT Kasana is our new dealer with a very professional team and facilities, and are well positioned to represent the hammer product line throughout Indonesia. The PT Kasana team is new to the Rammer hammer product offering but they were well prepared, very engaged and enthusiastic during the training week. I would like to personally thank training manager Sulistiyono and service manager Mulyana for their efforts in getting the guys together and their support during the training week," David Scurr concludes. "The first shipment of hammers arrived in mid-October and the first sale of a Rammer 2155 went out the very next week."

Representatives from across the territory attended the meeting at the Stamford Plaza Hotel in Adelaide.

RAMMER DOWN UNDER

Rammer has hosted a highly successful dealer meeting in Southern Australia to allow local dealers covering the Asia Pacific region to meet Kaj Koskela VP PA Breaking.

Representatives from across the territory attended the meeting at the Stamford Plaza Hotel in Adelaide. These included senior personnel from Precision Screen which covers Queensland and Papua New Guinea; Walker Hammers which covers Victoria and Tasmania; Total Rockbreaking Solutions from Western Australia; Renex Equipment which covers South Australia and the Northern Territory; and Ground Tec Equipment which is responsible for New South Wales. Representing Sandvik were David Scurr, Rammer Sales Manager; Kaj Koskela, VP PA Breaking; and Glenn Cooper, VP Sales Area Construction Australia and New Zealand.

The focus of the meeting was to review the Rammer Breaker Portal and all the new developments and functions, update on the product and aftermarket offering, and the new Sandvik strategy. It was also an opportunity for our new Rammer dealer representatives to meet other more established and experienced dealers and to share ideas.

The dealer representatives took time out to workshop through their common approach for the marketing plan and to visit the well-equipped Renex facilities in Adelaide.

The following day, Kevin Renfrey and Daniel Drew from Renex Equipment took Kaj Koskela out to inspect their Adelaide facilities and workshop before moving on to Moonta Bay – some 200 km from Adelaide – to meet with some of the CME Civil team who recently purchased three Rammer hammers as part of the extensive sewage pipeline project going on in the region.

Kaj Koskela reports that the meeting with local dealer representatives and customers is always invaluable. He also took some time out to experience some typical Australian country landscapes on the way out to site, and is now a big fan of the traditional "Aussie meat pie".

RD2525 TAKES DOWN THE 100 YEAR OLD BRIDGE ON THE SEVENTH AVENUE

100 year old bridge on the Seventh Avenue Bridge had reached the end of its working life and had been scheduled to be replaced. With a task to demolish the Seventh Avenue Bridge in Maylands Mr Jadd Brown at Focus Demolition needed a versatile demolition tool he could rely on in long-term. "Having hired the Rammer Multiprocessor in previous demolition jobs, and seen its reliability and power of maximum crushing force of 144 tonne it made sense to enquire about owning my own Rammer Multiprocessor" said Mr Brown.

TRS recommended Rammer Multiprocessor RD2525 for the job as it is extremely versatile and has been engineered to perform a broad array of duties such as crushing concrete, cutting reinforced structures, pulverizing and demolition. Its jaws with pulverizing plates can be changed to a metal shear for demolition of steel reinforced concrete structures and complete the job without having to obtain a whole new assembly. "Features like these and the fact that this demolition application also needed a tool with 360° rotation that is a standard feature on RD2525 gave peace of mind that we can carry out this task as efficiently as possible" says Mr Brown.

Work at the Seventh Avenue commenced in early June and RD2525 has lived up to its reputation. Attached to a Hitachi ZX330 the RD2525 is working its way through and half of the Seventh Avenue Bridge is already gone.

Encouraged by product support and service delivery by Total Rockbreaking Solutions Mr Brown soon arranged a Rammer 255 rockbreaker for the Watermans Bay Marine Research Facility refurbishment project. "It makes it easier to complete the task when you have right tools like Rammer 255 and Yanmar mini excavator" comments Mr Caine Gibbons at Focus Demolition who supervises the demolition work at the Marine Centre.

> "It makes it easier to complete the task when you have right tools.
>
> Caine Gibbons

The Seventh Av and Rammer 255 preparing the groundwork for the Watermans Bay Marine Research Centre refurbishment.

DEMOLITION AT EUROPE'S LARGEST SHOPPING CENTRE

With a sales area of more than 170,000 m², the Shopping City Süd (SCS) near the southern outskirts of Vienna is the largest shopping centre in Europe. After the comprehensive modernisation which stretched through 2012 and 2013, there are now over 330 shops available in the SCS. During the course of the modernisation, two massive entrance portals also had to give way to the new concept. The dismantling of the 24 metre tall entryways consisting of 180 tonnes of reinforced concrete was carried out by Austria's largest demolition company with its own structural engineering division, AY-KA Bau Ges.m.b.H. The specialist in complex industrial demolition and proper dismantling currently employs around 250 members of staff.

"Even for us, the demolition of the two steel-reinforced concrete behemoths was a truly spectacular task which we had to approach with extreme sensitivity. The demolition was partially carried out, under the highest safety measures, during opening hours and thus while people were shopping. The toppling of a 24 metre tall column in the shopping would have been unimaginable," says project manager Martinz. The challenge was to dismantle both entrance portals without allowing anything to fall from them onto the shopping centre or the car park. In order to mitigate any risks, complete safety measures were implemented fourfold. All the concrete elements were individually secured, restrained, attached to the cranes and sawn off on the ground.

Finally, the reinforced concrete sections were lifted to a handling area and broken down for removal using hydraulic hammers. At times, during the demolition, there were three demolition tools, two separate concrete cutting teams with wall saws and core drilling equipment, three cranes, two 30 m large working platforms and two 24 m scissor lifts, as well as a large floodlight system on the site at the same time.

The Rammer hydraulic hammers, from the Compact Range, which were used to break down the reinforced concrete won us round with their indestructible chisels and had the added advantage that they ran constantly without needing to be lubricated. A diaphragm accumulator ensures high and uniform hammer performance. In addition, the anti-vibration and noise-protected construction of the hammer has significant benefits on sites like this, in the middle of a working shopping centre.

The demolition company was supported by Stangassinger from Upper Bavaria for purposes of quickly making new hydraulic hammers available. "We have been working with Rammer hydraulic hammers for many years. This distributor is a technical expert and is always reachable if something is not working," Martinz declares with satisfaction.

DEMOLITION OF THE ERSTWHILE GDR FLAGSHIP FURNITURE FACTORY

The first walls have fallen on the site of the former Bützow furniture factory. The current owner, DRK (Deutsche Rotes Kreuz, German Red Cross), will be building a residential complex for seniors. The building complex, which has come down completely by now, really had seen better days. Built immediately after the war in 1949 as VEB Möbelwerke Bützow, this was a significant model factory for the SED (Sozialistische Einheitspartei Deustchlands, Socialist Unity Party of Germany) government in the German Democratic Republic.

By now, the first part of pollutant clean-up is almost finished on the site. The Teterow demolition company, Lenuweit, has levelled the first buildings to the ground. "We have torn down the garages and multiple small buildings on the site and hammered the reinforced foundations over the entire outer area, first of all, in order to create space for the intermediate storage of demolition waste," says company owner, Roberto Lenuweit. The newly acquired Rammer 2155 hydraulic hammer was used for this.

The hydraulic hammer, with its 118 mm chisel measurement, proved to be best suited for the continuous heavy impacts for the profiling of around three tonnes of brick and concrete. The Rammer 2155 uses an extremely modern operating principle which combines stroke length, energy of impact and blank impact protection with one another. In this way, the hydraulic hammer can be adjusted for a wide variety of uses without any problems.

Piece by piece, the wheeled excavator with the Rammer 2155 hydraulic hammer works its way forwards on the site of the old furniture factory.

