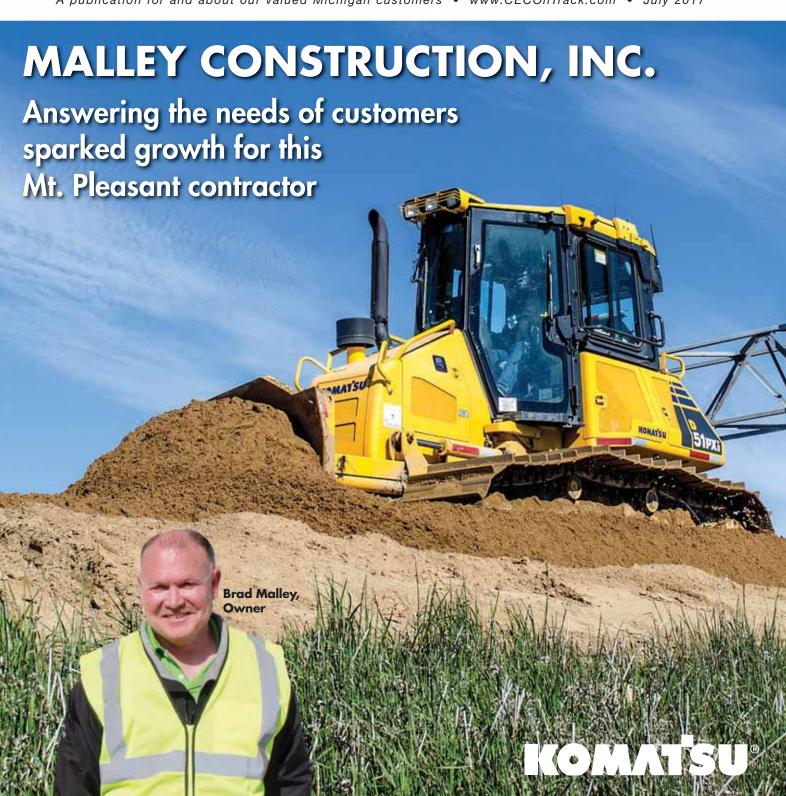


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A MESSAGE FROM THE PRESIDENT



Will Leistikow, President

Strong additions to Komatsu's lineup



Dear Valued Customer:

If you attended CONEXPO-CON/AGG, you saw some of the new innovative products in today's construction marketplace, as well as services that companies such as Komatsu and CEC offer to support them. In case you missed the show, this issue of your CEC On Track magazine recaps the triennial event.

In addition, it highlights some of the standout machines Komatsu recently introduced, including new D51EX-24 and D51PX-24 dozers that combine a decade of award-winning design with the latest technology to increase fuel efficiency and boost productivity. The D51-22s were Komatsu's original slant-nose dozers, and the Dash-24s prove you can enhance and build on a successful platform.

That's also true when it comes to hybrid technology. Komatsu was the first to introduce a hybrid excavator, and now it unveils a true 36-ton size class model with the Hybrid HB365LC-3. Like previous models, it captures energy normally lost during a swing cycle and uses it to assist the machine. It's more fuel-efficient than a comparable standard excavator, and in applications where swinging is prevalent, such as loading trucks, users will find it equally or more productive than a PC360LC-11. See inside for more details and read the other articles spotlighting Komatsu products, including the new PC170LC-11 excavator.

These new machines are covered by Komatsu's extended Undercarriage Assurance Program. You can learn more about the program in this issue as well. I think you will also be interested in the article related to an award Komatsu received for its support of educational programs, as well as our Komatsu & You spotlight, among others.

As always, if there's anything we can do for you, please call or stop by one of our branch locations.

Sincerely,

Continental Equipment Company

Wal Lablice

Will Leistikow,

President



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Find out how meeting customers' requests for a wide variety of projects encouraged Owner Brad Malley to expand his Mt. Pleasant-based business.

EVENT RECAP

Here's a recap of CONEXPO-CON/AGG 2017, where customers got an up-close view of the latest innovations in construction equipment and technology.

HANDS-ON EXPERIENCE

Come along as CEC customers test the latest *intelligent* Machine Control equipment and learn about Komatsu's SMARTCONSTRUCTION services at spring Demo Days.

GREEN TECHNOLOGY

Fuel savings of up to 20 percent are possible thanks to the electric swing motor-generator on Komatsu's new Hybrid HB365LC-3 excavator. Read more in this issue.

