

JULY 2019

ISSUE 73

D2E

DOWN TO EARTH MAGAZINE

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COMMENTS

Thank you for reading this exciting edition of D2E.

My reflection in this edition is that whilst Komatsu is a very well established company (100 years old in 2021 indeed Joy Global - 100 years this year), the company is continuing to change, innovate and evolve.

The Komatsu I joined 15 years ago is a very different company today. Indeed even over the last three years change has been truly breath taking for this century old company.

Even as we go to print on this edition of D2E we have announced our acquisition of Immersive Technologies. This great home grown global METS (Mining Equipment and Technology Services) company will add yet another dimension to Komatsu's growing engagement not only in Mining, but also Construction.

Another home grown global METS company acquired by Komatsu Mineware, is already evolving and integrating its technology into Komatsu equipment. This Argus PLM technology is now integrated into Komatsu's Hydraulic Mining shovels. See story page 11.

Montabert, part of the acquisition of Joy Global a few years ago, is now supplying a full range of hydraulic breakers for our construction and utility size diggers (Page 16). Consider this, together with our 3D integrated machine control models and I think you will agree Komatsu is rapidly evolving.

Komatsu is also leading the digital revolution in our industry. Real time machine data streaming and analytics is providing tangible benefits and outcomes for our customers. For example, see the story on page 18 & 19 on Smart Solutions.

As always aftermarket support is critical. You might pay 10% less for our competitors machine, but if it's not working or unreliable when you do need it, that's 90% of your money not earning you anything. Not only can you continue to expect the best quality equipment in the industry, this has long been the case. But you may be surprised to know that Komatsu in Australia/NZ is now approaching 4000 people. We support our equipment anywhere as the National distributor for both Australia and New Zealand. Even if you don't take your earth moving business across state lines, it means we have the largest network of parts and technical support that can be drawn from to support you. No fuss, no matter where you purchased your equipment.

Continuing this theme of convenience is the exciting development of myKomatsu our online parts and machine data portal. See page 4.

So, I hope you will agree Komatsu is a company leading change in our industry. Strong engineering roots, the shear hard work of our people and bold innovation are allowing us to grow tall. Komatsu is a supplier you have relied on in the past for sure, but perhaps we can now become your trusted partner to help you meet the complex challenges in front of us all? I hope we can be of service.

All the best.

Sean Taylor
Managing Director & CEO

CONTENT

LATEST KOMATSU PRODUCTS & SERVICES

Introducing myKomatsu: Buy parts online, quickly & easily	4
D375Ai-8: Komatsu's first mining dozer with intelligent Machine Control	6-7
GD655-7: The future is at your fingertips on new contractor-focused grader	8-9
Komatsu & Mineware announce mining's first integrated payload management system	11
A brief introduction to Komatsu conveyor systems	14
A brief introduction to Komatsu's expanded crushing product line	15
Komatsu announces new range of hydraulic rock breakers	16
Genuine Komatsu undercarriages in for the long haul	17
Smart Solutions: Komatsu's game-changing approach to machine data analytics	18-19
Latest P&H 77XR drill offers safer operation, automation features	20-21

KOMATSU NEWS

Komatsu Training Academy partners with Thiess to deliver national apprenticeship training	22
Komatsu apprentice Alanna Dennien wins Queensland exceptional tradesperson award	23
Komatsu/Cummins/Rio support Beyond Blue	24
How embedded resources program has added value for major Komatsu mining customer	28-29
Komatsu fulfils worthy dreams	36-37

KOMATSU CUSTOMERS

Townsville's "Big Blue" excavator	25
Key relationships keep Ben loyal to Komatsu	26-27
Partnership is key to success	30
Bigger is more efficient for quarry	31
Young mum resumes work as Komatsu excavator operator	32
Third-generation quarry business at the cutting edge with Komatsu	33
How Mick Hawe takes advantage of Komatsu innovation – and keeps a lid on costs	34-35
Queensland's first automated excavator gets down to work	38

KOMATSU KIDS

Komatsu Kids Corner	39
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Printed by
Snap Printing-Wetherill Park



Printed on Maine Recycled - Gloss
Printed in Australia

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FRONT COVER

Komatsu releases first mining dozer with intelligent Machine Control

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“We aim for it to be a self-service tool, through its easy access to parts searching, and the ability to buy the exact parts they need when it suits them – any time of the day or night,”

Pictured: MyKomatsu online parts customer portal is designed to let Komatsu owners quickly and easily find and order the parts they need – 24/7.

INTRODUCING MYKOMATSU: BUY PARTS ONLINE, QUICKLY & EASILY

Komatsu has launched myKomatsu, a new online parts customer portal that makes ordering parts a quick and easy process.

Available 24/7 throughout Australia and New Zealand, myKomatsu has been designed to ensure that customers order the right parts for their machines and are through to checkout as quickly as possible.

It is completely cross-platform, allowing parts to be ordered via computer, smartphone or tablet – and then track the progress of orders and when they will be delivered.

According to Todd Connolly, Komatsu’s General Manager, Construction Solutions, this new sales channel aligns with the company’s philosophy of being “easy to do business with”.

“Ordering parts for earthmoving equipment can be a complex and time-consuming task, but myKomatsu has been developed based on our customer-first philosophy,” he said.

“Our industry-leading site offers customers multiple ways to find the correct part, including by part number, key word, parts book or machine type, make and model – with customers able to use whatever method best suits them.

“And once an online order has been placed, the order automatically passes through our business systems within minutes until it is ready to be dispatched from the nearest distribution centre.”

“We aim for it to be a self-service tool, through its easy access to parts searching, and the ability to buy the exact parts they need when it suits them – any time of the day or night,” said Todd.

“It also offers significant benefits for larger construction and utility fleet owners who may prefer to manage their parts ordering online.

myKomatsu introduces a number of new features to further benefit customers and make ordering the right part faster, easier and more efficient.

“These include online credit card payment options, and the ability to track the progress of deliveries,” he said.

“We also have automatic supersession management, which means that if a particular part has been superseded, the customer will automatically be offered the updated part.”

In addition, myKomatsu gives customers the choice of being able to purchase anonymously as a Guest, or to register and have their existing offline trade account fully integrated with their online account.

Deliveries are free of charge for orders over \$A/NZ500.

Todd said that as an organisation driven by People Powered Technology, the quality of customer support Komatsu provides is equally as important as the product itself.

“This means that myKomatsu is backed by experienced personnel, who will ensure a customer’s experience is never compromised,” he said.

“That’s why myKomatsu includes a dedicated team offering 24/7 support to any customer engaging with the website.

“If they have a question or a problem, we will have people on hand to help,” he said.

To order parts through myKomatsu, please visit **my.komatsu.com.au** (Komatsu Australia customers) or **mykomatsu.co.nz** (Komatsu NZ customers).



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D375Ai-8

Komatsu's first mining dozer with intelligent Machine Control

Komatsu's D375Ai-8 "intelligent" dozer is the first mining dozer incorporating Komatsu's fully integrated intelligent Machine Control system, which delivers proven productivity, efficiency and cost-saving benefits.

The 72.9 tonne D375Ai-8 is powered by a US EPA Tier 4 Final emission certified Komatsu SAA6D170E-7 diesel engine rated at 455 kW in forward gears, and 558 kW in reverse, to provide more reversing power for higher productivity.

According to Michael Hall, Komatsu Australia's Mining Product Manager, the iMC version of the dozer can carry out high precision dozing in fully automatic mode from start to finish, delivering conformance to plan and reducing rework.

While this is Komatsu's first mining machine fitted with integrated Machine Control, the concept has been successfully used on the company's smaller and mid-sized dozers across Australia and New Zealand over the past three years.

"The concept has been shown to significantly increase productivity and efficiency – up to twice as productive as dozers fitted with 'bolt-on' third party machine control systems according to Australian users and operators – while reducing the cost of each metre of material moved," he said.

"This will deliver major benefits to mining operations across the board, whether in bulk material movement, chasing thin or narrow seams, mine infrastructure works, stockpile management, or in rehabilitation projects," said Michael.

Testing in Australia has proven the benefits of Intelligent Machine Control in applications requiring a high level of accuracy and where the level of skill required may exceed what is available.

"Komatsu's intelligent Machine Control is another step on the path to fully autonomous dozer operation".

"In addition, this technology offers significant safety benefits in stockpile applications with a remote control-ready option available," said Michael.

As well as mining operations, the D375Ai-8 also has applications in quarrying and heavy construction projects.

Integrated machine control

The D375Ai-8 intelligent dozer incorporates as standard a factory-installed fully integrated Global Navigation Satellite System (GNSS) machine control system.

"Because the machine control system is fully integrated, it eliminates the need for coiled cables between machine and blade, the operator or service technicians don't have to climb up on the machine to remove and replace antennas or masts, and there's no requirement for daily connections and recalibrations," said Michael.



"With these machines, not only can the automatic machine control features be used for final grading but also for bulk dozing – a capability which is unique to Komatsu intelligent dozers"

"As well, an enhanced sensor package combined with an intelligent logic system provides for high accuracy in a fully integrated system without the need for traditional blade-mounted sensors – which can be subject to damage, theft or vandalism."

Komatsu's integrated Machine Control system automatically controls blade elevation and tilt according to target design data, using common industry standard design data software and systems.

"With these machines, not only can the automatic machine control features be used for final grading but also for bulk dozing – a capability which is unique to Komatsu intelligent dozers," Michael said.

"Loading of the blade at the start of the cut is controlled via set parameters; during the pass, if the load on the blade increases, automatic blade control manages the load and minimises shoe slip, ensuring effective dozing at all times and reducing undercarriage wear".

"Then when the material level approaches the target design surface, the machine reverts to fine blade control for close final grading," he said.

"Highly experienced dozer operators have reported that, with this technology, they can be more productive than they have ever been before – placing material faster and with more accuracy than any existing dozer/machine control combination."

Dozing progress can be checked using the integrated as-built mapping display, which collects surface data by continuously measuring actual elevations as the machine operates.

This data is also communicated back to the planning software to enabling monitoring of actual material movement by planning and management personnel.

Komatsu's intelligent dozer technology is also readily integrated with its SMARTCONSTRUCTION offering, which combines drone-based survey and site management systems and cloud-based information offerings to design, plan, construct and manage mining, quarrying and construction operations.

"When Komatsu released our first intelligent dozer, the 20 tonne D61EXi/PXi-23 construction dozer in 2014, the technology was described as fully scalable to other machines in our dozer range," said Michael.

"We proved this with the release of three additional iMC dozers in 2016, and now we've extended the technology to our mining-sized D375Ai-8."

Other performance enhancements

The new D375Ai-8 is based on the recently released D375A-8, which features a combination of a fuel-efficient low-emission engine, increased reversing power and enhanced chassis and track frame durability to deliver significantly lower operating costs per metre of material moved.

It is powered by a Komatsu SAA6D170E-7 Tier 4-compliant diesel engine that not only greatly reduces emissions compared with previous generation engines, but also reduces fuel consumption through a heavy duty EGR (exhaust gas recirculation) system, a hydraulically driven radiator cooling fan and Komatsu auto idle stop.

Production efficiency is enhanced through increasing engine power by 20% when in reverse, reducing cycle time in downhill dozing applications – the most efficient method of bulk dozing.

"Compared with our previous generation D375A-6, production in downhill dozing is increased by 18%," said Michael.

Other features of Komatsu mining dozers are an automatic transmission with lockup torque converter for reduced fuel consumption and greater powertrain efficiency, improved ride and operator comfort levels, better visibility to the blade and ripper, and maintainability enhancements.

"The D375A-8 was a significant advance in dozer technology in terms of improved performance, productivity, operator comfort and ease of maintenance," said Hall.

"Our new D375Ai-8 intelligent dozer takes that technology to the next level through its integration of machine control and its benefits to all types of dozing operation."

Brief specs of the D375Ai-8 are: Operating weight, 72.9 tonnes; powered by Komatsu SAA6D170E-7 engine rated at 455 kW (net) in forward gears, 558 kW (net) in reverse; blade capacity, 18.5 cu m (semi-U), 22.0 cu m (Full U), fully integrated Komatsu factory-fitted intelligent Machine Control (iMC) system.