As a result, the highest level of hydraulic efficiency is achieved with maximum safety, as, for example, during the demolition of numerous lintels in the outdoor facilities of the old furniture factory. With an operating weight of approx. 1280 kg, the Rammer 2155 hydraulic hammer is designed for carriers between 16 t and 26 t. Like all hydraulic hammers in the Medium Range, Rammer 2155 is equipped with VIDAT tie rods. A Ramlube II lubrication system is also integrated into the tool purchased by the demolition company.

The Rammer brand's excellent reputation played an important role in Lenuweit's purchasing decision – the company had only rented such demolition tools until now. In addition, the device's flexibility in working with a wide range of excavators was important for the company. The floating position of the wheeled 19 t excavator allowed optimal working with the hammer on the Bützow site and, thanks to the OQ rapid changer, the quick switching of the Rammer 2155 tools and the sorting grapple was not a problem and simplified handling.

Lenuweit, which has been operating in the Mecklenburg-Vorpommern region with its 10 employees for 15 years, sells itself on assured quality in combination with consistent performance. "Our construction machinery dealer, Swecon from Neubrandenburg, whose service we are extremely satisfied with in this case, stands for this as well," says Lenuweit. With an additional warranty guaranteed for its lifetime, Rammer 2155 is an all-round good investment for the demolition company.

THE LARGEST RAMMER HAMMER USED FOR THE DEMOLITION OF A BONDED WAREHOUSE

30 years ago, Eberhard Bau AG in Switzerland invested in their first Rammer hydraulic hammer – a Rammer S2000HD. Since this time, the company has trusted in the reliability and clout of these hydraulic hammers.

Then and now, Eberhard worked in collaboration with the largest Swiss construction machinery dealer, Avesco. "Eberhard always expects qualified and binding advice from us. Innovative brand-name equipment forms a firm basis for this. In the course of this, we also rely on professional input from our contact person at Sandvik, Sales Manager Jens Schwark" says David Geiser, who is responsible for Rammer hydraulic hammers at Avesco. With a service period of 12 years or more, each Rammer hydraulic hammer purchased is a good investment for Eberhard.

In total, the construction company now has 29 Rammer hydraulic hammers from the quality brand in daily operation. Sticking with a singular type is paying off. The most recent purchase made was a Rammer 7013 with an operating weight of 7000 kg, placing it 2nd in this performance class. In this heavy-duty sector, the attachment has the most advanced functions, such as the Ramlube II automatic lubrication system, the OQ rapid changer for the quick switching of attachments or the FBE system for ensuring the same impact energy irrespective of the material hardness, as standard.

An old bonded warehouse in Switzerland is being transformed into a new living space. The demolition of numerous foundations was achieved with the Rammer 7013 hydraulic hammer.

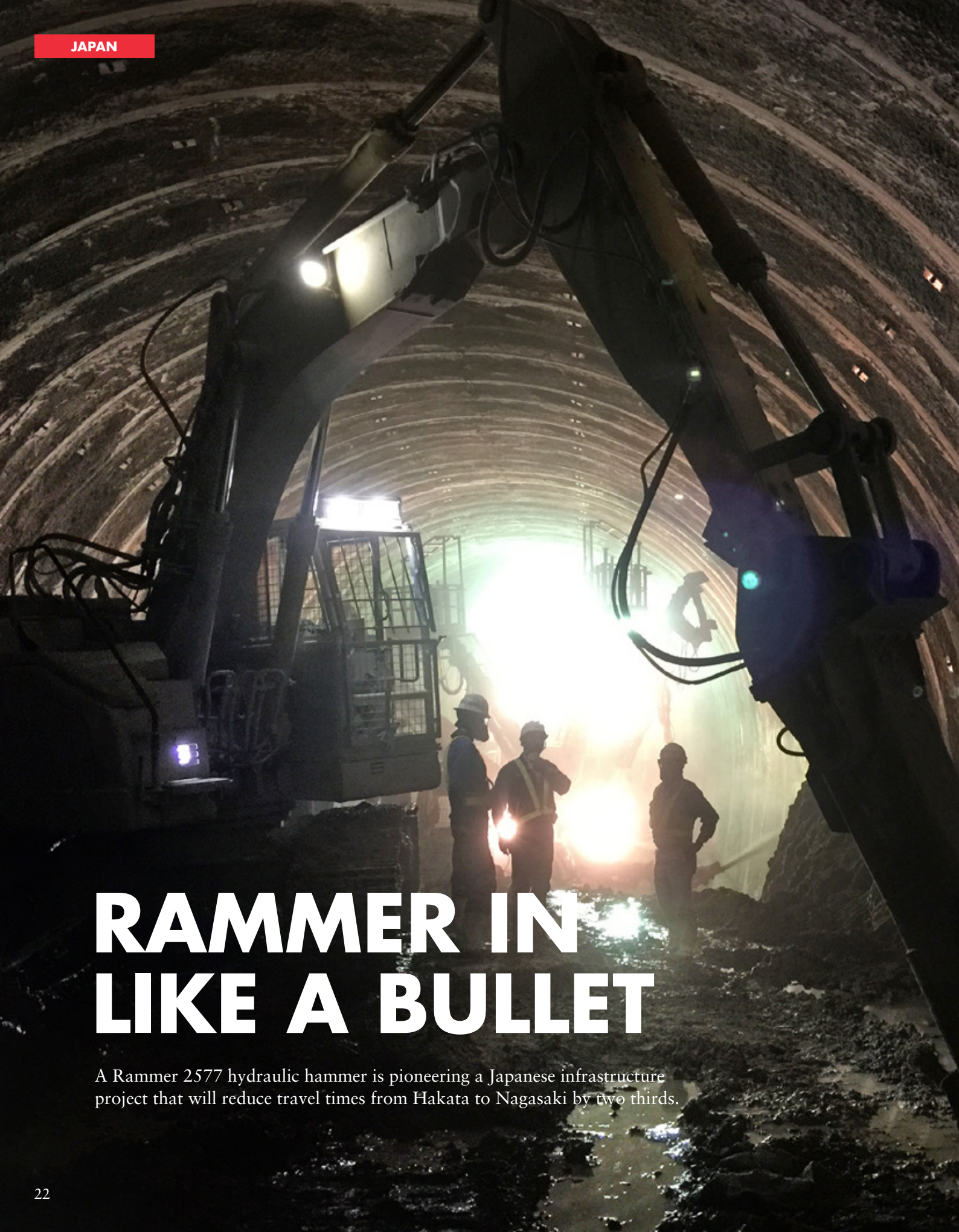
Quick demolition in the shortest time

The newly purchased hydraulic hammer was first heavily used during demolition work on the erstwhile bonded warehouse in Zurich, which covered around 186,000 m^3 of enclosed space. Around 1000 homes as well as offices and business premises will spring up on the 74,000 m^2 site. The number of inhabitants in this district of Zurich will increase by around 15% with the expected circa 3000 new residents.

Eberhard Bau AG started removing the core of the building in February 2013 and moved the giant excavators in just four weeks later. Excavators with operating weights of 50 - 100 t and a three-part demolition boom with a maximum working height of 30 m were used for the demolition of the numerous storage halls and their heavily reinforced basements and foundations. The attachments used had weights of up to eight tonnes. "We prefer large-scale equipment in order to be able to guarantee quick demolition in the shortest time. For this, we rely on brand quality which guarantees us problem-free use under extreme conditions," says Thomas Angehrn, purchaser for Eberhard. The Rammer 7013, with its enclosed housing, shines, for example, when the lowest possible level of noise pollution is required such as on this site located in the midst of the city.