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Komatsu's new PC170LC-11 hydraulic excavator is well-suited for a wide variety of general construction jobs. Check out the details inside.

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Discover the features that increase the engine efficiency and durability of Komatsu's D51-24 dozers.

MILLING PRODUCTS

Take a look at Wirtgen's new large cold mill, the W 250i, which offers modern technology to take on diverse applications.

AT YOUR SERVICE

See how two Komatsu mining groups help customers determine best practices for improvement and evaluate equipment options.

KOMATSU & YOU

Get to know Vijay Dara, Director, Manufacturing Administration for Komatsu, who shares how continuous improvement methods drive the manufacturing process.

Published by Construction Publications, Inc. for



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MALLEY CONSTRUCTION, INC.

Answering the needs of customers sparked growth for this Mt. Pleasant contractor



Brad Malley, Owner

As a fifth-generation well driller in the late 1980s, Brad Malley built a sterling reputation through his central Michigan company, Brad Malley Well Drilling. As a result, customers routinely asked him to perform other services, so he started Malley Construction, Inc. in 1991 to handle smaller dirt jobs. Soon after, he jumped into the residential housing market and began building his construction company.

"The decision to expand was due to a few factors, but mainly because our customers wanted us to handle those projects," said Brad. "We had a lot of people asking us to bid jobs, but we couldn't because we didn't have the manpower. So, we decided to grow. That move put us on the path to where we are today."

After a decade of success in residential construction, Malley again took a chance and began doing commercial work, mainly parking lots, pad construction and utility installation. Today, that area accounts for nearly 70 percent of the company's construction business.

"We've been lucky," said Brad. "We diversified to meet our customers' needs in a way that worked for us. I also think that increasing in size and scope has kept me excited and fresh it was something I've always wanted to do. Plus, I still own the well-drilling business, a modular-home construction company and we have approximately 25 trucks that haul for us. Fortunately, each area thrived as we've expanded, and that's great."

by providing new challenges. I enjoy dirt work;

Malley says hard work and good employees have fueled the company's success. "We wouldn't have had the opportunity to build the business unless we delivered solid results at each level and had customers who wanted us to branch out. There isn't a secret to our success, just a good, solid work ethic and delivering a high-quality product for our customers. We want to make sure everything's right for them."

Another expansion

The firm made its name in the commercial side by specializing in site-construction projects in the 6,000- to 50,000-square-feet range. The company takes pride in its ability to transform a jobsite from a grass field and prepare it for vertical construction without the need to sub out work.

"We can do everything in-house to get a site ready for a structure to be built," noted Brad. "Our customers appreciate that because they know who is taking care of their jobs – it's always us. We like it because it gives us complete control, and we aren't waiting for or depending on others to do a good job. From excavation to utility construction, we handle it."

Malley Construction also recently found a niche in the \$1 million to \$2 million road-construction contracts within a 60-mile radius of its Mt. Pleasant office.

On the company's latest project, a 3.5 mile stretch of Business Highway 127 in Alma, the firm is performing one of its

A Malley Construction operator uses a WA320 to move material along Business Highway 127 in Alma.





largest undertakings. It milled and hauled 10,000 tons of the existing highway; removed the shoulders and laid new ones; installed 15 cross culverts underneath the road; and graded the entire stretch, which included adding a "super elevation" to a large curve in

"We have done more road construction recently, but mainly on city and municipal streets," noted Brad. "This was our largest highway project, and we're happy with it. We hope to do more of these in the future."

Technology "pays for itself"

the roadway, to ready it for paving.

As Malley Construction has expanded, so too has its investment in GPS technology. It began using aftermarket, grade-control systems on its dozers for excavation projects with great results in time and material savings. Last year, it purchased a Komatsu *intelligent* Machine Control D51PXi dozer from CEC and Area Manager Craig Williams, and those savings increased again.

"Today, you need some sort of GPS technology or you can't compete," admitted Brad. "We had good returns with the GPS systems, and I was a little hesitant to pull the trigger on the D51PXi, but wow, am I glad I did. The results have been amazing. We're at least twice as fast with our D51PXi compared to our D39 with an aftermarket system on it. We save time, we're always on-grade and we



This crew from Malley Construction uses a Komatsu PC360LC excavator to install a cross culvert.

use our crews in better ways because we don't need someone checking grade all the time."