Brief specs of Komatsu's new D375Ai-8:

Operating Weight (tonnes)	Engine	Blade Capacity	Fully integrated Komatsu factory-fitted
72.9	SAA6D170E-7 engine rated at 455 kW (net) in forward gears, 558 kW (net) in reverse	18.5 cu m (semi-U), 22.0 cu m (Full U)	intelligent Machine Control (iMC) system

Pictured: Komatsu's new GD655-7 grader comes from the factory "plug-and-play" ready to use a Topcon 2D or 3D machine control system.

GD655-7

The future is at your fingertips on new contractor-focused grader

Komatsu has released a new grader, the GD655-7, incorporating a number of technology innovations compared with its predecessors as well as other graders on the market – aimed at making it easier to use and more productive, in a package that the company believes makes them particularly attractive to contractors.

The GD655-7 is powered by a Komatsu SAA6D107E-3 Tier 4 Final-compliant variable horsepower engine, rated at 134-165 kW (depending on gear and operating mode) and with an operating weight of 19.3 tonnes with rear ripper.

Technology innovations include updates to the transmission and control improvements that make it easier to operate, for reduced operator fatigue and increased safety, as well as being factory-fitted to take a Topcon single antenna 3D machine control system.

According to Phil Atley, Komatsu's National Business Manager, Government & Construction Graders, the GD655-7 grader represents a significant technology step forward in grader design and ease of operation.

"We're highlighting these enhanced grader control systems as putting the future at your fingertips," he said.

These technology innovations include an all-new operator station, that incorporates EPC (electronic proportional controls) for blade and ripper functions and a dual function palm controlled steering as well as a steering wheel fitted as standard.

"Our EPC palm control systems greatly cut down operator effort, reducing hand/wrist movements by 95%, and resulting in far lower operator fatigue and improved jobsite safety," said Phil.

"In addition, this new grader retains our unique dual-mode direct drive and torque converter transmission system, upgraded with a new range change and forward/reverse controls for reduced driveline shock – and again contributing to reduced operator fatigue and very long service life of transmission drive line components.

"The Tier 4 Final Komatsu engine, which has been matched to the Komatsu-designed and built transmission and driveline, results in fuel consumption reductions of 5-15% compared with our previous models," he said.

Standard on the GD655-7 is a factory-fitted Topcon Single Antenna 3D machine control system, allowing customers to simply plug in their own or rented Topcon 3D machine control system, with no additional cabling or brackets.

"With this 'plug and play' readiness, customers can go straight to work with a Topcon 3D machine control system – or in the very near future Trimble 3D – without having to spend money and time on preparing the machine," said Phil.

"We believe these technology advances, including improved ease of use, increased safety and true machine 'plug and play' gives our new grader strong appeal to Australian contractors."

"We believe these technology advances, including improved ease of use, increased safety and true machine 'plug and play' gives our new grader strong appeal to Australian contractors."

Compared with Tier 3 predecessor engines, the GD655-7's Tier 4 Final-compliant engine technology reduces both particulate matter (PM) and nitrous oxide (NOx) levels by 90%, while reducing fuel consumption by up to 15%.

"This new grader uses 5% less fuel in P (power) mode, and 15% less fuel in E (economy) mode," he said.

"Fuel consumption is further reduced through increased cooling capacity, a new auto idle stop function, an improved operator interface on the machine monitoring system, and a new ECO assistance feature that encourages fuel-saving operating practices."

As with all Komatsu Tier 4 engines, it incorporates an advanced electronic control system that performs high-speed processing of all signals from sensors installed in the grader, providing total control of equipment across all conditions of use.

Engine condition information is displayed via an on-board network to the monitor inside the cab, providing all necessary operating data to the operator.

Additionally, this data can be accessed and managed via Komatsu's KOMTRAX telematics remote monitoring system (supplied as standard on all Komatsu construction and utility machines), ensuring owners and fleet managers stay well on top of all maintenance requirements.

This also allows Komatsu to advise machine owners of upcoming service requirements, as well as providing machine health, performance and location information, as well as Fix It First Time real time diagnostics

Phil said the new GD655-7 grader machine retained all the benefits of its predecessor machines, while significant technology improvements contributed to increased productivity and safety, while lowering ownership and operating costs.

"Komatsu graders have become recognised for their outstanding visibility to the blade, front wheels and rear ripper – and that's been improved even more through further improvements to cab design.

"Operators also appreciate our unique Komatsu transmission system, which provides the option of full powershift or our lockup Torque Converter Auto mode, which delivers power for tough grading, or low-speed fine control," he said.

Komatsu's lock-up torque converter transmission with electronic control has been designed and manufactured specifically for Komatsu graders, providing on-the-go, full power shifting as well as inching capability and automatic shifting in higher ranges.

It provides the option of automatic torque converter mode for maximum productivity in any application, with its automatic gear shifting, while manual mode gives direct drive in all gears, working the same way as conventional power shift graders, with constant machine speed, more economical operation.

An engine stall prevention function operates in manual mode, automatically changes to auto mode with torque converter to avoid stalling, and having to restart the grader.

In addition to the ultra-low emission levels from its Tier 4 engine, an electronic control engine management system combined with a new variable displacement hydraulic pump system and improved transmission and axle components have resulted in significantly improved fuel consumption.

Machine durability has been enhanced through a reinforced blade circle, plus a change to a resin in the circle wear plate material, which prevents scratches and results in longer service life.



Pictured: With industry-leading visibility to the work area, Komatsu's new GD655-7 grader represents a significant technology step forward in ease of operation that includes IPC for blade and ripper functions, dual function palm controlled steering and a steering wheel fitted as standard.

Brief specs of Komatsu's new GD655-67:

Operating Weight (tonnes) with ripper,	Engine Tier 4-compliant	Blade Length	Transmission	Speeds	Overall Length	Industry leading minimum turn radius
19.3 tonnes	SAA6D107E-3 engine rated at 134-165 kW (depending on gear & operating mode)	4.27 m	full powershift with lockup torque converter with anti-stall function	8F/4R, maximum speed, 44.3 km/h	10.875 m	7.4 m



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Pictured: Launched at Bauma in April, MineWare's Argus PLM has been specifically developed to work with Komatsu excavators.

KOMATSU & MINEWARE ANNOUNCE MINING'S FIRST INTEGRATED PAYLOAD MANAGEMENT SYSTEM

Komatsu and subsidiary MineWare have jointly launched their first factory-fitted payload management system, Argus PLM, at Germany's Bauma 2019 trade fair in April.

According to MineWare Vice President of Marketing and Sales, Roy Pater, Argus PLM drives whole-of-mine improvement by increasing loading tool productivity and efficiency, which ultimately lowers cost per tonne.

Argus PLM is an original equipment manufacturer (OEM) version of the MineWare Argus monitoring system, designed exclusively for Komatsu excavators. It is initially available on the new PC7000-11 mining excavator.

"Mining operators need world-class technology solutions to improve productivity, reduce costs and increase their global competitiveness," said Roy.

"By uniting Komatsu and MineWare capabilities, we're offering customers the opportunity to have production improvement technology fully integrated with the machine, when ordering a new machine, to achieve these benefits.

"Argus PLM enables OEMs, like Komatsu, to deliver a superior and unrivalled machine for the mining industry while also shifting technology development further towards tele-remote and autonomous mining operations."

Argus PLM integrates seamlessly with Komatsu's KOMTRAX operating system and forms part of the on-board display.

This delivers actionable production information, in real time, from the machine directly to the operator. If the mine site has suitable connectivity, this information can be transmitted back to the site office too.



Pictured Left to Right: (Dr Oliver Martins – KGM Head of Research and Testing, Adam O'Connor – MineWare OEM Manager, Roy Pater Mine Ware VP-Marketing & Sales, Andrew Jessett – MineWare CEO). At the launch of the Komatsu Argus PLM at Bauma.

Roy said the system provides mining personnel on and off site with greater production visibility and performance benchmarking data to monitor, take action and understand how to improve the machine's productivity.

"This system adds value to every bucket load," he said, "enabling operators and supervisors to continually improve productivity and contribute to whole of mine production.

"Ultimately that means moving more tonnes for less cost."

With Argus PLM, Komatsu is the first OEM to deliver an in-cab payload management and guidance system, that is fully integrated with the excavator's own operating system.

Argus PLM will be available on all new Komatsu PC7000-11 models.

Komatsu plans to continue rolling out the Argus PLM across the rest of its excavator range.

"Argus PLM enables OEMs, like Komatsu, to deliver a superior and unrivalled machine for the mining industry while also shifting technology development further towards tele-remote and autonomous mining operations."



Pictured: Argus PLM payload management system is initially available on the new Komatsu PC7000-11 excavator.





KOMATSU

From product to progress

It takes an incredible amount of raw materials to build the structures, cities and roads that we use every day—and you can't afford to be short on any of them. Joy high angle conveyor systems use sandwich belt technology with standard idlers and smooth surface belts to reliably handle construction materials in steep angle applications.

Learn more about our HAC systems at www.mining.komatsu



Pictured: Since the early 1980s, HAC systems have proven to be a versatile and economical option for elevating or lowering materials from one level to another at extremely steep angles.



Pictured: Curved overland conveyors are an ideal solution to mining, quarrying and processing applications where materials have to be transported through environmentally sensitive or built-up urban areas.



A BRIEF INTRODUCTION TO KOMATSU CONVEYOR SYSTEMS

Daniel Rose, Komatsu's Product Manager, Conveyors, looks at applications and opportunities available through Komatsu's advanced and innovative conveyor offerings.

Komatsu conveyor systems offer an economical and productive solution, particularly for deep pit, confined space or environmentally sensitive quarrying and processing applications.

Following Komatsu's acquisition of Joy Mining in 2017 to form Komatsu Mining Corporation, the company significantly expanded its product line to include a range of conveying, crushing and processing products.

Drawing on a heritage of more than 100 years of conveyor systems development, Komatsu now has the expertise to provide materials handling solutions suitable for a wide range of quarrying, mining and civil construction applications.

Komatsu Conveyors are derived from a product line that Joy Global acquired from the Continental Conveyor Corporation in 2007.

More than 1000 conveyor systems have been supplied worldwide to multiple industry sectors.

Two solutions ideal for mining, quarrying and selected construction applications are High Angle Conveyors (HACs) and Curved Overland Conveyors.

High Angle Conveyors (HACs)

Since the early 1980s, HAC systems have proven to be a versatile and economical option for elevating or lowering materials from one level to another at extremely steep angles.

Applications can include deep-pit mining or quarry operations, and also deep excavations, such as for high-rise building foundations.

HAC systems use standard conveyor belting, idlers, drums, so replacement of components is quick and easy. HAC systems in place around the world have demonstrated high availability and low maintenance costs.

Each HAC system is purpose-designed to suit each application.

Belt widths typically range from 600 mm to 3000mm, and conveying angles can be anything from -35° (downhill) to 90° (vertical).

A prime example of a successful HAC installation was a limestone quarry in the USA, that was facing closure due to increasingly steep truck haulage out of the pit, making operations uneconomical.

Komatsu's Joy HAC installation has ensured the trucks could remain in-pit and has extended the quarry life by more than 30 years.

In Australia, a HAC has recently been successfully installed at a sand and gypsum processing plant in Australia, as a solution to issues with sticky materials that could not be resolved using other vertical lift systems.

Curved Overland Conveyors

Curved overland conveyors are an ideal solution to mining, quarrying and processing applications where materials have to be transported through environmentally sensitive or built-up urban areas, including around natural landscape features or existing infrastructure.

Recently, Komatsu has designed and is now commissioning long and complex turnkey curved overland conveyor systems for major quarries in Thailand and the UK.

These projects required in-depth consultation with quarry operators, local authorities and other stakeholders, resulting in successful solutions to difficult challenges.

For a major installation in the UK, Komatsu provided a feasibility evaluation study into a curved overland conveyor system, and continued providing technical support throughout the entire project.

This has successfully overcome a number of challenges, including environmentally sensitive flora and fauna, as well as aesthetic considerations such as height restrictions to make the new operation almost invisible from surrounding urban areas.

Each HAC system is purpose-designed to suit each application. Belt widths typically range from 600 mm to 3000mm, and conveying angles can be anything from -35° (downhill) to 90° (vertical).

Pictured: Joy feeder-breakers from Komatsu have been supplied to quarrying and processing operations around the world.



Pictured: Joy sizers, now available from Komatsu, are offered in both primary and secondary sizer configurations.

A BRIEF INTRODUCTION TO KOMATSU'S EXPANDED CRUSHING PRODUCT LINE

Matthew Valmadre, Komatsu's Business Manager Crushing, outlines the range of products now available through Komatsu for carrying out a range of crushing and processing operations.