By the end of the demolition work in June, around 130,000 t of mixed and concrete waste, which was sometimes broken up on site, had accrued on the bonded warehouse site. Some of the pre-sorted demolition waste was transported by HGV to the Eberhard construction material recycling centre. There, it was separately dumped, broken down, sieved and separated by component into temporary storage silos for recycling. Parallel to the demolition, excavation works with a total volume of 181,000 m^3 began.

Eberhard Bau AG's contract includes not only the demolition and excavation work, but also the construction of roads and pipelines. The overall services of the Eberhard companies make it possible to comply with the short construction times. The excavation works and the installation of the lean concrete floor had to be finished by the end of 2013. In the meantime, the first new buildings are going up where once the untaxed goods were stored.



RAMMER IN LIKE A BULLET

A Rammer 2577 hydraulic hammer is pioneering a Japanese infrastructure project that will reduce travel times from Hakata to Nagasaki by two thirds.

Mr Mimata Shoji, President of Shoji (left), Mr Masumi Shiotsuki, General Manager of Shoji and Mr Yoshikazu Uryu, Sandvik Japan's Sales Manager in Kyushu.

"The tunnelling job is extremely harsh and we always try to provide good quality products for our customers."

Takashi Kanbara

A Japanese tunnelling specialist has put its faith in a Rammer 2577 to pioneer one of the country's most prestigious infrastructure projects. The 1460 kg hammer, which is on hire from rental specialist Honda Kiko, is being used for secondary breaking and scaling on a vital railway tunnelling project that will reduce travel times from Hakata to Nagasaki from the current three hours and 40 minutes to just one hour and seven minutes.

Bite the Bullet

This tunnel is being built for Shinkansen (Japanese bullet train) connecting between Hakata and Nagasaki in Kyushu Prefecture under the "Kyushu Shinkansen Nishi Kyushu Route Project". There has been only one Shinkansen line in Kyushu Prefecture – between Hakata and Kagoshima (crossing north to south) – since 2004. Upon completion, the line – which is being constructed for client Japan Railway Construction, Transport and Technology Agency – will be directly connected to Osaka and Tokyo.

Shoji Construction Industry (Shoji) is a specialist contractor that has a proud history in the Japanese tunnelling industry. Mr Mimata Shoji, the President of Shoji, has been using Sandvik products including tunnelling jumbos, rods, bits, and a Rammer G100 hydraulic hammer in tunnelling applications for a number of years.

Mounted on a SH225XTN-3 Sumitomo excavator and equipped with a long moil point and hard rock chisel tool, the new Rammer 2577 is used primarily for scaling within the 978 metre long tunnel, coping admirably with the andesite and turbidite rock that makes up the local geology. The company reports that the hammer is also used to perform primary breaking duties when required.

Valued Partner

According to Mr Masumi Shiotsuki, the General Manager of Shoji, the company's use of the new Rammer 2577 was based largely upon a positive previous experience with other Sandvik products. "We have been very satisfied with Sandvik products, particularly Tamrock tunnelling jumbos and its rods and bits. We experienced the difference of the lifetime of Sandvik products and other local competitors when we had a tunnelling job near our office. Since we had great experience in the quality of Sandvik products, we believed that Rammer would bring us a great efficiency and strength in quality too," Mr Shiotsuki explains. "Not only is the quality of Sandvik products great, but Mr Yoshikazu Uryu's (SMC Japan's Sales Manager in Kyushu) customer support is fabulous. Without his dedicated support and advice, to be very honest, Shoji would not consider Sandvik as such a valuable partner."

Mr Shiotsuki's comments are echoed by Mr Takashi Kanbara, the Sales and Service Manager, from rental company Honda Kiko. It is Honda Kiko's first time to operate 2577 in tunnelling rental business and they had Rammer service trainings for their service mechanics successfully. "Our business specialises in providing equipment to construction contractors, mainly tunnelling. The tunnelling job is extremely harsh and we always try to provide good quality products for our customers," he concludes. "Our tunnelling customers are happy with the power and the low noise of Rammer hammer, so we are satisfied."

The number of tunnelling projects is increasing in Japan at the moment. The demand of Sandvik's tunnelling product is expected to increase too. The dedicated Tunnelling Sales Team in SMC Japan is thriving to fulfil the demand of high performance Rammer hammers for tunnelling projects in Japan.

MILITARY BASE DEMOLITION

Built by Kaiser Frans Joseph I almost 200 years ago, the imposing military base was not intended to keep external foes out of Vienna, but rather to protect the power of the Austrian state in the event of a revolutionary uprising in the city.

At the time 177 million bricks were used to build the existing Arsenal which consists of multiple buildings. In the following years, ever more extensions were added. Large parts of the original Arsenal are still preserved today and the buildings are used by the Austrian armed forces as well as by a multitude of other companies. AY-KA Ges.m.b.H was charged with the required demolition of an old military fuel station within the Arsenal site. The large Austrian demolition company specialises in complex industrial demolition and proper dismantling.

"First, we began with contaminant investigation, cleaning and ventilation of both of the 30,000 litre tanks and the 1.000 litre underground tank. We then also started the demolition of two large associated halls, sometimes with three excavators at once, the extrication of the tanks using a 350 tonne crane and the extraction of the antifreeze from the tank partition walls. Dismantling then followed with the erection of intermediate storage for contaminated extracted material, removal and, finally, proper disposal," AY-KA's technical director describes the extensive work steps for the project.

During all of these challenges, noise pollution and dust emissions had to be kept to a minimum; hazardous deflagrations or contamination of the ground water could not occur at any point: the site was surrounded by multiple active military buildings. A directly adjacent office building with around 5.000 employees and a large furniture store also made the whole demolition of the military fuel station especially interesting.

The whole process was further complicated by the biggest motorway access route to Vienna, the A23 ring road, which is in the immediate vicinity. The Rammer 2577 hydraulic hammer which was used for the demolition under these conditions proved to be ideally suited. The anti-vibration and noise-protected Rammer 2577 hydraulic hammer produces a sound power level of just 124 dB. The adjustable blank impact protection system made the Rammer 2577 hydraulic hammer, with an operating weight of 1760 kg, one of the key machines on the site. The maintenance-free diaphragm accumulator ensures high and consistent hammer performance and thus ensures smooth running.

"With our distributor, Stangassinger, in Upper Bavaria we already have a technically experienced partner on our side for jobs like this who offers us expert advice with excellent after-sales service as well as quick delivery and flexible financing models," Project Manager Martinz explains. "We were able to demolish this 30,000 m^3 enclosed space with 130 tonnes of steel and 1000 m^3 of contaminated soil in just four weeks – thus finishing a full week before the scheduled completion date."

> "We were able to demolish this 30,000 m^3 enclosed space with 130 tonnes of steel and 1000 m^3 of contaminated soil in just four weeks.
>
> Project Manager Martinz

Patrick Dills, Matthias Bernhardt from Korz Baggerbetrieb GmbH, Jens Schwarck from Sandvik.

LIGHTNING STRIKES

Rammer hammer demolishes former car factory to make way for new IKEA store.

Opel's lightning has faded. For decades, the car manufacturer's familiar trademark was visible from afar, standing proud on the roof of the administrative head offices of the facility in Kaiserslautern.

But in July and August last year, the building was demolished by Korz Baggerbetrieb GmbH to make way for a new IKEA furniture store that will be constructed on the site.

The demolition company M. Korz has been active in the greater Kaiserslautern area for more than 35 years and operates a sizeable company-owned equipment and vehicle fleet comprising more than 70 large-scale machines such as excavators, lorries and tracked loaders. The company employs around 55 people and had the experience and machinery power to swiftly demolish the former car plant while cars continued to be manufactured in a "live" factory just 25 metres away.