While Malley needed some convincing to get his first D51PXi in 2016, he didn't need a push to purchase his second this year.

"They pay for themselves quickly," he stated. "They have been totally worth it."

While any owner can appreciate time and material savings, the people sitting inside the dozers have also fallen for the D51PXi.

Continued . . .

'Our Komatsu equipment is awesome'

... continued

"Everything works together so well on the D51PXi, it's amazing," said Foreman Reggie Smith. "I was blown away by the speed at which I can finish grade. It actually runs better at max speed. It carries better, the grade is smooth and you finish faster."

In addition to solid performance results, the technology was an easy sell to the operators because of how simple it was to learn and implement. Brad's son, Jake, has assumed the lead on the technology side of the company, and says it took only one demonstration to win over the crew.

"The guys know I am not an operator by any means," joked Jake. "At first, they didn't really trust the technology until I jumped in, put it in third gear and cut a grade for 400 feet in one pass. From then on, they've really taken to it."

(L-R) CEC Area Manager Craig Williams calls on Malley Construction Owner Brad Malley and his son, Jake, for all of their Komatsu sales and service needs.



An operator grades a slope with a Komatsu PC138USLC excavator on a road construction project in central Michigan.



Komatsu and CEC

In addition to the *intelligent* Machine Control dozers, Malley Construction also turns to CEC and Williams for other Komatsu equipment. The company has six Komatsu excavators – a PC138USLC, PC170LC, PC228USLC, PC308LC, PC360LC and a PC490LC – as well as several Komatsu WA320 and WA380 wheel loaders.

"Our Komatsu equipment is awesome," shared Brad. "The wheel loaders are great and steady, and the excavators are very powerful. We really love the PC138 and PC228 for their tight tail swing. We can get into small spaces, and we don't worry about running the back end into anything."

In addition to providing solid equipment, Brad also appreciates services like Komatsu CARE, through which CEC provides complimentary scheduled maintenance for the first three years or 2,000 hours of operation on Tier 4 machines.

"With a fleet of nearly 60 machines, having CEC come out and take care of scheduled maintenance on our newer pieces has really lightened the load on our mechanics," said Brad. "It's the little things that CEC does that keep me loyal. We have a great relationship with Craig that goes back to the 90s. Whenever I need anything, he's my first call. It's a relationship that I trust and value."

More growth ahead

Diversification has made Malley Construction prosperous, and Brad is anticipating that more of it will yield the same results in the future.

"It's my theory that if you aren't growing, you're dying," he said. "We are going to continue to increase our size to a certain extent, and there is a lot of opportunity for us to do that. We've put ourselves in a strong position to succeed, especially with the road projects we've completed. I think both the state and federal governments are eager to pass an infrastructure budget that will create a lot of work. If that happens, we'd look to expand again to get some of those contracts. No matter what, we will continue to work hard and deliver for our customers. If we do that, we'll be successful."





Discover more at CECOnTrack.com

A GLIMPSE INTO THE FUTURE

CONEXPO sets records as attendees look for 'what's next' from Komatsu, construction industry

Dave Ruemenapp, Service
Tech at TR Pieprzak
Company (left), shares
his thoughts on the PC490
excavator with a Komatsu
representative at CONEXPO.
"The Komatsu brand has
been reliable throughout the
years," shared Ruemenapp.

Attendees browse through the exhibit hall where Komatsu featured its latest standard machinery, a virtual reality simulator area, a Komatsu CARE Certified used machine, a company store and more.



Attendees of CONEXPO-CON/AGG may have gone to the show "Imagining What's Next," but they left with a solid idea of what the present and future of the construction industry hold. Much of what they saw at the triennial event – which set records for net square feet of exhibits, number of exhibitors and educational sessions – involved new technology designed to make the workforce and equipment more efficient, more productive and safer than ever.

Komatsu showcased its combination of *intelligent* Machine Control dozers and excavators as well as SMARTCONSTRUCTION. Introduced at CONEXPO three years ago, innovative *intelligent* Machine Control equipment features



factory-integrated GPS technology that works from rough-cut to finish grade without the need for traditional masts and cables associated with aftermarket systems. Komatsu's first *intelligent* Machine Control excavator was the PC210LCi-10, and during CONEXPO the company previewed its next-generation PC210LCi-11.