In the wake of Komatsu's acquisition of Joy Global in 2017 to form Komatsu Mining Corporation, the company has significantly expanded its Joy crushing product line.

The company now offers a complete range of feeder breakers, reclaim feeders and sizers – suitable for a wide range of mining, quarrying and processing applications.

Feeder-breakers

Joy feeder-breakers are derived from a product line that Joy Global acquired from Stamler Corporation in 2006. Since this acquisition, more than 4200 feeder-breaker installations have been supplied to quarrying and processing operations around the world.

Joy feeder-breakers consist of dual-strand conveyor chain, which drags raw material under a breaker shaft fitted with picks.

The advantage of a feeder-breaker is that the material flows horizontally through the machine, so the overall installation height can be significantly lower than other crusher types of comparable capacities.

Reclaim feeders

Joy reclaim feeders are similar to feeder-breakers except there is no breaker shaft; instead the feeder typically has a pile of material which it reclaims on to a conveyor belt.

Reclaim feeders can be fed with a dozer, excavator or belt conveyor.

Sizers

Komatsu also now offers both primary and secondary sizers.

Joy primary sizers feature pick technology developed for Joy feeder-breakers, shearers and continuous miners.

A sizer drives a pick into the mineral, which breaks the rock in tension, taking advantage of the fact that the tensile strength of most minerals is 10-15% of their compressive strength.

Joy sizer picks have been designed to minimise labour requirements, so no torch, welding or special tools are required to remove and replace picks.

Komatsu Mining Corporation now offers a complete range of feeder breakers, reclaim feeders and sizers – suitable for a wide range of mining, quarrying and processing applications.

Joy picks as standard have a tungsten carbide insert, with a chromium carbide overlay available as an option for abrasive applications.

Joy primary sizers can produce a product size of between 150-250 mm.

Our secondary sizers can be configured to output product sizes of -100 mm, -50 mm, -38 mm or -25 mm. Joy secondary sizers feature bolt-in wear castings, with weld on white iron or alloy teeth depending on application.

Sizer applications

Sizers are a good crusher choice for operations that have to handle sticky materials.

Primary sizers have cleaners which scrape the sticky material off the rolls, while secondary sizers have teeth that mesh together to displace material.

Sizers are also a good choice if fines generation is a concern.

Essentially, a sizer acts like a screen, letting undersize material pass through unaltered, but crushing the large lumps.

This allows sizers to achieve very high capacities in a compact package, making them particularly suitable for mobile applications.



Pictured: Komatsu breakers, designed to work with Komatsu's excavator range, are available for carriers from less than a tonne to more than 85 tonnes.



KOMATSU ANNOUNCES NEW RANGE OF HYDRAULIC ROCK BREAKERS

Komatsu has announced a new range of Komatsu-branded hydraulic breakers matched to fit its own excavator range and designed to work with machines from less than one tonne to over 85 tonnes.

The range of new Komatsu breakers, which have operating weights from 65 kg to 5589 kg, covers mini excavators (0.7-7.5 tonnes), medium sized excavators (7.5-20 tonnes) and large excavators (20-90 tonnes).

The Komatsu Heavy Range of breakers are available as both a two-speed option as well as a fully variable speed version. The fully variable speed version automatically change their frequency to different conditions or material hardness therefore greatly increasing productivity across varying applications.

According to Charles Wheeldon, Komatsu's General Manager, Construction & Utility Marketing, the company's new breaker range brings industry-leading rock breaking technology to its entire construction excavator range.

"For many years, Komatsu has been recognised as offering the industry's best range of excavators, in terms of performance, productivity, reliability, durability and cost of ownership," he said.

"Now we are delighted to be able to offer a matched line of breakers, designed to work with our own excavator line, and backed by the full Komatsu support network across Australia, New Zealand and New Caledonia."

Charles said the new Komatsu breaker range offered several unique advantages, including the variable frequency and energy system on selected models for higher productivity and lower maintenance costs.

"Our design engineers understand that percussion efficiency is the key – not heavier breaker weight, which simply results in increased carrier fuel consumption.

"Komatsu breakers offer the industry's highest percussion efficiency, with their lower input power requirements resulting in better fuel efficiency."

"Our variable speed breaker design provides greater hydraulic efficiency, further enhanced with our energy recovery and regulation systems.

"Komatsu breakers offer the industry's highest percussion efficiency, with their lower input power requirements resulting in better fuel efficiency.

"And higher output power means greater productivity in fractured and semi-fractured rock," he said.

"As well, all Komatsu breakers incorporate a back pressure-tolerant design, blank firing protection, over-flow protection and a fully enclosed nitrogen filled accumulator.

"Combined with the low operating costs benefits of our excavator range, this means a Komatsu combined excavator/breaker package offers major benefits, including better productivity and performance, reduced downtime, lower cost per hour, and the industry's leading service and support network," he said.

Komatsu breakers are available with a range of tools for different applications, including chisel,moil point, pyramid point and blunt tool.



Pictured: Komatsu Undercarriage at work. - Komatsu conducts regular FREE assessments as part of its Genuine Undercarriage support.

GENUINE KOMATSU UNDERCARRIAGES IN FOR THE LONG HAUL

Komatsu Australia is discussing with its Customers several reasons why they should choose and stick with Komatsu's Genuine Undercarriage – foremost being component wear-life and reduction in undercarriage overall cost-per-hour.

Undercarriage National Business Manager, Scott Newman, said Komatsu Australia and Komatsu globally continuously works in partnership with its Customers in comparing life cycle data for Genuine Undercarriage. The results back up the theory behind why Genuine Undercarriage components last longer.

"Customers can find a cheaper up-front alternative appealing, but that doesn't always equate to value over the machine's service life," said Scott. "If your machine has a failure and can't operate or doesn't achieve the desired life, that initial saving can erode and lead to a higher operating cost.

"We want the best outcomes for our Customers, so we want to be active in helping them understand the true cost whilst working efficiently. Together we gather data to understand the differences and how it impacts the Customer. Ultimately, we want our Customers to make a wise decision and maximise their profits. That won't happen if you lose productivity and uptime due to undercarriage failure or premature change-outs due to poor wear life. This is the risk with the cheaper alternatives."

Komatsu conducts regular free detailed inspections, measuring bush thickness, link, and shoe height and roller shell thickness as part of its Genuine Undercarriage support. "Customers can rely on us to monitor their undercarriage condition and be proactive in avoiding any potential problems ahead of time," said Scott. "That way, downtime is minimised over the wear life.

"When we inspect the machine, we keep that data

in our Undercarriage Management System (UMS) for overview reporting. It provides a precise picture of the state of your undercarriage and removes the guesswork from your machinery investment.

"We can work with our Customers to plan future change-outs and conduct cost-per-hour analysis. The inspections give us visibility for what can be done to prevent any unplanned downtime through premature failures.

Scott said Genuine Komatsu undercarriages offer a greater hardness depth than the cheaper aftermarket alternatives. "Greater hardness depth in the Komatsu's quality manufactured undercarriage components equals longer component life. Using Genuine means less downtime, parts purchases and labour costs through less undercarriage replacements over the machine's lifecycle, reducing the overall operating cost of the machine."

Scott said that whilst Komatsu has confidence that its Genuine Undercarriage is the best option for our Customers "We understand that there are situations where our Customers might require the support of options in reducing their operating costs. This could be the machine being at the end of its life, working in a very light-duty application or unknown future prospects for the machine."

Komatsu is now offering a lower-cost option for select construction excavators: General Construction (GC) tracks are designed to be engaged in lower-impact applications while retaining wear life, the reassurance of buying quality Genuine Undercarriage and the back up and support of an OEM.

Whilst undercarriage wear can't be prevented – it's something we all must accept – Scott had plenty of valuable advice on managing undercarriage wear. "The key to reducing your undercarriage costs is monitoring the wear and overall maintenance of the undercarriage" said Scott.

Komatsu's top tips for increasing undercarriage life:

"We want the best outcomes for our Customers, so we want to be active in helping them understand the true cost whilst working efficiently."

Regular inspections

Get in the habit of carrying out regular machine inspections – including the track. You are looking for things like oil leaks or unusual wear. We recommend regular inspections on excavators and dozers, inspection intervals are dependent on wear rates and site conditions. High abrasion would call for much shorter inspection intervals.

Komatsu's undercarriage inspection service – available free of charge through Komatsu Australia's network of Customer support sales representatives* – involves electronic and ultrasonic measurement of the undercarriage components including bush and roller shell thickness, plus link and shoe height.

This indicates the percentage of life of key undercarriage components and allows for component forecasting and on-site planning for the ordering of replacement parts in time for scheduled down-time.

When the track frames become packed with soil or material it can speed up the undercarriage wear on components. Regular cleaning can promote a longer life and reduction of premature wear.

Incorrect track tension can also affect the underfringe life dramatically. Too loose or too tight can lead to high wear, component breakage, hot joints, excessive noise or uneven wear. This is one of the most important contributing factors to premature wear.

Track can be installed backwards, if this happens bushes and sprockets can wear out faster. Also, on dozers the traction can decrease causing further issues.

One of the best ways to reduce track wear is to minimise operating in reverse; this increases wear because of the higher tension it puts on the track.

Varying the direction of turns spreads the wear, allowing you to get a full life from evenly worn components.

* Some conditions apply, based on customer location.



Pictured: Komatsu's Smart Solutions team in Australia operates out of our Rutherford centre in the NSW Hunter Valley.

SMART SOLUTIONS: KOMATSU'S GAME-CHANGING APPROACH TO MACHINE DATA ANALYTICS

Mick Hewitt, Komatsu's Technology Development Manager at its Rutherford centre in the NSW Hunter Valley, looks at the massive advances in monitoring and analytics that are about to be rolled out to Komatsu mining equipment customers across the board.

With Komatsu's acquisition of Joy Global two years ago, and the integration of both companies' mining product lines to form the new One Komatsu organisation, we have gained access to an industry-leading approach to using machine data for analytics and analysis.

Known as Smart Solutions, it continuously streams data from our machines; our ability to transmit and receive data more frequently, allows us to apply advanced analytics and trends analysis to Komatsu mining equipment.

Smart Solutions has been available on the former Joy Global range of mining equipment for some years, and our team is now working on integrating Komatsu's "traditional" mining equipment product line (dump trucks, excavators and shovels, mining loaders, dozers, etc) into this offering.

This data is coming from a wide range of sources: the Modular Mining and MineWare suites of products; KOMTRAX Plus remote monitoring; and the on-board remote monitoring systems provided by components suppliers GE Mining and Cummins engines.

Through Smart Solutions, we are taking mining equipment and minesite performance, productivity and safety to the next level.

This includes leveraging our ability to receive a constant data flow off our machines, greatly enhancing the insights we are receiving from equipment on-site.

This powers our advanced data-based decision making processes that are essential to today's modern mining operation.

Then by using our "big data" capabilities, we can apply trends knowledge to the data we are capturing.

This means that rather than receiving alarms and alerts as an issue arises, we are getting predictive information – ensuring that we know about a failure or machine issue well in advance of it happening.

Our Smart Solutions teams are collaborating with mine management and onsite personnel to determine the best mix of equipment, services, training, technology, monitoring and data analytics options to create value for our customers.

In addition, each Smart Solutions offering is customised to an individual customer's specific needs and designed to deliver the lowest cost per metric tonne in alignment with their financial and operating goals.

The following FAQs outline just what Smart Solutions is, and how we are integrating Komatsu's existing ICT-based offerings into Smart Solutions.

What is Smart Solutions and what does it do?

Smart Solutions is a concept that was developed by Joy Global as an overarching philosophy that covers the use of machine data for analytics and analysis.

Smart Solutions can currently be applied to all Komatsu mining products that have come out of the Joy Global stable of products, although to varying degrees.

In Australia, Smart Solutions is widely used with P&H electric rope shovels and for P&H wheel loaders. It is also used for Joy underground mining equipment, both hard rock and soft rock.

Are Smart Solutions and KOMTRAX Plus "complementary" products, or is there considerable overlap?

As the product lines become integrated, KOMTRAX Plus would form a subset of Smart Solutions

Is there a program for these two products to be integrated into a single offering?

Yes, and this is taking place right now.

How would an integrated Smart Solutions/KOMTRAX Plus offering work?