The demolition company tore down approximately 40,500 m³ of buildings over an eight-week period using a high reach excavator, five smaller excavators and a Caterpillar tracked loader.

In addition to the demolition, M. Korz was required to handle a significant amount of contaminated materials. Asbestos was removed on an area of 3500 m² and, besides the removal of insulation material containing hazardous synthetic mineral fibres, a road mill was used to remove insulation material containing PAH from between two layers of floor slabs over an area of 3000 m².

The demolition company recycled or professionally disposed of the overall construction waste volume of more than 8000 m³ so that the construction site could be handed over to the new owner on time.

This challenging contract was also the first outing for a newly-purchased Rammer 1533 hydraulic hammer. Mounted on a Liebherr R914 excavator via a fully-hydraulic quick-coupler unit, the Rammer 1533 was used to demolish concrete beams, breaking out floor slabs, and the breaking of the heavily-reinforced concrete foundations.

According to Matthias Bernhardt, construction supervisor at Korz Baggerbetrieb, the Rammer hammer performed admirably, achieving a high and consistent level of productivity. Bernhardt reports that the Ramlube II automatic lubrication system helped to ensure that the hammer remained productive throughout this intense contract while standard features such as the Fixed Blow Energy system, sound-proofing and vibration isolation made the hammer powerful and yet quiet with low levels of vibration.

"We have been using Rammer hammers for more than 10 years now. Their excellent sound-proofing and vibration insulation means that the tools generate very little noise when in use. We also appreciate the customer service of the manufacturer Sandvik and the high quality of expert technical advice, even in problematic cases," Bernhardt states.

BREAKING IN BRAZIL

A Brazilian mine operator is using a Rammer 3288 hydraulic hammer in a secondary breaking application to maximise production at a facility in Brumadinho.

A 2,040 kg Rammer 3288 hydraulic hammer is helping to increase the production of Itabirite at a mine in Brazil. FLAPA Mining, part of the Top Mix group, operates in the heavy construction, dredging, mining, assembly and operation of processing plants and ore crushing plants.

Innovation & Efficiency

Founded in 1993, FLAPA Mining has a reputation for innovation and the effective management of its staff and equipment. These processes resulted in the award of ISO Quality Certification and PBQPH, and in a more complete service to their clients.

At the company's Fábrica Mine, Jangada Mine, Capão Xavier Mine, Capitão do Mato Mine, which are operated by main contractor Vale, this quest for innovation and efficiency led to the purchase of the Rammer 3288 to break up oversized boulders prior to crushing and processing.

"The iron ore is extracted from the mine primarily using explosive methods," explains general manager Paulo Thiago Miranda. "Any oversized material that is too large for the crusher is broken again using the Rammer 3288."

Vital Partner

Miranda says that the Rammer hammer represented a significant investment but that his company was willing to pay a premium to get the best available hammer. "We consider Rammer a premium brand. It is a bigger financial investment, but we have fewer maintenance problems and a marked gain in production. We understand that the Rammer is the hammer with the most advanced technology available in the Brazilian market, maybe in the world. Also, it has the credibility of the Sandvik name behind it."

With the relatively remote location of the mine and its dependence upon the reliability of the Rammer unit, FLAPA is reliant upon the aftersales support provided by local Rammer dealer, Rock Brit. "Despite the tough working environment and long working hours in dusty conditions, the hammer has stood up extremely well. In the first seven months of operation, we have had to order no parts. On the one occasion that it was sent to Rock Brit, it was only for washing and reading of the Ramdata diagnostic information," Paulo Thiago Miranda concludes.

"We view Rock Brit as our partner. They are a very committed distributor. When any minor faults have been identified, the Rock Brit technicians make the repairs free of charge, because it considers simple maintenance to be part of the service package. Based on our experience so far, we would definitely buy another Rammer."

Paulo Thiago Miranda, General Manager of Flapa (left) and Ricardo Silva, Commercial Director of Rammer dealer Rock Brit.

"Despite the tough working environment and long working hours in dusty conditions, the hammer has stood up extremely well.

Paulo Thiago Miranda

WITHOUT FAIL, RAMMER 4099 BEATS THE CLOCK

Removing a sizeable structure, such as a highway overpass, requires planning and preparation before the first piece of equipment rolls onto a worksite. This is particularly true when the demolition project occurs on one of the most heavily congested freeways in southern California. Safety and environmental issues including dust suppression, sound suppression, re-routing of automobile traffic and the recycling of scrap and other re-usable materials must carefully be considered.

These variables all came in to play when Environmental Remediation Services, Inc. (ERSI), a customer of Tracey Road Equipment, which is an Allied Construction Products, LLC Distributor, was contracted to help widen the Route 91 Corridor in Corona, California. A key part of the project was bridge demolition at the Interstate 15 and 91 Corona interchange. To help alleviate traffic congestion flowing through Corona, a majority of the work had to be done at night. Working over active railroad tracks and storm runoff channels added another "wrinkle" to the project.

"The close proximity of the railroad tracks had to be accounted for," said on-site ERSI Superintendent Glenn Beam. "The trains were running close by the overpass so that gave us a limited work window." Fortunately, issues like this and others were planned for in advance. "This project was bid as a Design-Build and was funded by the State of California along with some Federal assistance. In a Design-Build, teams work together to come up with a good plan and calculate accordingly," said Beam.

Rammer 4099 works non-stop so highway can re-open early

One of the plan's primary considerations was much of the demolition work was being performed in elevated conditions over long

periods of time. For that reason, ERSI chose the Rammer 4099 hydraulic hammer to demo the overpass. "We were working the Rammer 4099 in high elevation scenarios for a solid 22 hours. It got no break and performed extremely well. It's the best power-to- weight hammer. For the Komatsu 360 Excavators we use, the 4099 has optimal balance and torque," said Beam. The Rammer 4099 also provides an operator-friendly environment in the cab of the carrier for the operator.

So that the highway never had to be shut down completely, the work was done in phases explained Beam. "Our timetable had us doing the work in sections. This allowed us to build back what we took out, add the new lanes; all while keeping the lanes opened that weren't demolished." Plus, because the 4099 Rammer hammer has a sound-suppressed housing, it was ideal for use in an urban area. As work began, excavator crews started in the middle of the overpass and moved outward. "To balance the load, we sectioned the bridge in half. The excavators then worked in opposite directions. We had a slotted deck that allowed us to drop the concrete and rebar below," said Beam.

> "The 4099 hammer was running for 22 straight hours and it never skipped a beat.
>
> Glenn Beam

The demolition team then focused on lightening the girders. "First, Rammer 4099 hammer knocked the concrete off and it fell to the deck. Then, we pepper-screwed the rebar and it fell on top of the concrete. We did the same thing with abutments – we peppered-screwed the end-caps," said Beam. The frequency range of 4099 is 400-560 blows per minute. This enabled a total of 345 m^3 of concrete to be removed in a very limited period of time.

Not only was the Route 91 Corridor project executed with precision and accuracy, it beat the anticipated completion date. "Because of the performance of the 4099 Rammer hammer, we were able to open up the Interstate 15 and 91 Corona interchange 11 hours ahead of schedule," said Beam. "The Corona site presented both intense and extreme conditions. The 4099 hammer was running for 22 straight hours and it never skipped a beat."

The Rammer 4099 hammer features the VIDAT System which includes vibration dampened tie-rods that reduce operating costs, extend operating life and minimize downtime. It means you can "beat that clock" both in short-term and long-term demolition scenarios.

FIRST IN SECONDARY BREAKING

A Rammer 3288 hydraulic hammer is helping a Brazilian construction company tackle tough, secondary breaking duties.