SMARTCONSTRUCTION takes *intelligent* Machine Control to another level with a comprehensive list of services that can help customers increase their production and profitability.

"SMARTCONSTRUCTION is integrated support and solutions," explained Jason Anetsberger, Komatsu Senior Product Manager. "With one phone call to Komatsu we can supply *intelligent* Machine Control equipment, train operators to utilize them most efficiently and provide quality 3-D data to get the most out of the machines. Additionally, Komatsu offers other tech such as aerial mapping with drones or our SMARTCONSTRUCTION cloud-based service that helps monitor production and progress on the jobsite. Komatsu's goal is to be a partner to our customers by delivering the best technology and service to ensure high productivity and efficiency."

Komatsu highlighted the future of operator training with a virtual reality simulator that attendees could test. This tool is designed to accurately simulate operating an excavator on a jobsite. "It was a good experience, very life-like," said Nick Beneke with DeLoss Construction of Spencer, Iowa. "The controls were very responsive. It was like running a real machine, so I can see how it would be good for training new operators or even to fine-tune skills for veteran operators."

Latest Tier 4 machinery, Certified CARE excavator

Additional new machinery at the show included Komatsu's first 36-ton size class Hybrid HB365LC-3 excavator, developed with as much an emphasis on increased productivity as on fuel economy. Similar to previous hybrid models, it captures energy normally lost during a swing cycle and uses it to assist the machine, making it more fuel efficient than a comparable standard excavator. Komatsu also formally introduced the new D51-24 dozers and the

Komatsu machines earn accolades for highest retained value



Product Managers Rob McMahon (Left, GD655) and Craig McGinnis (Right, WA320), along with Keith Allmandinger, Senior Marketing Manager for Komatsu Forklift U.S.A. (BX50 line), accept Highest Retained Value Awards from EquipmentWatch at a CONEXPO reception.

Komatsu's WA320 wheel loader, GD655 motor grader and BX50 forklift lines received Highest Retained Value Awards from EquipmentWatch at a CONEXPO reception. It is the industry's only award based on residual values for heavy equipment. All models honored are projected to retain the highest percentage of original value after five years, among all competitors in their respective categories.

To calculate the 2017 awards, EquipmentWatch analysts considered 12,536 models in their valuation database, which were then narrowed to 156 series from 36 brands. Once the finalists were set, residual values were calculated at the series level by leveraging a database covering more than \$412 billion in market activity to identify each category winner.

The Highest Retained Value Award is indicative of excellence across a manufacturing organization, according to EquipmentWatch Vice President Garrett Schemmel. He noted that product quality has the most obvious impact on an asset's performance in the secondary market, but residual values are also highly influenced by brand affinity and fair original pricing. A manufacturer must excel on all three fronts to gain recognition as a Highest Retained Value Award winner.

Attendees see latest technology at CONEXPO



Vicki and Dave Ruemenapp of TR Pieprzak Company enjoy the exhibit area at CONEXPO, held in Las Vegas March 7-11.

A CONEXPO-CON/AGG visitor looks through a headset as he takes part in a virtual reality simulation of operating an excavator at a jobsite.



Chris Churches (left) and Gabe Nowicki of M&M Excavating get ready to test the virtual reality simulator.



PC170LC-11 excavator, while displaying other Tier 4 Final products both in standard and intelligent Machine Control versions.

A Komatsu CARE Certified PC170LC-10 excavator with 1,452 hours was also on display to showcase this service program and the value of pre-owned machines maintained under it. Komatsu CARE ensures that pre-owned equipment, such as this excavator, have service intervals performed by Komatsu factory-trained technicians, for the first three years or 2,000 hours using Komatsu Genuine fluids, filters and coolants. The technicians conduct a 50-point inspection at each interval, and all maintenance and service information is available to buyers.

"CONEXPO is a great opportunity to see the latest in equipment and technology that's advancing the construction industry," said Komatsu's Rich Smith, Vice President, Product and Services Division. "It affords us the opportunity to show the broad range of equipment Komatsu offers, from small excavators to large haul trucks, all in one place. In addition, we want attendees to know that we are more than an equipment manufacturer. We offer outstanding parts, service and jobsite solutions. Komatsu is here to support customers from the time they purchase a machine until they are ready to trade it." ■

The next CONEXPO-CON/AGG



Komatsu's outdoor booth focused attention on intelligent Machine Control dozers and excavators as well as SMARTCONSTRUCTION, Komatsu's integrated support and solutions for operator training, 3-D data, aerial mapping with drones, and a cloud-based service that helps monitor production and progress on the jobsite.