KOMTRAX Plus data will feed into a database that will be accessible by a the analytics team, which has been tasked with developing algorithms that can detect machine issues.

What sort of advantages would it offer to customers of Komatsu's "traditional" mining products (dump trucks, mining excavators and shovels, large wheel loaders, mining dozers)?

Integrating KOMTRAX Plus into Smart Solutions will offer many advantages for customers and mine operators, right across the "four pillars" that we aim to deliver for all our machine owners:

1. HSE (Health Safety and Environment)
2. Reliability
3. Productivity
4. Owning and operating cost.

Would it apply to the entire Komatsu mining range: both Komatsu's Joy-derived products, plus its "traditional" mining products?

That's certainly the intention.

What is the time frame for such an integrated offering?

Initially we are aiming for this to be available from April/May 2019.

However, this will always be an evolving product, so it will go through many stages of development

Given these are globally offered products, how much of the work on integrating KOMTRAX Plus and Smart Solutions is being done in Australia, and how much is being done in other Komatsu facilities outside of Australia?

Komatsu's Milwaukee team has a philosophy of "democratisation of data", enabling the regions to operate independently and offer full solutions to their customers.

This means a lot is being done here in Australia, as well as at Komatsu Milwaukee (USA).

Komatsu Milwaukee is responsible for the management of all of the databases, while Komatsu Australia is assisting in ensuring all of the ancillary technologies and information are compatible and will work together.

This will deliver benefits not only to our customers here in Australia, but also throughout the world.

Will the technology used in Smart Solutions eventually also have applications in Komatsu's construction products?

Yes, there will be some overlap.

We are currently working on a completely new offering that will overlap both mining and construction.

Known as KPAR (KOMTRAX Plus Air Relay), it is completely Australian developed. Details of this will be made available in due course.



Glossary of offerings and terms

SMART SOLUTIONS

This is a term that was used before Komatsu purchased Joy Global, and encompasses the transfer of data from the machine to a server and then the analytics and analysis of that data.

KOMTRAX Plus

Is the "online" version of Komatsu's long-standing VHMS (Vehicle Health Measuring System) for mining equipment and refers to the technology that gathers data from the machine. KOMTRAX Plus data from mining equipment operating in Australia, New Zealand and New Caledonia is collected, monitored and analysed at Komatsu's INSITE Fleet Management Centre at the company's Australian headquarters in Fairfield, Sydney.

Modular Mining

Separate company, owned by Komatsu, offering a suite of products available to the mining industry. The most well-known of these include Dispatch, Minecare and Provision.

MineWare

Separate company, owned by Komatsu, that develops products for large mining excavation equipment (hydraulic excavators, draglines rope shovels, and wheel loaders), including payload management and mine compliance systems. MineWare products include Argus and Pegasus.

Cummins/GE

Both companies offer monitoring and data collection systems that have applications on Komatsu equipment; Cummins is the preferred supplier of engines for Komatsu mining class machines (both rebranded Komatsu models and Cummins models. GE supplies the electric-drive systems for Komatsu Electric Dump Trucks.

STOP PRESS

Komatsu Ltd has agreed to acquire Immersive Technologies, a Western Australia based mining workforce optimisation company. The acquisition planning is to close on July 1, 2019.

Immersive develops, manufactures and sells mining equipment simulators for training machine operators for surface and underground mines. The company also offers educational programs designed to enhance the safety and productivity of customers' site operations by using simulators and provides training solutions designed to promote operational optimisation by proposing recommendations.

This acquisition further contributes to improving mining customers' safety, productivity and to optimising their operations.



LATEST P&H SURFACE DRILL OFFERS SAFER OPERATION, AUTOMATION FEATURES

Komatsu has release the P&H 77XR surface mining drill rigs, the first of a new line of drills offering safer operation, higher productivity and increased maintainability, as well as semi-autonomous or fully autonomous capabilities.

Designed to work in a wide range of applications, from coal to hard rock mining, the 77XR has a bit loading of 77,000 lb (35,000 kg), and has been designed for maximum versatility, including the ability to carry out rotary tricone drilling or DTH percussive hammer drilling, in single or multi-pass operations.

According to Mark Petersen, Komatsu's National Product Manager - Mining, the new rig incorporates a number of features that are unique to Komatsu P&H drills, including a new auto bit-changing system and a new boxer-style mast with P&H's exclusive rack-and-pinion pulldown.

"Auto bit changing is a major step forward for surface mining rigs, and the 77XR is the first rig on the market to offer this. Quite a few manufacturers have tried to achieve this, and we are the first to come up with a solution," said Mark.

"It's a major safety and productivity advance, as it takes operators out of the line of fire, and it allows bit changes to be carried out within five minutes."



Pictured: Komatsu's P&H 77XR drill rig is designed to work across a range of applications, from coal to hard rock mining.

"Our new bit carousel system eliminates the need to change bits manually, speeding up the entire process and minimising the operator's handling of bits, reducing the risk of strain or injury.

"It's a major safety and productivity advance, as it takes operators out of the line of fire, and it allows bit changes to be carried out within five minutes.

"The 77XR's auto bit changing – in conjunction with other automated features available, including auto rod changing, high-precision GPS hole-to-hole navigation, auto drilling, auto levelling and auto mast raise – are key steps towards fully autonomous drill rig operation," he said.

"This makes a perfect fit with Komatsu's industry-leading commitment to autonomous and semi-automated operations across its haul trucks, dozers and excavators."

Mark said the new rig's rack-and-pinion pulldown has been a standard – and exclusive – feature on P&H drills for many years; the only difference to the rest of the P&H Drill product line is the introduction of the boxer style mast.

"The combination of the boxer-style mast and rack-and-pinion pulldown give significant advantages in productivity, reliability, bit-loading performance and maintainability.

"Our boxer-style masts have only four weld joints running the length of the mast compared with the multiple weld-points of conventional lattice-style masts, making it easier to identify any cracks or other issues, and simpler and quicker to repair.

"Again, that strongly aligns with Komatsu's commitment to ensuring our products have a high degree of maintainability, minimising downtime for service and repairs, and optimising availability and productivity."

He said P&H's proven rack-and-pinion carriage system delivers the same amount of retract force as pulldown force, to assist operators in the toughest conditions.

"Our optimised single rack design engages the pinion in tandem to improve reliability and maximise bit-loading performance."

Other improvements on the 77XR include a new and improved lightweight rotary head, allowing the operator to raise and lower the mast with the carriage in the top position and the complete drill string attached.

"This reduces non-productive pipe handling time and streamlines the process of trammings between patterns," said Mark.

"Our redesigned mast and carriage also enables effective single and multi-pass angled drilling."

To further add to drilling safety and efficiencies, the 77XR can be fitted with P&H's high-precision automation solution.

"Our auto navigation sensors create a three-dimensional grid that calculates size and distance for obstacle detection and collision mitigation," said Mark.

"Once over the hole location, the drill auto-initiates the drilling process and drills to the proper depth, the first time every time."

Combined with a HawkEye camera system, the drill control system is alerted to any objects or hazards in the drill's path and can take appropriate action.

"Our P&H drill automation system improves safety and removes variability, leading to increased utilisation and, ultimately, higher drill performance."

Mark said the innovations and advances on the new rig helped minimise non-drilling time, translating into up to 12% more drilling, reducing maintenance costs by as much as 10% and increasing productivity by up to 5%.

"With drilling and blasting at the heart of any surface mining process, the more quickly, precisely and efficiently a mine can execute its drill patterns, the more effective the resulting blasts.

"Our aim with the 77XR has been to better protect mine workers and equipment, while further increasing mine productivity," he said.

Brief specs of Komatsu's new P&H77XR:

Bit loading	Bit diameters	Maximum drill depth	Rotary head power	Engine, Cummins QST30
35,000 kg (77,000 lb)	200-270 mm	Single pass, 16.3 m/ Multi-pass, 85 m	58 kW; torque, 14,900 Nm@100rpm	Rated at 783 kW (6.3 kV electric option available)



Mitchell Kelly - MEM30205 removing water pump



Mariah Storch & Rohan Staal- MEM30205 Bottom End Overhaul



Troy Thomassen - MEM30305 Geometric development



James Mckay- MEM30205 Using Power Tools

KOMATSU TRAINING ACADEMY PARTNERS WITH THIESS TO DELIVER NATIONAL APPRENTICESHIP TRAINING

Komatsu Training Academy (KTA) was awarded a national apprenticeship training contract by leading mining services contractor Thies.

"We are offering three sets of qualifications, which have been customised, as part of our targeted training package specifically developed for Thies apprentices," said Janine Gurney, KTA's General Manager.

The three sets of qualifications being provided to Thies by KTA are AUR30316 Certificate III in Automotive Electrical Technology, MEM30205 Certificate III in Engineering, - Mechanical Trade, and MEM30305 Certificate III in Engineering, - Fabrication Trade.

"At KTA we focus on what is really needed by our clients," said Janine.

Examples include up-skilling for production improvements, improved fuel efficiency, reduced wear and tear, lower operating costs, better preventive maintenance, and greater safety.

"This partnership brings together two organisations passionate about delivering quality training and achieving quality outcomes.

"It's about working together to provide an excellent, solid foundation for Thies apprentices so they gain the necessary skills to develop a successful career within the resource sector," she said.

"Thies's commitment to developing the capability of its workforce, aligns with our vision to design and deliver training programs tailored to our clients' needs."

Janine said, "All too often today, training is merely focused on churning out numbers of trainees. At KTA, we recognise there is a major difference between a key technician who is merely competent, compared with one who is truly proficient at their job and these differences can translate into significant benefits to a company's bottom line".

KTA is a proud nationally registered training organisation that provides technical, operator and management courses for Komatsu customers, which since being established in 2016, has undergone significant growth.

It is headquartered at the Komatsu Technical Education Centre (KTEC) in Brisbane, which over the past few years has become the company's primary training centre for operators and technicians in Australia, New Zealand and New Caledonia.

This facility is one of the region's most advanced technical training facilities for mining, earthmoving and utility equipment.

In addition to Apprenticeships KTA also delivers a wide range of other nationally accredited training programs: from business management and leadership training, to Restricted electrical licencing, working at heights, first aid, through to technical and electrical training for fitters and operator training for reliability and production. KTA's programs are customised and can be delivered at a KTA facility or on-site to meet customers' specific needs.

"This partnership brings together two organisations passionate about delivering quality training and achieving quality outcomes."



Pictured Left: Alanna Dennien with her Queensland Exceptional Tradesperson/Technician/Operator Award, presented on International Women's Day in March. Pictured Above: Alanna in Komatsu's Gladstone workshop.

4TH YEAR APPRENTICE ALANNA DENNIEN WINS QUEENSLAND EXCEPTIONAL TRADESPERSON AWARD

Komatsu Australia is delighted to congratulate our fourth-year apprentice Alanna Dennien, who recently notched up an outstanding achievement.

Alanna was named winner of the 2019 Exceptional Tradesperson/Technician/Operator in Queensland Resources as part of the International Women's Day Breakfast and Resources Award ceremony in Brisbane on March 8.

This event was hosted by the Queensland Resources Council (QRC) and Women in Mining & Resources Queensland (WIMARQ), and was sponsored by BHP.

Alanna started with Komatsu in 2016, as an adult Diesel Technician Apprentice with Komatsu, having previously worked for the company as a parts interpreter/customer service representative at its Gladstone branch.

She is now in the final year of her apprenticeship, as well as in the final year of a Graduate Diploma in Asset and Maintenance Management.

Alanna was profiled in D2E two years ago, when she was accepted for a keenly contested eight-month mentoring program through WIMARQ, a placement that was funded and supported by Komatsu.

Alanna's latest award was announced at a breakfast event in Brisbane, attended by 1000 people, and live-streamed to mining and industry sites throughout Queensland.

Now as the winner of the state award, she will go on to the national WIMARQ awards in Sydney in September.

In winning this award, D2E asked Alanna about her aims, the challenges of working in this industry, her career aims and steps she was taking to help make the industry more inclusive for women. These are her responses.

Career aims

"Once I finish my apprenticeship, I'd like to stay on the tools for a bit and really get into the technical and diagnostics side of the business, so I can help support the equipment out in the field.

"I'll finish my graduate diploma this year, then I want to continue on to do my Masters in Asset and Maintenance Management."

Resilience

"I have to say, everyone's been very supportive of me doing what I'm doing.