OAS SA has reinforced its faith in the Rammer brand with the purchase of a new Rammer 3288 hydraulic hammer for use on a variety of construction projects in the company's native Brazil. The 2,040 kg unit, which was delivered by local dealer Getefer, joins three existing Rammer models in the company's extensive equipment fleet. These include an older Rammer E64, a Rammer 2577, and another Rammer 3288 purchased previously.

Multinational Conglomerate

OAS was founded in 1976 in Bahia, originally working in the engineering and infrastructure sector. Today, the company is a multinational conglomerate, with a presence in more than 20 countries including its native home.

The company employs more than 100,000 people across its two divisions: OAS Engenharia SA which is responsible for the execution of works of heavy construction in the public and private sectors such as roads, airports, power plants, dams and ports; and OAS Investimentos SA which is focused on infrastructure investments, sanitation, multipurpose arenas, oil, gas, urban road concessions, highways, subways and airports.

Secondary Breaking

One of the primary roles for the company's new Rammer 3288 is secondary breaking, an application typified by a recent 1.2 billion Real ($450 million) roadbuilding contract to the North of Sao Paulo City.

"The project requires the removal of a considerable amount of extremely hard granite," explains OAS's equipment chief, Eduardo Boccardo Alves. "We are using blasting techniques when we encounter solid rock but that tends to leave boulders that are too big and too hard to be processed directly by the crusher. That is where the Rammer 3288 comes in."

Alves reports that, in addition to this secondary breaking, Rammer 3288 which is mounted on a Caterpillar 336D excavator is also used to aid tunnel formation in areas where the granite gives way to sand and fragmented rock.

Designed around a new operating principle that can be matched to specific applications, the Rammer 3288 is suitable for carriers in the 27 to 40 tonnes operating weight class. That new operating principle – which combines stroke length, blow energy and Rammer's proven idle blow protector – is easily modified to allow hammers to be matched to individual carriers and applications, improving hydraulic efficiency and productivity. As with all new Rammer Large Range hammers, the Rammer 3288 also features the VIDAT tie rod system, which provides improved reliability and lower operating costs. It also features a state-of-the-art sealing system, and enhanced lubrication for longer service intervals and reduced operating costs.

Great Hammer, Great Service

Eduardo Boccardo Alves readily admits that he was not involved in the decision to purchase the latest Rammer hammer, but he is delighted with the OAS purchasing team's choice. "I believe that Rammer offers first-rate products that deliver great reliability and operational efficiency," he concludes. "And this is backed up by the excellent support that we receive from our local dealer Getefer. Every 15 days, a Getefer engineer inspects all of our Rammer hammers and issues a report detailing any additional maintenance that might be required. This gives us enormous peace of mind as we can't afford for one of our hammer to be out of action. We have great hammers backed by an equally great aftersales support service."

RAMMER BOOM BOOSTS PRODUCTIVITY IN THE COSMIC BOY

Western Areas Ltd, Australia's class leading nickel producer, with a consistent track record of meeting production targets have acquired a Rammer Breaker Boom package to enhance the safety, productivity and profitability of crushing operations in The Cosmic Boy Concentrator.

The concentrator consists of a three stage crushing circuit, followed by a single closed circuit ball mill and a system of flotation tanks and thickening / filtration system to treat raw nickel bearing ore to produce a consistent nickel concentrate product.

Light weight, multi-purpose Rammer C400 Boom with the Rammer 999 hammer will be used next to a primary crusher to clear blockages and bridging contributing to quarry's productivity and enhancing safety as it can be operated directly by the valve levers or by using a Rammer radio control.

25TH ANNIVERSARY

25 YEARS OF COOPERATION

Biuro Handlowe Ruda Trading International, Rammer Dealer in Poland celebrated their 25th anniversary and cooperation with Rammer in January 2015.

The gala dinner was held in Oscar gala theme. Rammer was awarded 25 years of cooperation, President of the board, Mr. Jacek Ruda gave price to Rammer Sales Manager Marko Bercic.


JCB

A TRIP TO THE DENTIST

A fleet of Rammer hammers is spearheading the creation of an underground car park at a dentistry and dermatology clinic in the Qatar capital, Doha.

The very thought of hydraulic hammers and dentistry in the same sentence is enough to make most of us close our mouths in fear. But in the Qatar capital of Doha, dentistry and Rammer hammers are co-existing beautifully without a broken tooth or filling in sight.

Roadbridge LLC is using an impressive fleet of Rammer hammers – ranging from a pair of 3288 models right up to a 7013, the largest unit in the Rammer range – to create an underground car park at a new dental and dermatology hospital. Part of a 35 million Qatari Riyal ($10 million) contract, this will require the removal of around 350,000 m^3 of medium and hard limestone to create a car park space that is 200 meters long, 150 meters wide and some 25 meters deep.

Taking place over a six-month contract duration, this tough, demanding and high intensity work has been entrusted a formidable line-up of Rammer hammers. Heavy breaking is carried out by the 6200 kg Rammer 7013 that is mounted on a Volvo EC700 excavator. This impressive duo is supported by a Komatsu PC600 and a Caterpillar 345 each carrying a 3900 kg Rammer 5011. Elsewhere on the site, a pair of JCB JS360 excavators are carrying out breaking work using two Rammer 4099 hammers that have an operating weight of 2800 kg. Lighter breaking work is charged to two more JCB excavators – JS260 units – that are each equipped with 2040 kg Rammer 3288 breakers.

Despite the high temperatures, dusty conditions and long, 10-hour shift working days, the Rammer hammers have performed admirably. And with work now fully underway, Roadbridge LLC is on target to achieve its productivity aim of 3000 m^3 per day.

According to construction manager Joe O'Connor, much of this success can be attributed to the durability and reliability of the Rammer hammers. "The Rammer hammers are relatively light and yet they are powerful and extremely productive," O'Connor states. "We are achieving an exceptionally long life on the bushings which reduces our costs and prevents unplanned downtime. And the hammers are remarkably quiet making them the ideal choice for inner city applications."

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AIMING HIGH

It is not unusual to see Rammer attachments working at height in the field of demolition. But high reach hammers in a mining application is something differently altogether.

A Rammer 2155 hydraulic hammer is normally installed on carriers in the 16 to 26 tons operating weight class. But at the Siilinjärvi phosphate mine of Yara Suomi, one of the world's largest manufacturers of mineral fertilizers, this 1300 kg hammer model is mounted on a Cat 345 CL excavator with a working weight 52 tonnes. This unusual machine is used for scaling the walls of an open-pit mine and features an extended boom that can reach a height of around 26 metres, hence the hammer's relatively small size in comparison to the base machine.

Record Breaker

E. Hartikainen Oy has worked as a contractor at the Siilinjärvi phosphate mine since 1979 and employs some 200 people in the area. The company currently takes care of the drilling, loading and hauling of apatite and waste rock at the mine's two open-pit quarries under a long-term contract. The company's fleet of 96 to 140 tonnes payload haul trucks shifted 32 million tonnes of rock last year alone.

Excavation records will be broken again in 2015, given the high amount of surface waste rock. The mine needs to be expanded to gain access to deeper lying reserves. The ore content begins to increase at around 100 metres, from which point the proportion of waste rock gradually decreases.

"This year we excavated more than 10 million m^3, of which waste rock accounts for six million," says Mine Manager Sakari Mononen. "The concentrate production volume is around 940,000 tonnes, meaning that we are close to reaching the magic limit of one million,"

Hartikainen has a large fleet of heavy-duty machinery, and everything from a hydraulic hammer to the largest hauling machine is kept in good condition with regular maintenance. The nearly 30 fitters and mechanics working at Hartikainen's in-house repair shop carry out even demanding overhauls, refurbishing all buckets, among other things. However, there is one type of machine that is not overhauled in-house.