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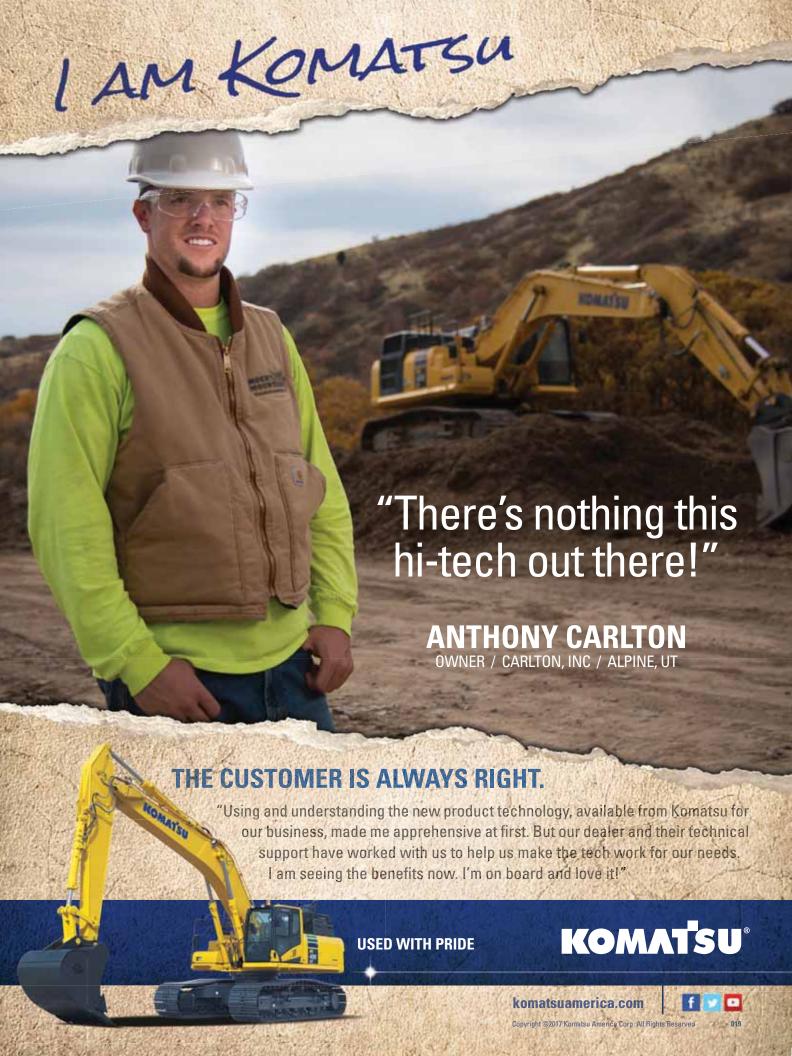


Want to make your next machine acquisition really count? Komatsu's lineup of automated excavators, including the all-new PC360LCi-11 and PC490LCi-11, feature a revolutionary, factory integrated, machine control system. The exclusive intelligent Machine Control technology lets operators focus on moving materials efficiently, without worrying about digging too deep or damaging the target surface. Contact your Komatsu distributor to learn how you can hit pay dirt today with Komatsu innovation.

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HANDS-ON EXPERIENCE



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TEST-DRIVING THE FUTURE

Customers have opportunity to experience the latest offerings from Komatsu

Nearly 180 customers attended Komatsu's spring Demo Days at its Cartersville Customer Center in Georgia. The three-day event featured the company's latest products, including its industry-leading *intelligent* Machine Control equipment and new SMARTCONSTRUCTION service that debuted at CONEXPO-CON/AGG 2017.

"Our Demo Days are great events because they give customers the chance to operate equipment and talk to our experts, so they get a real feel for everything these machines can do," said Komatsu Director of Training and Publications Tom Suess. "The technology on our *intelligent* Machine Control pieces is amazing, and to give customers the chance to experience them first-hand is really valuable."

In the morning, attendees had the option to tour Komatsu's Chattanooga Manufacturing Operation in Tennessee or take part in a SMARTCONSTRUCTION session and learn more about the service that helps customers achieve maximum performance through their intelligent Machine Control equipment. The SMARTCONSTRUCTION session was held in the recently renovated theatre at the Cartersville Customer Center.