"I'm 27 now, I was 24 when I started. But I really wanted to start doing this when I was 18; straight out of high school, I started applying for apprentices, but then kept having people talk me out of them, that it wasn't what I really wanted to do, that it was too greasy or dirty for a woman.

"Then I thought stuff it, I'm not going to let anyone talk me out of this. I had a lot of rejections, and it took me a long time to get here, but here I am.

"When people think I can't do something, I get great satisfaction out of showing people who don't think that a girl can do a trade, that girls can do an excellent job too.

"It's a good feeling to be able to prove to others – and yourself – that you can do this job."

Promoting inclusivity

"I'm really passionate about getting girls and women into this industry.

"I found my menteeship through WIMARQ incredibly valuable, and I applied to be a mentor this year, through QMEA (Queensland Minerals and Energy Academy), and just before the awards ceremony, I met for the first time the Grade 12 high school girl I'll be mentoring.

"As part of this, women already in the industry will be looking at how we can assist girls, talking to them about the industry, what it involves.

"It's something that's not really spoken about in schools, so the kids don't really know what the industry is all about.

"We need to get to these girls early, and start talking to them about the career opportunities."

"When people think I can't do something, I get great satisfaction out of showing people who don't think that a girl can do a trade, that girls can do an excellent job too."



Pictured: Rod Blair, Regional HSE Manager, Komatsu; Jan Foster-Hawkings, Operations Manager, Komatsu; Tim Branch, Manager, HME Engineering, Rio Tinto Iron Ore (RTIO); David Abbott, Mining Business Manager, Cummins; Hugh Carlisle, Principal, HME Engines, RTIO; Andy Hardy, Project Manager Engine module program, Komatsu; Dean Visaggio, Product Support - RTIO, Cummins

KOMATSU/ CUMMINS/ RIO - SUPPORT BEYOND BLUE

"Working together, the three partner companies in this project are also facilitating additional resource requirements for the economy of WA - which in turn is helping generate additional jobs, along with enhanced job security for those already involved with the engine rebuild and install project."

Komatsu and Cummins are celebrating the delivery of the 100th MCRS repower engine module to their partner Rio Tinto - a program that is delivering major savings in fuel efficiency, more engine horsepower and lower service costs - in a ceremony that will also see the handover of \$19,400 to mental health awareness organisation Beyond Blue.

The celebration and Beyond Blue cheque handover ceremony took place at 1pm on May 20 at Komatsu's Welshpool facility in Perth, where its mining equipment is prepared before transport to customers, and where parts and components are held and serviced.

Since mid 2017, Rio Tinto, Cummins and Komatsu have been working together on a new technology roadmap that will see Komatsu 830E and 930E haul trucks - including autonomous trucks - operating in the Pilbara region of north Western Australia, upgraded with the latest technology Cummins QSK60 MCRS Advantage Plus engines.

This new technology allows the engines to achieve higher horsepower with fewer turbochargers, while service life between repowers is predicted to be 36,000-40,000 hours, up from 28,000-36,000 hours, delivering lower life-cycle costs.

Rio Tinto Iron Ore general manager Asset Management and Engineering Services, Heath Harnden said "the productivity benefits delivered through this programme would not have been possible without the ongoing support of Komatsu and Cummins' technical and commercial teams."

According to Glenn Swift, Komatsu's GM Western Region, the project is a reflection of Komatsu's philosophy of advancing through technology and

continuous improvement the safety and operational efficiency of its product lines.

"It demonstrates how we aim to continually support our customers with their specific and ever-changing requirements.

"This highly successful project is testament to the approach and technical ability of key people from each company, working together initially to demonstrate their faith in the product capabilities - and which has been borne out by the results achieved so far," said Swift.

"Working together, the three partner companies in this project are also facilitating additional resource requirements for the economy of WA - which in turn is helping generate additional jobs, along with enhanced job security for those already involved with the engine rebuild and install project."

Dean Visaggio, Cummins Product Support Manager RTIO said his company's support for the Beyond Blue fundraising initiative reflected its concern for the communities it worked in.

"At Cummins we truly care about each other and the communities we work in, and we have a growing concern that anxiety and depression is on the increase, especially in our industry with FIFO workforces and remote regional communities," he said.

"We applaud the work that Beyond Blue has done in increasing the awareness of anxiety and depression, and in providing their services to assist those in need.

"We are very grateful for Beyond Blue's efforts, and in support of this charity Cummins has partnered together with Rio Tinto and Komatsu to assist with raising money for this great cause."

According to Andrew Hardy, Komatsu's Project Support Manager for Rio Tinto's engine module program, the delivery of the 100th repower module is

a significant milestone for a number of reasons.

"Apart from being the 100th MCRS module delivered, the date of the installation - May 27th - is exactly 560 days since we delivered the first MCRS module in November 2017," he said.

"And from the installation of the first MCRS engine module, Rio Tinto's dump trucks have been in service with this new engine configuration for more than 26,500 days cumulatively across the fleet, with the first truck being in service for 555 days as of May 27, 2019 - the day this 100th module is installed in the truck."

This year is also Cummins' 100th anniversary, and to mark that significant milestone, this engine has serial number 9800100.

Since the engine module program began, all three companies have been supporting and fundraising for mental health support service, Beyond Blue. To celebrate the arrival of each engine to site, Rio Tinto, Komatsu and Cummins hosted BBQs to raise money for Beyond Blue. Coincidentally, the engines being painted blue has supported the Beyond Blue fundraising efforts.

"The fundraising for Beyond Blue is an integral part of what Komatsu, Rio Tinto and Cummins are doing together with this module program, so we thought it was an ideal opportunity to celebrate and promote all the good things we are achieving together," Hardy said.

A cheque for \$19,400 was presented to Beyond Blue on May 20, as a result of all the funds raised.



Pictured: RMS Engineering & Construction staff with their Beyond Blue sponsored PC88MR-8 - which provides support and help to the community who suffer from depression, anxiety and mental health issues.

TOWNSVILLE'S BIG BLUE EXCAVATOR

Around Townsville they're calling it the Smurf – a big blue Komatsu excavator which has been painted to support a worthy cause - Beyond Blue.

Every hour the machine works, its owner, fourth generation construction company RMS Engineering and Construction, is donating \$2 to Beyond Blue.

Over a full year, that should amount to more than \$6,000.

"Beyond the money, the feeling of goodwill it provides to our own staff is substantial, and the visibility of Beyond Blue just might help the community," Glen Langfeldt, RMS Operations Manager (Australia) said.

Beyond Blue, based in Victoria and begun by former premier Jeff Kennett in 2000, has become the country's foremost non-profit organization addressing issues associated with depression, suicide, anxiety and other related mental disorders.

"Often construction guys work away from home for long periods and it's understandable they get a bit down in the dumps," Glen said.

"We thought we'd do something positive to show our support."

RMS operates a fleet of six Komatsu excavators from offices in Townsville and Rockhampton on projects as far flung as East Timor and Vanuatu.

"Recently we brought back three excavators from a Vanuatu project and when it came to freshening them up for work in Far North Queensland, we thought why not take the opportunity to make one of them very special," Glen said.

A PC88MR-8 with 4,500 hours was chosen to become the company's Beyond Blue 'ambassador.' "It was quite a job painting it – there was a lot of yellow to cover up," Glen said.

The result has been a spectacular success and 'The Smurf' is hard at work on its first highly visible job on the Bruce Highway, just north of Townsville in Bluewater.

RMS has created a link on its website rmscivil.net.au so that people influenced by the excavator can make contact with Beyond Blue.



"Often construction guys work away from home for long periods and it's understandable they get a bit down in the dumps, We thought we'd do something positive to show our support."

According to Beyond Blue, RMS's Komatsu is definitely a one-off.

"We've had people paint cranes and even trees – and for the trees we had to write a special protocol to make sure they weren't harmed," a spokesperson said.

"They all add up to creating a lot of awareness and for that we're truly grateful."

RMS Construction and Engineering now employs more than 50 people, and according to Glen Langfeldt, hired from his long-term career in the Construction Industry by company owner Richard McDonald, it is experiencing strong growth.

"We've had to put on 20 people in the last year and we've just taken delivery of another Komatsu excavator – a PC210LCi-10 – to keep up with demand in our government and private infrastructure projects."



Pictured: Ben Cooper with daughters Ellie (left) and Kendra. Ellie is holding one of the cards she made for her dad.



Pictured: South Coast Civil's PC300LC-8 excavator at work. BELOW: one of Ellie Cooper's cards to her dad Ben.



KEY RELATIONSHIPS KEEP BEN LOYAL TO KOMATSU

"Our clients' operators like the machines and find them comfortable and easy to operate, and we get good wear out of them, especially the excavator track gear. Not long ago, we got over 10,000 hours out of a set of tracks, which is great."

A great relationship with key account people has ensured Western Australian plant hire specialist Ben Cooper has remained a loyal Komatsu customer since he bought his first – a used PC120 – in 2007.

Through the company owned by Ben and his wife Stacey Cooper, South Coast Civil, machines are on hire to tier one and two contractors and leading miners in the north-west and south-west of WA.

He finds Komatsu machines are preferred by his clients due to such factors as reliability, durability, performance, the KOMTRAX remote monitoring system, and their comfort and ease of operation.

His machines work on various construction, infrastructure and mining projects, and are hired on a wet hire basis in the south-west, and on dry hire in the north-west.

Actually, Ben's first experience with Komatsu was not 100% positive – due to no fault at all of the machine.

"I took delivery of the machine in January 2007; it was a used machine I'd bought through Komatsu in Queensland. It was literally 500 m from the jobsite, when it was hit by a train!

"It was completely destroyed," he said. "But I rang them up, told them the story, and they quickly sent me a replacement one.

"That's what I like about them: that attitude of quickly dealing with any issues. And that's what has kept me buying more," he said.

Over the past 12 years, Ben has developed a close relationship with Curtis Bateman, Komatsu's Sales Account Manager for South Western Australia, and



Pictured: Ben Cooper (left) with Komatsu's Curtis Batemen at the handover of his recently delivered PC350LC-8MO excavator.

John Meakin, the Komatsu Finance representative in the state.

"During that time, I've bought 15 machines through Komatsu, 12 of them through Curtis.

"He's very easy to deal with, he understands our business, and his attitude is more about helping us, rather than just taking our money," said Ben.

"Aside from a bit of wear and tear, we really don't have any serious breakdown issues – and if there is an issue, it's easy to get it sorted.

"Our clients' operators like the machines and find them comfortable and easy to operate, and we get good wear out of them, especially the excavator track gear. Not long ago, we got over 10,000 hours out of a set of tracks, which is great.

"If we have a problem, there's a good chain of command; if Curtis can't resolve an issue, he sends it up to his boss, and it's sorted out. We never get stuffed around, or left in the dark," he said.

It's much the same situation with Komatsu Finance.

"Komatsu Finance is probably one of the main reasons why I buy Komatsu," said Ben.

"I used to use my own bank, but now pretty much all our machines are through Komatsu Finance. John Meakin gets me very good rates, he's very flexible –

and that means I stay with them."

His current fleet includes two Komatsu PC300LC-8 excavators – both fitted with Topcon GPS indicate systems, a WA250PZ-6 tool carrier and a PC18MR-3 mini excavator.

Ben's latest machine is a PC350LC-8MO delivered in late 2018 for use in construction of a lithium mine in the northwest of the state.

"This machine is there on a 12 month contract," he said. "At the moment, it's still in construction mode, and the excavator's at work building a tailings dam."

As with his other excavators, it's also fitted with a Topcon GPS-based indicate system, and according to Ben, the customer is "over the moon" with the machine.

"It's performing very well; having the Topcon system on it means it's compatible with everything they are doing: trimming and trenching to their design specs, as well as loading trucks.

"It's just come up to 1000 hours, and it's been good on fuel, as well as very smooth to operate."

Ben's client at the mine – itself a major Komatsu fleet owner – looks after all the servicing and maintenance on the machine.

"All their fitters know the Komatsu products, so they

are happy to work on them.

"And because they understand the KOMTRAX system on the machine, I give them access to my KOMTRAX data, so they can sort out any issues, or diagnose any problems.

"We do this with a couple of other clients as well, and it really streamlines things. Often they can resolve any problems without even having to ring me – and they'll just call me if there's a major issue."

There's also a lovely family side to Ben's business; he and Stacey have two daughters, Kendra, 10 and Ellie, 8. Now Ellie is right into Komatsu and the machines that work for her family, so much so that she likes to make up cards for her father, featuring Komatsu machines and company news, along with poems she writes herself.