"We have several Rammer hammers in four size categories in service. Most of the time, they are used in two shifts. Rammer hydraulic hammers have proved highly reliable, durable and dependable tools. Other hammer brands have never been used at the mine. All servicing is contracted from Marakon in Lahti. After a predefined number of operating hours, the hydraulic hammers are sent to refurbishment and overhaul. If a hammer leaves the site on Monday, it will already be back in service on Friday," says Esa Ruotsalainen, product engineer. "With this kind of regular refurbishment, the hydraulic hammer never needs to be replaced as it is, in a way, born anew with new parts every time."

Precision Required

One of the operators working at the bottom of the quarry is Hannu Hakkarainen, who has operated different types of breakers for several years. Presently under his command is the long-boom Cat equipped with a Rammer 2155 hydraulic hammer. The face height is 14 metres, which means that for scaling the boom needs to be at least 1.5 times long as compared to the face.

"All reserves are frequently put to use and you need to be pretty careful. When the hammer swings up there at 25 meters, the base machine is nearly against the wall," Hakkarainen concludes. "If any material begins to fall down from up there, you need to back away immediately – and fast."

> Rammer hydraulic hammers have proved highly reliable, durable and dependable tools.
>
> Esa Ruotsalainen

Operator Hannu Hakkarainen and Production Engineer Esa Ruotsalainen from E. Hartikainen Oy.

Mine Manager Sakari Montonen, Yara Suomi.

UP FOR THE CUP

Rammer hammer plays key role in project that is paving the way for the controversial Qatar World Cup in 2022.

The hosting of the first-ever winter World Cup might have become lost in mired in controversy, but the construction and infrastructure work required to bring the world's largest soccer event to the Middle East should not be underestimated. And while footballing nations bemoan the thought of playing a World Cup just a few weeks before Christmas in 2022, host nation Qatar is setting about the preparatory works with relish.

Civil Engineering Feat

A key part of those preparatory works includes the creation of a new orbital highway and truck route (P023) near the capital city, Doha. This large-scale urban infrastructure project connects the Mesaieed industrial area and New Port Projects to Salwa Road, and includes a total of approximately 56 kilometres of road works and five main interchanges that will service the projected increase in the area's traffic. It is located to the west and south of Doha City, and will provide connection between three projects of the Expressway Programme. It connects contracts 1 and 2 of the new orbital highway and truck route and the East-West Corridor Projects.

This project will create an expressway with dedicated truck lanes to the west of Doha City linking the New Doha Port and Mesaieed Industrial City in the south with Al Khor in the north. The project includes 22 grade-separated interchanges; and will create a safe, efficient, high speed and high quality highway with free flowing traffic around the outskirts of Doha. This project is a vital part of Qatar's preparation for the FIFA World Cup tournament as it will provide better connectivity to Al Rayyan, Al Khor, Lusail, and Al Wakra Stadiums.

Joint Venture

This huge project has been charged to a joint venture company comprising Habtoor Leighton Group and Al Jaber Engineering. The Habtoor Leighton Group (HLG) was formed in 2007 following the merger of

the UAE's premier building contractor, Al Habtoor Engineering with Gulf Leighton, the Leighton Group's original operating company in the Gulf region. The Leighton Group is Australia's largest project development and contracting group. Al Habtoor Engineering's extensive track record in large-scale building projects complemented Leighton's expertise in large-scale civil infrastructure projects. The Leighton Group was established in Victoria, Australia in 1949 and is now headquartered in Sydney. Al Jaber Engineering (JE) is a leading general contractor based in the State of Qatar. Established in 1995 as part of Al Jaber Group – a major conglomerate with over 30 companies – JE has successfully completed numerous large-scale turnkey projects for many prestigious clients in different sectors including: Highways, Roads and Infrastructure, Engineering, Procurement, Installation & Commissioning (EPIC), Oil, Gas, Petrochemical and Industrial, Pipeline Construction, Power Generation, Substations & Desalination Plants, Sewage Treatment Plants and Pumping Stations, Maintenance of Oil & Gas and Petrochemical Installations, Landmark Buildings

A new orbital highway and truck route (P023) near the capital city, Doha, includes a total of approximately 56 kilometres of road works and five main interchanges that will service the projected increase in the area's traffic.

According to HLG CEO and managing director José Antonio López-Monís, the new project has strengthened the group's presence in Qatar, where it has worked on a number of successful contracts from government clients such as Kahramaa since 2009. "The Orbital Highway is a major opportunity for HLG and our joint venture partner Al Jaber Engineering, and we are pleased to have been selected by Ashghal to work in partnership with them to deliver such an important element of national infrastructure for Qatar."

Quiet & Reliable

At the heart of this enormous project is a huge amount of excavation and groundworks that will forge the road through the hard and medium hard limestone that makes up the local geology.

Much of that hard breaking work has been entrusted to a Rammer 5011 hammer that is mounted on a Hitachi ZX470 excavator. 5 Rammer 5011 hammers that are mounted on Hitachi ZX470 excavators along with 1 No. 4099 mounted on Komatsu PC400.

Selected for its power, durability and low noise characteristics, the hammer is already winning the respect of the joint venture company's on-site team.

"The Rammer hammer is already achieving extremely impressive production levels and we have been particularly impressed by the low noise operation of the breaker," the company concludes. "The hammer's reliability has also been excellent, thanks to the aftercare provided by our local dealer, Arabian Supply Center."

Saravana Raja, Service Engineer from ASC.

CHEMICAL REACTION

Rammer hammers play key role in demolition of contaminated facility that was once the tallest office building in Germany.

Soon, nothing will remain of one of Ludwighafen's most distinct buildings; the Friedrich-Engelhorn high-rise headquarters of BASF. Given that a refurbishment of the contaminated office building would not have been justifiable in neither an economic nor an ecological sense, the management of the chemical company applied for the complete demolition of its former home.

Germany's Tallest

For two years now, AWR Abbruch GmbH has been managing this demolition process. The demolition and dismantling specialist, which is active in the entire Federal Republic and specialises in large industrial and chemical plants, is one of only 60 demolition companies in Germany that are certified according to the RAL certification.

It was exactly 20 years ago that the brothers Ilmi, Gani and Nazmi Viqa founded this family company, headquartered in Urmitz in the district of Mayen-Koblenz. Today, the company employs a total workforce of 150 people and has at its disposal a fleet of more than 180 vehicles. With these resources, it processes dismantling projects of 400,000 m³ of building volume by itself, from planning to realisation and expert building material recycling.

The dismantling of the 102 metre tall BASF building – upon completion in 1957 the highest office building in Germany – is divided into two stages. Between November 2012 and March 2013, core removal and pollutant clean-up took place; ceilings and walls were stripped of paints containing PCB; and shafts containing asbestos had to be professionally removed in accordance with the guidelines.

During the second stage, which commenced in August 2013, the building was systematically dismantled floor by floor. To achieve this, AWR Abbruch – the company attracted considerable media attention by the blasting of the AfE tower of the University of Frankfurt this year – used a pair of tower cranes to place mini excavators on the roof to tackle the top-down demolition to a height of 48 meters. That phase completed, large-scale machines with high reach equipment continued the job from the ground.

Quiet and Dependable

As this construction site is located directly next to the extremely busy Carl-Bosch-Straße, appropriate safety measures, economic and ecological consideration on the part of the site management, and avoiding noise pollution in particular were and are important factors to pay attention to, as with all construction sites.

The dismantling of twenty regular floors, consisting of more than 2500 tonnes of reinforcing and pre-stressed steel and walls that were up to 0,55 m thick in the core area, was, to the greatest possible extent, carried out by about twenty specialists and two machines Hitachi ZX65 excavators equipped with Rammer 999 hammers via OilQuick couplers.