After lunch, attendees had the remainder of the afternoon to operate more than 30 machines, including Komatsu's latest releases, the HB365LC-3 hybrid excavator, PC650LC-11 excavator, PC170LC-11 excavator, HD605-8 haul truck and D51PX-24 dozer. The lineup also featured the entire family of *intelligent* Machine Control excavators and dozers.

Komatsu's operator-training simulator, Worksite VR, unveiled at CONEXPO-CON/AGG, was available for customers to try out as well. Attendees completed a series of excavator tasks using a pair of virtual-reality goggles and working joysticks.

Many firsts

The event also served as a welcome for Komatsu America's new President and Chief Operating Officer Hank Takatsuki.

"Demo Days are always exciting, but this was special because there were so many firsts," said Suess. "It was our initial event after CONEXPO-CON/AGG that gave customers the chance to test all of the things they may have seen or heard about from the exhibit; we were able to show off our recent renovations; and we had the opportunity to welcome Hank. It was an awesome week and a great springboard into the future."



Tom Suess, Komatsu Director of Training and Publications



(L-R) CEC Sales Rep Timothy Ferguson is with Mario and Marty Caporossi of Caporossi Construction.



(L-R) CEC Sales Rep Denny Gill visits with Tom Gallagher and Keith Young of Harbor Springs Excavating.



(L-R) Rick Kappel of Rick Kappel Excavating, along with Jason Nicol and Ken Guilds of Nicol & Sons, Inc. discuss the excavators on display at Demo Days with CEC Sales Rep Chad Fullerton.



POWER AND EFFICIENCY

Komatsu releases new Hybrid HB365LC-3 excavator built for performance, fuel savings

Equipment owners are always looking for ways to increase production while decreasing costs. Komatsu's new Hybrid HB365LC-3 excavator – the industry's first true hybrid in the 36-ton size class – offers increased fuel efficiency without sacrificing performance, providing owners the best of both worlds.

"The Hybrid HB365 will be equal or better than our standard PC360LC excavator in terms of production, but with fuel savings that could be as much as 20 percent," said Kurt Moncini, Komatsu Senior Product Manager – Tracked Products.

Komatsu's unique hybrid system reduces fuel consumption through an electric swing motor-generator that captures and regenerates energy as the upper structure slows down and converts it into electric energy. The regenerated energy is stored in the capacitor and is used by the motor generator to provide swing power. An engine-mounted motor generator also uses stored energy to provide engine assistance when required.

"The Hybrid HB365LC will be a great fit for customers who use their excavators in high-swing applications," stated Moncini. "Each time the excavator swings, the capacitor is getting charged. That allows the engine to use electric power instead of fuel and operate at a lower rpm."

Tier 4 and more

The excavator features a Tier 4 Final, 269-horsepower, six-cylinder engine with a motor-generator and capacitor. The design of these two components also allows all swing energy that is captured to be used for boom and arm function.

"When it comes to the boom arm and bucket, the capacitor drives the swing and all available engine horsepower can go into the hydraulic system," explained Moncini. "This creates faster cycle times and a very quick, responsive swing."

The engine has a Komatsu aftertreatment system that meets U.S. EPA Tier 4 Final emissions regulations. A Komatsu Diesel Particulate Filter and Selective Catalytic Reduction work together to inject Diesel Exhaust Fluid and decompose nitrous oxide into non-toxic water and nitrogen.

The ROPS cab gives operators a spacious and safe working environment. Features include vibration-dampening mounting and a fully adjustable, air-suspension seat and arm rests.

Another important element is the 7-inch, color LCD monitor, which shows key machine information. The monitor displays a capacitor charge gauge, DEF levels and rearview camera. It has an Operator ID system that records machine-operation and application data for up to 100 individual ID codes.



Kurt Moncini, Komatsu Senior Product Manager – Tracked Products

Quick Specs on Komatsu's Hybrid HB365LC-3 Excavator					
Model	Horsepower	Operating Weight	Bucket Capacity		
HB365LC-3	269 hp	78,645-80,547 lb	0.89-2.56 cu yd		

Komatsu says the Hybrid HB365LC-3 will be equal or better than its standard PC360LC excavator, but with up to 20-percent greater fuel efficiency.