"I make up the cards for dad's lunchbox when he goes off to work," said Ellie. "I'll write little poems, and Kendra helps me a bit with the wording. I just really like the looks of the Komatsu machines, and how they work."

HOW EMBEDDED RESOURCES PROGRAM HAS ADDED VALUE FOR MAJOR KOMATSU MINING CUSTOMER

Over the past four years, Komatsu's mining operations have pioneered a concept known as "Embedded Resources", under which Komatsu – as an OEM – works closely on site with major clients to achieve step changes in machine reliability, productivity and safety.

Under an Embedded Resources (ER) program, Komatsu and client sites share resources to achieve these major improvements, generating win/win outcomes for both parties.

Highly skilled teams of two Komatsu "Principal Advisors" are inserted into a customer's organisation, reporting to managers from both the customer and Komatsu.

The two advisors – a mining production/planning-oriented individual and a maintenance-centric person – are treated like customer employees, with office space, laptops, and full access to internal customer data (from finance to production).

Komatsu's first ER program began in 2015, working with a major miner that operated mines throughout Australia's east coast.

The team was initially assigned to four surface coal mines across NSW and Queensland.

At that time the pilot program was seen as a major step forward in strategic partnerships by both Komatsu and its mining customer, with neither group exactly sure what the outcomes would be.

Over the next three and a half years, Komatsu's ER team completed projects in safety, productivity (both machine and operator), reliability and technology – demonstrating the successful partnership approach to both the customer and Komatsu internally.

Since that time, the program has undergone an expansion that continues today.

ER teams are now assisting with improvement programs at 12 operating mines, in both coal and iron ore, across Queensland, NSW, and Western Australia.

These teams are part of Komatsu's broader Applications Engineering and Customer Value group, which is led by Kris Richardson, National Manager – Customer Value, under the Mining Technology and CI division.

Kris was one of the first ER people into this program, and he found the experience quite an eye-opener.

"Having previously been Service Manager for Queensland, and National Projects Manager, I thought we had pretty good access to customers and knew their internal workings.



Pictured: Komatsu's "Embedded Resources" concept has delivered significant benefits to major mining customers in sites across Australia.





“As a result of Komatsu’s ER program, we’re now viewed as an essential, trusted partner to these groups”

“But now, having been an ER for the best part of the past three and a half years, I’ve realised there are so many more levels and groups within our customers that we rarely interact with: mine planning, procurement, productivity teams, and others,” said Kris.

“Many of these are at regional and corporate levels which are traditionally closed off to OEMs.

“It’s in these groups where a large portion of the decisions that affect our machines are made, with the strategies then pushed back to the site level.

“As a result of Komatsu’s ER program, we’re now viewed as an essential, trusted partner to these groups,” he said.

Scott Hutchins, Komatsu’s Manager, Embedded Resources, agrees, seeing major additional advantages for the company.

“The information, relationship strengthening, and resulting opportunities from being intertwined with a customer to such an extent is providing Komatsu with a significant competitive differentiator,” he said.

“By becoming a trusted advisor, we get to work on improving the overall performance of the entire mining system with the customer, rather than just focusing on a single machine.

“This adds significant value to the customer, plus it is highly rewarding to see Komatsu products achieve their full potential, further helping strengthen our brand,” said Scott.

ER teams also transcend business lines across the entire Komatsu offering, regularly working in with Komatsu-owned mining solutions such as Modular Mining and Mineware.

“This results in further sharing of data and integration-related projects – strengthening the One Komatsu approach,” he said.

Komatsu’s ER program in the customer’s East Coast coal mines ended in late 2018, with the sale of its coal assets.

However, the program is now being replicated in the same customer’s iron ore operations in Western Australia.

Its success on front has also attracted interest from other mining customers.

Additional customers in NSW and Queensland are now in the process of negotiating deployments, giving our ER team the potential to grow even further during 2019.



Pictured: One of the new range of Precision Plumbing excavators, the PC220 at one of their work sites.

PARTNERSHIP IS KEY TO SUCCESS

Mining infrastructure plumbing expert Mark Sheehan knows a lot about partnership. When he was 24 and busting to have a go on his own after nine years working as a commercial plumber in Perth, it was his then girlfriend Emily, who suggested they do it together.

When he'd proved himself on the Ravensthorpe Nickel Mine project, working long hours digging ditches, it was the site's owner BHP Billiton that backed he and wife Emily, in the purchase of their first mini excavator.

And this year they traded the last of their "other makes" machines to create a Komatsu-only fleet of seven excavators, wheel loaders and skidsteers, and secure the partnership they've created with their equipment supplier.

Although business is still young, they've put together a team of more than 40 permanent employees, treating each of them as family.

"Partnership is at the heart of everything we do, Mark, said from his Perth office.

"I spend 10 days in every fourteen in the Pilbara because my clients want to know that I'm on the job, looking after their best interests.

"It's the same with Emily. She was in the office the day before Tom was born and she checked herself out of hospital three days later to make sure she was back in direct contact."

If they sound driven, it's because they are.

Every move this couple makes is calculated to bring success to themselves and their business partners.

Late last year they won their biggest ever contract – providing underground plumbing and conduit support

to publicly listed Decmil in building a 2,200-room village for BHP Billiton's mighty new South Flank iron ore mine, 130 km from Mt Newman, due to open in 2021.

It meant heavy investment. They now own three Komatsu PC220 excavators, two WA250 wheel loaders and specialist PC88MR-8 and PC55MR-5 machines with purpose-built teeth and cutting edges for their specific tasks.

"It's a full partnership," Mark said. "I finance through Komatsu because the rates are really good, and I service with Komatsu because their base at Newman is only 90 minutes away, and they are always available.

"I buy new because the finance is so good that combined with service, it works out more economical than buying used."

Mark is concerned that he may sound too much of a fan but from his perspective, the partnership with his all-important supplier is the cornerstone of his business.

"I recently traded the last of my non-Komatsu machines in Perth and they delivered my new digger to Rio Tinto's Arun project in Weipa, saving me heaps in transport costs," he said.

"The 2000 hours of free service I receive on every new machine is a massive boost to my profit.

Mark's partnership with Komatsu's Newman depot has resulted in the consumable replacement parts he needs being kept in stock and regularly replenished, keeping his down time to a minimum.

"We work as a team," Mark said. "Every month a Komatsu Product Support Rep in Perth calls by to make sure everything is working well, and to check if there's any change to our plan."

Komtrax, Komatsu's GPS remote tracking service,

is a huge boon. "Even when I'm in Perth I'm able to monitor the work load of each machine to be able to plan according to future needs."

The resurgence in Western Australian mining – hailed as the second boom – is being treated with a level of maturity born out of experience of the first.

Preparation for FIFO workers is far more considered, according to Mark, with greater thought being given to on-site facilities like in-room communications, squash courts, even golf driving ranges, to provide work-life balance.

His company is directly involved in all of those preparations and, modestly, he concedes Precision Plumbing is now one of the larger specialist suppliers in the region.

"A lot has been put about concerning the dangers of FIFO and how it can react badly on family relationships and even mental health," he said.

"Emily and I have always seen it another way.

"It's what you do to achieve something, and it's brought us closer together – a partnership."

"I finance through Komatsu because the rates are really good, and I service with Komatsu because their base at Newman is only 90 minutes away, and they are always available."





Pictured: Benedict's new D475A-5E0 hard at work.



Pictured: Benedict Industries' Geoff Johnston (left) and Rob Loiterton with the new Komatsu D475A.



Pictured: The new Komatsu D475A at one of the work sites.



Pictured: The new Komatsu D475A at work

BIGGER IS MORE EFFICIENT FOR QUARRY

One of Australia's largest and most innovative quarry operators has substantially increased its productivity by buying a bigger bulldozer.

Benedict Industries replaced its Komatsu D375A-6 bulldozer at 15,000 hours with a new D475A-5E0 expecting an increase in operational costs to match its increased work load.

Instead, the 40 percent increase in productivity more than offsets operational costs, which are less than expected.

"When we initially discussed the purchasing of the D475, we budgeted on a fuel burn of about 110 litres per hour," Benedict's Operations Manager Brett Jarvis said. "To date, the machine has been averaging 80 litres per hour."

According to Brett, the new machine has achieved an unexpected additional benefit. "The D475 weighs about 40 tones more than the previous Komatsu bulldozer, so the amount of sandstone oversize we are producing is a lot less," he said.

Benedict is one of Sydney's largest quarry and recycling companies. It Operates the new Komatsu D475 at its 75-hectare Mittagong site where processed sandstone is washed into concrete sand for the fast-growing Sydney and Illawarra Construction markets.

The D475 is one of twenty-five Komatsu heavy machines operated by Benedict in a total fleet of more than 60.

"It's all about relationships, Brett said. In a company in which a significant number of its 200 employees are long termers, certainly with more than 20 years' service, relationships matter.

"We rely on the strength of our commercial partnerships to make our business more efficient." According to Brett, the new Komatsu D475 was configured and commissioned by Komatsu's team, led by Paul Chenery, NSW Major Account Manager.

"Our needs are very specific and because of Paul's close relationship with us, Paul was able to provide exactly the combination of machine and attachments we required, especially as we are now quarrying harder sandstone," he said.

Purpose built solutions, combined with specific Komatsu on-site operator training, have been instrumental in providing gains in efficiency.

KOMTRAX, Komatsu's complimentary remote monitoring service, used almost universally by Benedict across its Komatsu fleet, has been extremely useful in gauging machine utilisation and achieving productivity gains.

"I've been able to mentor our equipment operators on the importance of selecting the right work mode to reduce idle times & fuel burn by simply monitoring KOMTRAX, Brett said. "It comes as surprise to some of our operators that I can monitor the performance of the machines without being on site."

In the tough business of quarry and recycling, Benedict is gaining a strong reputation for innovation at all levels – and for its focus on community and environmental issues.

It has partnered with developer Mirvac, to redevelop its Moorebank quarry into a Marina, Residential & Commercial center to the benefit of local communities.

"It comes as surprise to some of our operators that I can monitor the performance of the machines without being on site."

Recognizing the increasing community need for recycling, it has put on a fleet of free-to-hire covered box trailers, so that people can more easily transport their waste to recycling facilities.

And in conjunction with a Symbio Wildlife Park, Benedict has planted in excess of 1000 Eucalypt trees at the Menangle & Sandy

Point quarry sites, which will be used as feedstock for the Koalas at the Wildlife Park. Another 1000 trees are yet to be planted.

"Urban expansion will place increasing demand on our services and one of our major goals is to identify and secure new sites in strategic areas," Brett said.

In 2019, Benedict is to open two new recycling sites at Smeaton Grange, and Girraween, each strategically placed to meet growing community requirements.

"Where required, some of our plants are now working double shifts, up to 18 hours a day," he said.

"The demand on machine reliability has never been greater."



Pictured: PHS Earthworks owners, husband and wife team Phil and Holly Sharp and Phil Lister (centre) Komatsu Sales Account Manager NSW with one of PHS Earthworks PC138.



Pictured: Komatsu's PC138 excavator working on site

YOUNG MUM RESUMES WORK AS KOMATSU EXCAVATOR OPERATOR

Holly Sharpe is returning to work at the controls of her earthmoving business' excavators, after taking time out to have two children.

Owned and run with husband, Phil Sharpe, PHS Earthworks is a Lake Macquarie, New South Wales-based company performing all aspects of earthmoving including civil construction, subdivision and mine work.

The fledgling company was started only three years ago but, after partnering with Komatsu Australia for its excavator fleet, is growing steadily and expanding its ser-vices beyond its base into the Central Coast, Newcastle and Hunter Valley areas.

The couple bought a second-hand truck and three-tonne excavator and set to work drumming up business.

"I had used Komatsu excavators in the past and was very happy with their performance," said Phil. "As soon as I could afford a bigger machine better-suited to the size of the jobs we were taking on, I got in touch with Komatsu.

"I did get quotes from other brands and Komatsu wasn't the cheapest, but they have a really good name for performance and reliability in the industry and I had enjoyed my experiences operating their machines.

"I'm a big believer that you get what you pay for. I try to buy the best I can afford. That's what ended up happening about 12 months ago with the PC45MR-3 excavator, which we optioned with a tilting hitch and rubber tracks."