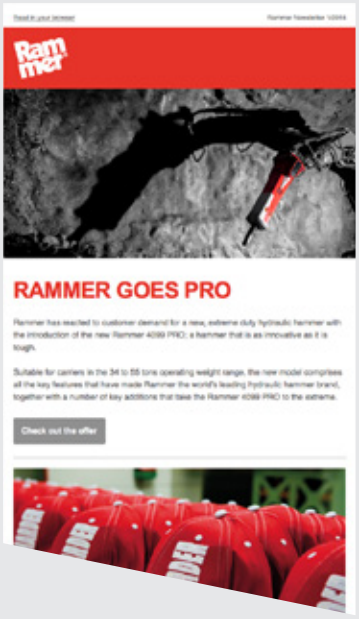
"We are already using 15 high-performance Rammer hydraulic hammers, starting from the small range up to the 7013, the largest hammer in the Rammer range. We can only achieve our goal of ensuring the best performance if we use tools that deliver a corresponding level of performance," explains AWR Abbruch's Ilmi Viqa. "The Rammer hammers are always reliable. They never let us down."

Viqa reports that another key feature of the Rammer 999 hammers is their excellent vibration-resistant and sound-proofed design. "Not once during the permanent noise measurements was the requisite dB(A) level exceeded," Ilmi Viqa adds.

NEW IN MARKETING

SPECIAL LAUNCH MATERIAL FOR PRO SERIES

Our latest marketing support material of newly launched Rammer 4099 PRO series. Ask more from your local Rammer Sales Manager.



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RAMMER HYDRAULIC HAMMERS

Compact range

Model	Working weight, kg (lb)	Impact rate, bpm	Operating pressure, bar (psi)	Tool diameter, mm (in)	Acceptable oil flow, l/min (gal/min)	Mini excavator weight, allowed range, t (lb)
108	75-85 (170-190)	400-1900	100-140 (1450-2030)	104 (4.09)	12-30 (3.2-7.9)	0.8-1.8 (1800-4000)
211	105-120 (230-260)	400-1900	100-140 (1450-2030)	119 (4.69)	14-40 (3.7-10.6)	1.2-2.6 (2600-5700)
315	145-160 (320-350)	400-1900	100-140 (1450-2030)	131 (5.16)	16-50 (4.2-13.2)	1.6-3.6 (3500-7900)
522	220-245 (490-540)	400-1900	110-150 (1595-2175)	150 (5.91)	20-70 (5.3-18.5)	2.5-5.5 (5500-12100)

Small range

Model	Working weight, kg (lb)	Impact rate, bpm	Operating pressure, bar (psi)	Tool diameter, mm (in)	Acceptable oil flow, l/min (gal/min)	Carrier weight, allowed range, t (lb)
155	90 (200)	1000-2600	80-130 (1160-1885)	36 (1.42)	15-33 (4.0-8.7)	0.6-1.8 (1300-4000)
255	110 (240)	600-3200	95-150 (1380-2175)	40 (1.57)	15-35 (4.0-9.2)	0.8-2.5 (1800-5500)
355	150 (330)	800-3000	90-150 (1305-2175)	48 (1.89)	25-55 (6.6-14.5)	1.1-3.6 (2400-7900)
455	230 (510)	700-2600	100-170 (1450-2465)	56 (2.20)	40-70 (10.6-18.5)	2.7-5.2 (6000-11500)
555	275 (610)	600-1800	90-140 (1305-2030)	72 (2.83)	35-90 (9.2-23.8)	3.2-8.0 (7100-17600)
777	385 (850)	500-1700	90-140 (1305-2030)	80 (3.15)	40-120 (10.6-31.7)	4.3-9.5 (9500-20900)
999	505 (1110)	500-1700	100-140 (1450-2030)	90 (3.54)	50-150 (13.2-39.6)	5.8-13.0 (12800-28700)
1322	850 (1870)	500-1000	125-150 (1815-2175)	95 (3.74)	60-120 (15.9-31.7)	9-15 (19800-33100)

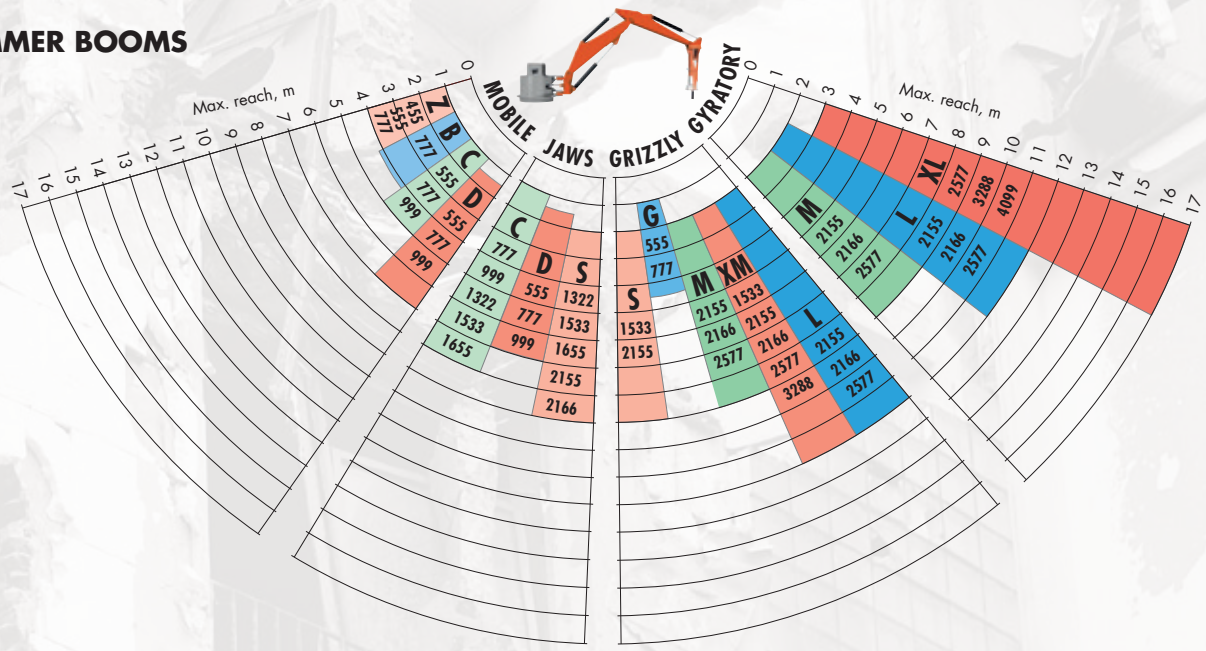
Medium range

Model	Working weight, kg (lb)	Impact rate, bpm	Operating pressure, bar (psi)	Tool diameter, mm (in)	Acceptable oil flow, l/min (gal/min)	Carrier weight, allowed range, t (lb)
1533	870 (1920)	550-1050	140-160 (2030-2320)	105 (4.13)	80-140 (21.1-37.0)	10-19 (22000-41900)
1655	1080 (2380)	540-920	135-145 (1960-2105)	115 (4.53)	90-130 23.8-34.3	12-20 (26500-44100)
2155	1240 (2730)	490-780	140-160 (2030-2320)	118 (4.65)	120-180 (31.7-47.6)	16-26 (35300-57300)
2166	1400 (3090)	430-790	140-160 (2030-2320)	125 (4.92)	120-180 (31.7-47.6)	18-26 (39700-57300)
2577	1760 (3880)	450-750	135-145 (1960-2105)	135 (5.31)	140-200 (37.0-52.8)	21-30 (46300-66100)