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INNOVATIVE PRODUCT

BIG-TIME VERSATILITY

Komatsu's PC170LC-11 excavator provides flexible options for utility contractors

Operators looking for a lightweight excavator have found an answer with Komatsu's new PC170LC-11. The 40,000-pound-class hydraulic excavator also gives owners a choice between two counterweights to best fit the machine to its application.

"The PC170LC-11 is well-suited for a wide variety of smaller, general construction jobs like grading, excavating and loading applications," said Andrew Earing, Komatsu Project Manager - Excavators. "A standard PC170LC-11 is below the 40,000-pound limit, so it can be towed behind a truck with a trailer. The ease of transporting and versatility are very beneficial for customers who need to handle multiple jobs in a day with minimal equipment."

The machine operates at 38,730 pounds with a standard counterweight configuration and at 41,338 pounds with the heavier counterweight.

"For operators who are running couplers, thumbs and other attachments, the heavier counterweight helps maintain the over-the-side lift capabilities as they would have with the standard counterweight," explained Earing.

Small frame, big power

The new excavator boasts a 121-horsepower, Tier 4 Final engine that, with the Komatsu Diesel Oxidation Catalyst, eliminates the need for active and manual regeneration. In addition, the new machine includes Selective Catalytic Reduction to lower nitrogen oxide emissions, Komatsu Auto Idle Shutdown and wide-access service doors to make it easy to reach components for ground-level maintenance.

Also, an enhanced P mode provides up to 6-percent improvement in productivity when

compared to the previous model. Like the rest of Komatsu's Tier 4 machines, the PC170LC-11 is covered by Komatsu CARE for the first 2,000 hours or three years of operation.

Comfortable and efficient

Operator comfort and efficiency were also upgraded in the new PC170LC-11. The integrated ROPS cab features a high-back, heated, air-suspension seat with adjustable arm rests.

The cab also includes a 7-inch, high-resolution LCD display monitor that gives operators enhanced hydraulic attachment control, with one-way/two-way flow and programmable work tool names and settings. It features a rearview camera display and the ability to store up to 100 individual ID codes.



Andrew Earing, Komatsu Product Manager - Excavators

Quick Specs on Komatsu's PC170LC-11 Excavator					
Model	Net Horsepower	Operating Weight	Bucket Capacity		
PC170LC-11	121 hp	38,730 - 41,338 lb	0.48 - 1.24 cu yd		

Komatsu's new 121-horsepower, Tier 4 Final PC170LC-11 excavator has two counterweight options to best fit the machine to its application.



BUILDING ON SUCCESS

New D51-24 dozer features improve efficiency, durability of original award-winning design



Jonathan Tolomeo, Komatsu Product Manager



Chuck Murawski, Komatsu Product Manager

Ten years ago Komatsu introduced its first super-slant nose dozers, the D51-22s. A year later they earned an International Design Excellence Award for the unique design which allows operators to see objects that are close to the blade, dramatically increasing efficiency and production on the jobsite. During the past decade, Komatsu brought that same innovation to additional dozer models, including its new Dash-24 D51s.

"The super-slant nose design moves the operator forward 20 inches, which delivers unrivaled visibility to the six-way power angle tilt blade and the work at hand," said Jonathan Tolomeo, Komatsu Product Manger. "Visibility is further improved because Komatsu moved the air intake and the exhaust stack to the left side of the slant-nose hood so that it's in line with the pillar. This offers the operator an unrivaled view, compared to the rest of the industry."

Komatsu's new D51EX-24 and D51PX-24 dozers maintain the award-winning slant-nose design, but new features provide better fuel efficiency and productivity. A parallel linkage undercarriage system (PLUS) with rotating bushings is now standard.



More efficient engine, transmission

Two models are available – D51EX-24 and D51PX-24 – both with a more efficient Tier 4 Final engine that lowers fuel consumption by up to 13 percent, while at the same time boosting production by as much as 15 percent. The engines use a Diesel Oxidization Catalyst and Selective Catalytic Reduction system, eliminating the need for a Diesel Particulate Filter. It has a variable geometry, water-cooled turbocharger that automatically controls back pressure and the exhaust system to maintain temperatures for better regeneration.