With business picking up according to the capabilities of PHS Earthworks' growing Komatsu fleet, they started employing operators and Holly was keen to climb back into the cabin.

"With our business getting bigger it made sense for Holly to come back to work part time after the birth of our second child," said Phil. "It can be hard to find good operators who are also good people to be around and, naturally, she has the business' best interests at heart because it's her business, too."

Holly pointed out that being female is no barrier to being an excellent operator. "At the end of the day, I am just operating a machine that requires your head and hands and ,to many peoples'; surprise, yes: women can do so just as well as men!

"It's about time we start getting more women involved and support each other in traditionally male dominant environments because there is no reason why women can't do it. I've always said: 'If someone else can do it, then so can I It just comes down to practice.

"I am proud of the fact that as a young mum I can work alongside of my husband to operate and run a business in this industry."

And how does she find the Komatsu excavators, as opposed to other heavy equipment she's operated in the past? "I love operating them. They're beautiful machines. The power is good and the controls are smooth. They're classy compared to some other brands. You can feel the quality in the cabin."

"I am proud of the fact that as a young mum I can work alongside of my husband to operate and run a business in this industry."

THIRD-GENERATION QUARRY BUSINESS AT THE CUTTING EDGE WITH KOMATSU

A Victorian limestone quarry business has put Komatsu at the heart of its successful operations, with its latest addition being a WA380-6 Wheel Loader.

Menheere Bros has been operating the Ocean Grove quarry – the last remaining on the Bellarine Peninsula – for nearly 40 years and director Mark Menheere said the family-run business has relied on Komatsu loaders across generations.

“My father, Lofty, started the business nearly 60 years ago. He ran it when I was a boy and I had my go at it as managing director for 30-odd years before stepping down,” said Mark. “Now my eldest boy, Matt, is running the show at our quarry and my other son, Ryan, runs the earthmoving side of things.

“Dad is a Dutch immigrant who was in the army and also a truck driver. He decided he wanted to come and have a go in Australia and started his business.

“I can remember in the early days he had a couple of single-axle trucks which would be five or six cubic yards by the old imperial measurement. He didn’t have his own loader then and would sometimes have to load his truck by hand with a shovel, doing so two or three times a day. Now he comes down to the quarry and sees the latest Komatsu WA380-6 Wheel Loader in action, which goes to show much things have changed just in his lifetime.”

Indeed, the business has gone from shovel, to state-of-the-art.

The manner in which Menheere Bros adopted machinery to work more productively started with Lofty Menheere and continues to this day. “His first loader was a Fordson and was cable-operated, no hydraulics,” says Mark. “That was a big thing for the business. Then he bought a Hough loader – Hough later being acquired by Komatsu – before switching to Komatsu proper about 30 years ago with his first WA250 wheel loader. We put 13,000 hours on that before selling it. Considering how long we’d had it and the amount of work it had done, we got a really good price for it. That’s one of the reasons we’ve stuck with Komatsu loaders, ever since.”

Another key reason is reliability, which has been proven across generations Menheeres. “We’ve had a great run with our W380 loaders,” Mark says. “We bought one which now has about 14,500 hours on it and remains in our fleet as a back-up machine to the new one we bought recently.

“They have been really reliable, which is a huge factor. If you’re in the quarry and you can’t load out because of a break-down or fault, you’re in real trouble.”

Mark Menheere said he recalls any such occasions more readily than when his equipment has saved the day. “You don’t so much remember the times when things have gone right as much as when they go wrong. If you had to recall sometimes that a machine has let you down, well, you do remember those. Luckily, with our Komatsu loaders, 99 percent of the time they just start up and away you go. We’ve actually come to take that for granted.”

When it came time for a new wheel loader, Mark’s son, Matt Menheere, who has taken the business’ reins as director, knew exactly what he wanted. “I was confident in another WA380-6 Wheel Loader because we’d had such a good run with the previous one,” said Matt Menheere. “Nothing much went wrong with it, at all, for a good 12 to 13 years – I think there was a little solenoid problem that Komatsu got right to the bottom of and repaired straight away – so there was no need to change.

With Menheere Bros’ Komatsu loyalty firmly entrenched, could Matt envisage changing brands? “No, we were happy with our old ones, we’re happy with our latest one and we expect to be happy when rolling over our Komatsu loaders in the future.

“We keep an eye on the market and do some research, but we don’t see value in going to cheaper brands. A reliable machine can save you a lot of money. Conversely, you don’t want to be repairing expensive machinery and facing production loss. It’s the old adage: “The poor man pays twice” – if you buy a cheap machine that breaks down it very quickly becomes an expensive one.”

“They have been really reliable, which is a huge factor. If you’re in the quarry and you can’t load out because of a break-down or fault, you’re in real trouble.”



Pictured: Menheere Bros, a 3rd generation quarry business, backed by state-of-the-art Komatsu machines including the WA380-6.



Pictured: Hawe Earthmoving's Komatsu PC270-8 excavator, fitted with a crusher bucket.

HOW MICK HAWE TAKES ADVANTAGE OF KOMATSU INNOVATION – & KEEPS A LID ON COSTS

Hawe Earthmoving, based in Queensland's Wide Bay region around Bundaberg, prides itself on staying on top of the latest technological developments to best serve its clients, while also staying focused on keeping tight control of its costs – and minimising its environmental impacts.

It recently purchased a Komatsu HB215LC-1 Hybrid excavator – which is giving fuel savings of up to 5 litres/hour – which owner Mick Hawe bought as a low-hour machine from Komatsu in 2014.

In purchasing the Hybrid as a low-houred machine, Mick took advantage of the opportunity to make a significant saving compared with buying a brand-new machine, while maintaining the benefits of Komatsu's service and support capabilities.

"You don't have to be a big company owning lots of gear like a Hybrid to justify the savings; a small contractor like us can do the same and save a lot of money in fuel and running costs – and being able to save more by purchasing a low-hour used machine was an added bonus," said Mick.

Hawe Earthmoving was established by Mick's father Pat Hawe in 1968; after going to university and time with other organisations, Mick returned to the company in 1996, then he and his wife Victoria took over in 2007.

Operating in a 150 km radius around Bundaberg, the company carries out a wide range of civil contracting and related works.

Included in their fleet are some unusual Komatsu machines, including a D57S-1 crawler loader dating from 1985, a PW170 wheeled excavator, and a GD355 specially imported grader – at only around 90 hp and with a 10 foot blade, it's ideal for carparks and smaller infrastructure works.

Other Komatsu equipment includes a PC270-8 and PC88MR-8 excavator, two HM300-2 articulated dump trucks and two GD655-5 graders.

Mick and Victoria pride themselves on running a family-oriented operation; of their approximately 28 employees, about 25 are full-time, and include a number of father-and-son teams who also worked with Mick's father Pat.

Another point of pride is a commitment to maintaining an innovative edge, reflected in purchases such as the Hybrid, the wheeled excavator and the "mini" grader.

"We've always prided ourselves on being innovative," Mick said.

"We were one of the first to introduce lasers in the region, back in the 1980s, and we've gone on from there

to be the first to have a Hybrid, along with the wheeled excavator.

"We look to offer innovative equipment as part of our ongoing efforts to best-serve our clients," he said.

"We are also always looking for a green edge, which is why we bought the Hybrid, when I saw it at BOOTS ON in 2014.

"We do quite a lot of dump sites and refuse facility work here in Bundaberg for the local council, and they love this machine, particularly as it has that green edge," said Mick.

"Typically the Hybrid burns 2 litres an hour less than a conventional machine of the same size, but it can be up to 5 litres an hour less. In the four years we've had it we've saved a lot of fuel and CO2 emissions.

"Recently it turned over 5000 hours of operations, and in that time, our KOMTRAX records show we've saved around 10,000 litres of fossil fuel and saved around 26 tonnes of CO2 emissions."

A key business philosophy for Mick and Victoria is to actively chase the benefits of new technology.

"What we did 20 years ago doesn't work now, because times have changed," he said.

"You need to embrace new technology; you need better and better fuel efficiency, you need a better class of machines, you need to look at your service and maintenance costs, your fuel burn costs. And today that's even more important than in the past."

For that reason, he's a huge fan of KOMTRAX, Komatsu's remote monitoring system.



Pictured: Mick Hawe (centre) and the Komatsu HB215LC-1 Hybrid excavator he purchased after BOOTS ON in 2014, with Jason Peters, Komatsu's Northern Region Used Equipment Business Development Manager (left) and Paul Murray, Komatsu's Brisbane-based Key Account Manager. Since he's had the Hybrid, Mick Hawe estimates he has saved around 10,000 litres of fossil fuel and around 26 tonnes of CO2 emissions.

"Something like KOMTRAX helps us a lot with our service and maintenance management; you can glean a lot from those types of services available these days," said Mick.

"KOMTRAX is brilliant, it's great for data handling, and makes it much easier for charging the machine out, as you have a great handle on your fuel burn."

Mick and Victoria Hawe are now looking to further their investment in the latest Komatsu technology, with the likely purchase of an iMC (Intelligent Machine Control) excavator.

"We've been Topcon users for a long time, and we are now talking to Komatsu Used Equipment about buying a low-hour iMC excavator that's come out of their rental fleet.

"That system is very attractive to us, because we have the knowledge and experience with machine control in how to make it work, confidence in Komatsu's design capabilities, and knowing that what you see on the screen and what you get on the ground will be in line with the design specs."

Mick said the company typically purchases around a 50/50 mix of new and used equipment.

"We work closely with Komatsu's used equipment team. If we're looking for something, we'll have a talk to them, and within a few days they'll usually come back to us with a machine that matches our requirements."



Pictured: Hawe Earthmoving bought the first wheeled excavator – a Komatsu PW170 – in the Wide Bay region; another example of the company's commitment to innovation and forward thinking.

"KOMTRAX is brilliant, it's great for data handling, and makes it much easier for charging the machine out, as you have a great handle on your fuel burn."



Pictured: Hawe Earthmoving's PC270-8 excavator loading one of the company's two Komatsu HM300-2 articulated dump trucks.



Pictured: Komatsu Graduates from the Engineers Without Borders run the STEM workshop at Orange Public School in Western NSW.

KOMATSU EMPLOYEES LIVE THEIR DREAMS



**engineers
without borders
australia**



**Running for
Premature Babies**

Relationships Australia.



LITEHAUS INTERNATIONAL



Komatsu has embarked on the second year of its unique employee and community enrichment program called Live Your Dream – an opportunity for all its employees to contribute to society.

Worthy projects put forward by Komatsu’s 3,400 employees in Australia, New Zealand and across the region have each been supported by a \$10,000 grant from the company.

Just as importantly, Komatsu and its family of employees have thrown their weight behind the Live Your Dream activities.

The result in the first year was an outpouring of community assistance and fund raising. One of the projects alone – an exceptionally grueling 4,000km solo crossing of the continent by bicycle - raised more than \$25,000 for an organization caring for the children of serving Australian military.

The first Live Your Dream program was so successful in 2018, that Komatsu has backed it for the next four years as an important part of celebrating its 100 years in business in 2021.

“There could be no better way of celebrating that milestone than empowering our staff to take part in projects of corporate social responsibility,” Komatsu National Marketing Manager, Wafaa Ghali said.

“A program that started out as a one-off has now become a five-year commitment.”

LIVE YOUR DREAM



This year's intake of Live Your Dream inductees proposed a wide range of social programs, each worthy in their own right.

Komatsu is calling them 'the sensational six'.

1. Matthew Presland, an accountant with Komatsu's Moss Vale branch supported a cause called Running for Premature Babies, and raised more than \$11,000 running in a 12 Hour event in chilly Canberra, and a Half Marathon in Sydney.

Matthew and his wife Kylie brought their son Rhys into the world 10 weeks early – so the cause, which has raised more than \$3 million and bought 16 neo-natal intensive care machines, was close to their hearts.

2. Stafford Jones, Komatsu branch manager in Townsville will soon be off to the Western Highlands of Papua New Guinea to distribute computers and computer aids, to school children as part of Litehaus International's program to remove the obstacles of digital illiteracy and make quality and relevant education accessible to all young people, devised by a 21-year-old Townsville colleague.

3. Kyra Bridges, a 21-year-old spare parts apprentice at Komatsu's Hobart branch has provided her grant to SPEAK UP! Stay ChatTY, a division of Relationships Australia to fund a youth engagement officer to work with schools, sporting groups and communities. The organisation is set to make a substantial difference to the positive promotion of youth mental health.