Large range

Model	Working weight, kg (lb)	Impact rate, bpm, Long/Short stroke	Operating pressure, bar (psi)	Tool diameter, mm (in)	Acceptable oil flow, l/min (gal/min)	Carrier weight, allowed range, t (lb)
3288	2400-2500 (5290-5510)	370-630/ 460-740	150-160 (2175-2320)	142 (5.59)	160-250 (42.3-66.0)	26-40 (57300-88200)
4099	3380-3540 (7450-7800)	400-560/ 520-700	150-160 (2175-2320)	166 (6.54)	250-350 (66.0-92.5)	34-55 (75000-121300)
5011	4750-5200 (10470-11460)	370-530	160-170 (2320-2460)	190 (7.48)	280-380 (73.9-100.4)	43-80 (94800-176400)
7013	7000 (15432)	350-450	150-170 (2175-2465)	203 (7.99)	300-400 (79.3-105.7)	60-100 (132300-220500)

RAMMER BOOMS



RAMMER DEMOLITION TOOLS

Demolition Grapples	RG1877	RG3077	RG4577
Weight	1860 kg (4100 lb)	2750 kg (6060 lb)	3500 kg (7720 lb)
Min working weight	2140 kg (4720 lb)	3150 kg (6940 lb)	4000 kg (8820 lb)
Lifting capacity	4000 kg (8820 lb)	5000 kg (11020 lb)	6000 kg (13230 lb)
Max. jaw opening	865 mm (34.06 in)	1080 mm (42.52 in)	1235 mm (48.62 in)
Jaw width	500 mm (19.69 in)	630 mm (24.80 in)	700 mm (27.56 in)
Crushing force	500 kN (112404 lbf)	670 kN (150622 lbf)	800 kN (179847 lbf)
Volume, jaws closed	150 l (150 l)	260 l (260 l)	330 l (330 l)
Max. operating pressure	350 bar (5075 psi)	350 bar (5075 psi)	350 bar (5075 psi)
Oil flow (recom.)	240 l/min (63.4 gal/min)	240 l/min (63.4 gal/min)	240 l/min (63.4 gal/min)
Carrier weight (1)	10-25 t (22000-55100 lb)	20-40 t (44100-88200 lb)	35-60 t (77200-132300 lb)

Pulverizers	RB 2430	RB 3042
Weight	1800 kg (3970 lb)	3050 kg (6720 lb)
Max. jaw opening	870 mm (34.25 in)	1155 mm (45.47 in)
Max. cutting force	1350 kN (303492 lbf)	2330 kN (523805 lbf)
Max. crushing force	770 kN (173103 lbf)	1220 kN (274267 lbf)
Max. operating pressure	320 bar (4640 psi)	320 bar (4640 psi)
Oil flow (recom.)	180 l/min (47.6 gal/min)	250 l/min (66.0 gal/min)
Cutting blade length	280 mm (11.02 in)	280 mm (11.02 in)
Carrier weight (1)	18-28 t (39700-61700 lb)	24-42 t (52900-92600 lb)

Cutter-Crushers	RC504	RC706	RC2022
Weight	205 kg (450 lb)	355 kg (780 lb)	2300 kg (5070 lb)
Max. jaw opening	312 mm (12.28 in)	400 mm (15.75 in)	720 mm (28.35 in)
Max. cutting force	460 kN (103412 lbf)	750 kN (168607 lbf)	1600 kN (359694 lbf)
Max. crushing force	180 kN (40466 lbf)	240 kN (53954 lbf)	700 kN (157366 lbf)
Max. operating pressure	250 bar (3625 psi)	250 bar (3625 psi)	320 bar (4640 psi)
Oil flow (recom.)	40 l/min (10.6 gal/min)	60 l/min (15.9 gal/min)	180 l/min (47.6 gal/min)
Connections, rotation	N/A	1/2" BSP	JIC 06 (9/16-18)
Cutting blade length	100 mm (3.94 in)	200 mm (7.87 in)	400 mm (15.75 in)
Carrier weight (1)	2.5-6 t (5500-13200 lb)	4-9 t (8800-19800 lb)	20-40 t (44100-88200 lb)

Sorting Grapples	RG433	RG633	RG1233	RG2033	RG3033
Weight	280 kg (620 lb)	380 kg (840 lb)	800 kg (1760 lb)	1200 kg (2650 lb)	2020 kg (4450 lb)
Lifting capacity	2000 kg (4410 lb)	2000 kg (4410 lb)	4300 kg (9480 lb)	4600 kg (10140 lb)	5600 kg (12350 lb)
Max. jaw opening	1005 mm (39.57 in)	1425 mm (56.10 in)	1830 mm (72.05 in)	2060 mm (81.10 in)	2440 mm (96.06 in)
Jaw width	400 mm (15.75 in)	550 mm (21.65 in)	800 mm (31.50 in)	1000 mm (39.37 in)	1250 mm (49.21 in)
Crushing force	20 kN (4496 lbf)	20 kN (4496 lbf)	53 kN (11915 lbf)	55 kN (12364 lbf)	70 kN (15737 lbf)
Volume, jaws closed	160 l (160 l)	330 l (330 l)	420 l (420 l)	650 l (650 l)	890 l (890 l)
Max. operating pressure	320 bar (4640 psi)	320 bar (4640 psi)	350 bar (5075 psi)	350 bar (5075 psi)	350 bar (5075 psi)
Oil flow (recom.)	50 l/min (13.2 gal/min)	50 l/min (13.2 gal/min)	80 l/min (21.1 gal/min)	80 l/min (21.1 gal/min)	80 l/min (21.1 gal/min)
Carrier weight (1)	3-6 t (6600-13200 lb)	5-11 t (11000-24300 lb)	10-17 t (22000-37500 lb)	16-23 t (35300-50700 lb)	23-40 t (50700-88200 lb)

Multiprocessors	RD807	RD1515	RD2019	RD2525	RD3032
Weight	600 kg (1320 lb)	1600 kg (3530 lb)	2210 kg (4870 lb)	2760 kg (6080 lb)	3300 kg (7280 lb)
Max. jaw opening	494 mm (19.45 in)	566 mm (22.28 in)	702 mm (27.64 in)	829 mm (32.64 in)	912 mm (35.91 in)
Max. cutting force	840 kN (188840 lbf)	2060 kN (463106 lbf)	2800 kN (629465 lbf)	3300 kN (741870 lbf)	3420 kN (768847 lbf)
Crushing force, front	290 kN (65195 lbf)	640 kN (143878 lbf)	880 kN (197832 lbf)	1050 kN (236049 lbf)	980 kN (220313 lbf)
Crushing force, rear	440 kN (98916 lbf)	900 kN (202328 lbf)	1350 kN (303492 lbf)	1420 kN (319229 lbf)	1500 kN (337213 lbf)
Max. operating pressure	250-320 bar (3625-4640 psi)	320 bar (4640 psi)	320 bar (4640 psi)	350 bar (5075 psi)	320 bar (4640 psi)
Oil flow (recom.)	100-150 l/min (26.4-39.6 gal/min)	230 l/min (60.8 gal/min)	230 l/min (60.8 gal/min)	230 l/min (60.8 gal/min)	280 l/min (74.0 gal/min)
Cutting blade length	130 mm (5.12 in)	130 mm (5.12 in)	130 mm (5.12 in)	180 mm (7.09 in)	220 mm (8.66 in)
Carrier weight (1)	6-10 t (13200-22000 lb)	10-18 t (22000-39700 lb)	16-25 t (35300-55100 lb)	22-35 t (48500-77200 lb)	28-35 t (61700-77200 lb)

WE CARE ABOUT YOUR SAFETY

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