4. Nine-year-old Nixon Brown, a Leukemia survivor, has invited every trail-bike-rider in New Zealand to join him on June 23, when he goes riding with Motorcycle Hall-of-Fame legend Sean Clarke, to raise money for Child Cancer Foundation.

It's been made possible because Nixon's uncle **Spencer Raynel** works for Komatsu in Waikato and applied to the Live Your Dream program.

5. The trainers at Komatsu's Training Academy across Australia have signed on to undertake voluntary work with Rural Aid, bringing relief to drought affected farmers. **Janine Gurney**, who manages the academy said it was no coincidence that Rural Aid needed specific help with machinery maintenance.

6. Jacky Cai, Laura Deaves and Daren Thanh, Komatsu's Engineering Graduates based in Fairfield, have worked with the renowned Engineers without Borders organisation to help indigenous students in central western NSW to discover the opportunities of STEM (Science, Technology, Engineering and Mathematics) education.

They've already toured (27 – 31 May) presenting materials and personal experience at a variety of schools across Western NSW.



Pictured: Matthew completed this year's SMH Half Marathon & a 12 hour endurance race in Canberra on behalf of his chosen charity, Running for Premature Babies.



Pictured: Another LIVE YOUR DREAM winner, Stafford Jones, Townsville branch Manager hands over a \$10,000 cheque to Litehouse founder, 21 year old Jack Growden. L to R: Stafford Jones & Jack Growden.



Pictured: Spencer Rayner, Waikato Branch Regional Customer Service Manager, completed his Live Your Dream journey on 23 June 2019 to support the Child Cancer Foundation.



Pictured: Weier Group's PC210LCi-10 at work providing operational efficiencies and reduced operator fatigue.

QUEENSLAND'S FIRST AUTOMATIC KOMATSU EXCAVATOR GETS DOWN TO WORK

The first Queensland-purchased Komatsu excavator that can intelligently perform traditional manual operator duties has been hired out on a long-term roadworks project by Noosaville-based civil earthmoving and construction company, Weier Group.

Owner Gareth Weier said his business specialises in wet plant hire, supplying premium earthmoving and roadworks services to tier one customers throughout South East Queensland such as Seymour Whyte, Fulton Hogan, CPB Contractors, Lendlease and large civil contractors such as Shadforth. After working for eight years as a loader operator in an underground gold mine, Gareth continued his passion for machinery by starting his earthmoving business with a single skid steer. He has since built it up using predominantly Komatsu excavators including one hybrid 335LC-1, a PC300LC-8, two PC138US-8, one PC45MR-3 and one PC88MR-8.

Gareth said he has always taken a progressive approach to new machine technologies and the Komatsu iMC (intelligent Machine Control) PC210LCi-10 excavator purchase was an extension of that. "I like to be on the cutting edge of technology in terms of our equipment in order to demonstrate the progressive nature of our business," said Gareth. "That's always been our approach: something new comes out from Komatsu and we check it out to see if it can benefit our business.

"I wanted to see what the intelligent excavator could do. I had a go on it and I found it was really good. I was especially impressed by its operational efficiencies and reduced operator fatigue. We ended up being the first business in Queensland to buy one."

Gareth was particularly impressed by the Komatsu iMC excavator's automatic control features, which offer real-time bucket edge positioning in relation to the machine and job surface.

"With a normal machine the operator can see the line he has to dig to, but has to keep stopping to use his

bucket to check digging depths and ensure they're on grade. With the iMC excavator you take the bucket down to the line, pull one lever and it automatically traces the ground so the operator doesn't have to think and do as much as they would, conventionally, to avoid cutting past the line.

"Once the model has been loaded into the iMC machine, the surface level is set and the operator cannot cut past the line they have to dig. Because it can't be over-cut, you avoid having to in-fill with more material than is necessary, which is extremely important when you're trying to save the client money."

Komatsu says the iMC excavator's exclusive automatic control function technology can result in more than a 60 percent improvement in work efficiency when compared with conventional construction processes, an advantage noticed by Gareth.

"It is obviously more accurate and I saw that it would be quicker in practice," he said. Is this something he has already been able to leverage with his customers? "It's early days so we don't jump up and down about what it can do for a customer, but it does allow them to see the performance and benefits of the new machine in action on the job. I think they will count the outcomes and that builds a case further down the line. Customers will be looking for iMC machines over standard machines, sooner than later."

Gareth is also mindful of the benefits of iMC excavator's exclusive automatic control function technology for his operators. "They don't have to concentrate on cutting to a line as much when they know that the machine can take control and come down to the line. It requires less mental exertion over a day than they would usually expend. It's also a

quicker overall result because there are less required actions than in a manual exercise, so they're less fatigued all-round."

"I wanted to see what the intelligent excavator could do. I had a go on it and I found it was really good. I was especially impressed by its operational efficiencies and reduced operator fatigue. We ended up being the first business in Queensland to buy one."

In response to a perception that the iMC excavator's automation might erode the value of an operator's manual skills, Gareth said "Of course you still need someone who is fairly experience and knows what they are doing, but, no, the operators love it – even the experienced

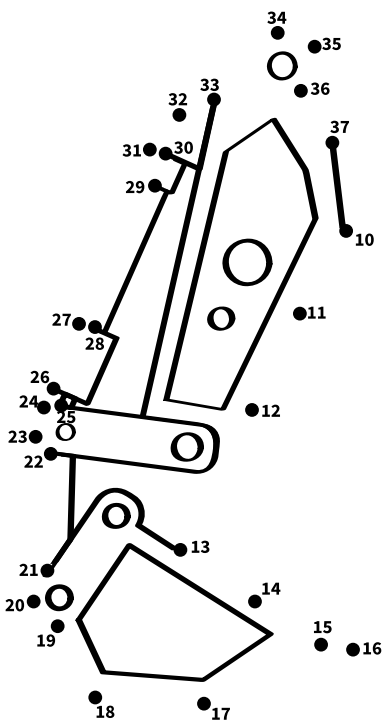
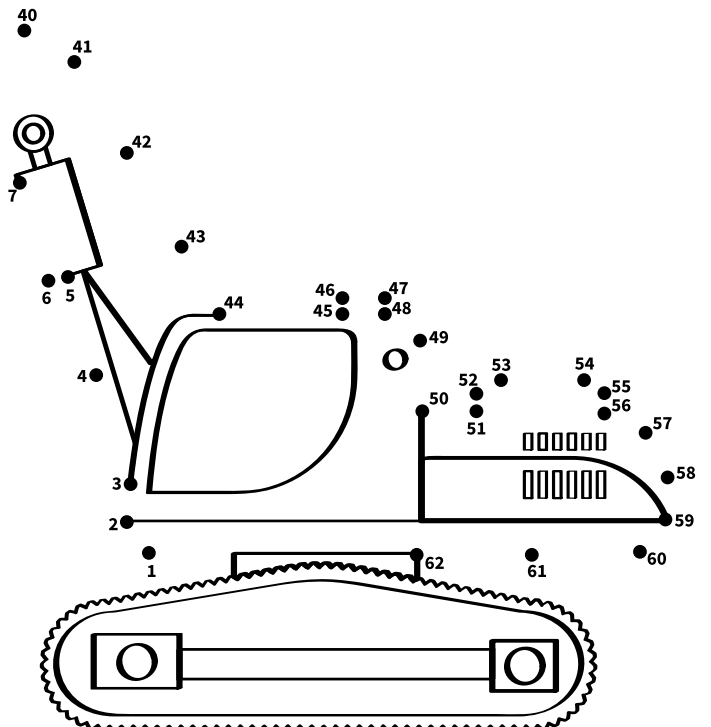
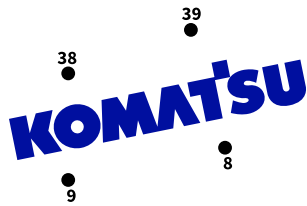
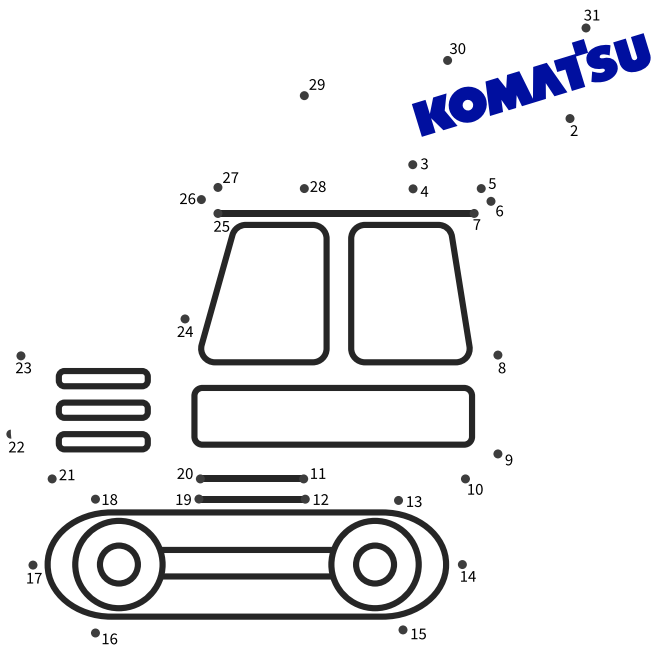
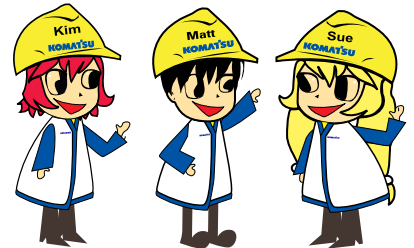
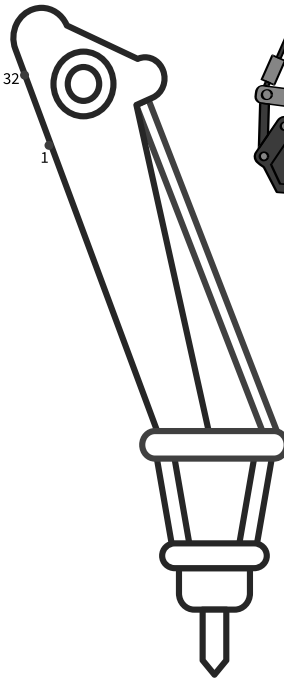
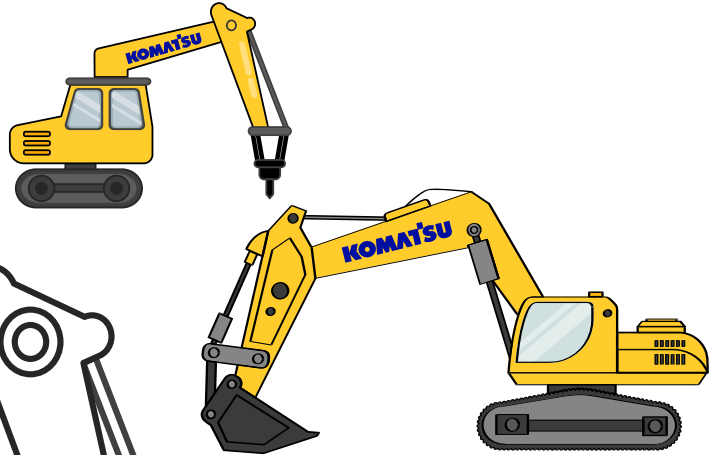
ones and especially the screen, which is a lot bigger and better than the bolt-on GPS systems."

Aware that Komatsu's iMC technology is in-built into the excavator, Gareth said he wouldn't consider 'bolt-on' alternatives. "The integrated Komatsu technology is not much more expensive. It's basically around the same cost but you're dealing with Komatsu rather than a third party, which is our preference. We have a machine from another manufacturer that is nightmare to deal with, in comparison. Getting anything done by them is like pulling teeth. Komatsu however is always so easy to deal with. They are very reliable machines but if anything needs attention Komatsu is right on fixing it. That's absolutely imperative in this industry because down-time equals losing money. We need machines that won't let us or our customers down.

From here on, Gareth sees additional Komatsu iMC machines being added to his fleet: "Yes this is our first step into that suite of the different offerings in Komatsu's SMARTCONSTRUCTION offerings Solutions. I'm focused on continuing to grow the business. I know Komatsu has an iMC dozer so will be keeping an eye on that. Hopefully a job will come up that suits it."

KIDS CORNER

CONNECT THE DOTS



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