"Like their predecessors, the new D51-24 dozers feature a hydrostatic transmission (HST) that gives them excellent maneuverability and a smooth, comfortable ride," reported Komatsu Product Manager Chuck Murawski. "The HST is customizable with quick-shift settings and variable-speed selection for maximum efficiency during fine and rough grading operations, with travel speeds to match job conditions and operator preference."

Standard PLUS undercarriage

A parallel linkage undercarriage system (PLUS) with rotating bushings is now standard, as are a triple-labyrinth-seal final drive and a debris shield that provides longer undercarriage life and lowers repair and maintenance costs. The final-drive seal creates a restricted path for debris, while the shield directs debris away from the final drive and the floating seal area.

Self-adjusting idler support provides constant and even idler tension, reducing vibration and increasing undercarriage life. Komatsu's PLUS undercarriage system now includes five-year or 6,000-hour assurance. (See related article on Komatsu's Undercarriage Assurance Program).



Komatsu improved the durability of the dozers by utilizing heavy-plate steel for the nose as well for the hydraulic and fuel tanks. Reinforced mold boards on the blades of the D51EX-24 and D51PX-24 provide greater wear resistance.

Model	Horsepower	Operating Weight	Bucket Capacity
D51EX-24	131 hp	30,821 lb	3.8 cu yd
D51PX-24	131 hp	31,438 lb	4.4 cu yd

More durable frame, blade

Komatsu improved the durability of the dozers by utilizing heavy-plate steel for the nose as well as for the hydraulic and fuel tanks. The dozer frame is manufactured with full steel castings.

The U frame behind the blade is reinforced, and the box section is thicker with fewer welds. Reinforced mold boards on the blades of the D51EX-24 and D51PX-24 provide greater wear resistance. The D51PX-24 offers a higher-capacity 4.4-yard blade, which can increase production by up to 15 percent.

Both dozers have manually adjustable blade pitch that boosts productivity. Operators can choose from three blade modes (Fast, Fine or Normal) to match conditions and preferences. For example, Fast mode increases blade speed while using the same amount of lever movement.

Enhanced technology

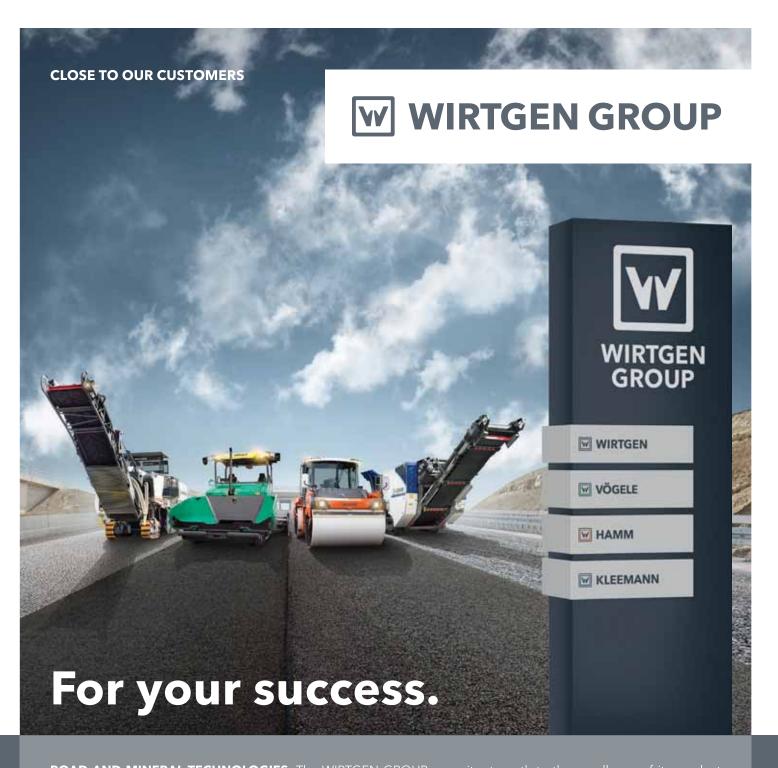
A redesigned cab features new technology that includes an easy-to-read and use, large, 7-inch, high-resolution, multi-color LCD monitor with Ecology guidance and onboard diagnostics that require no additional tooling. Hundreds of parameters can be measured through the monitor, and operators can make adjustments to blade settings and travel speeds.

An integrated rearview camera can be synchronized with the travel lever, so that when the dozer is shifted into reverse it displays what's behind the machine. This saves the operator from turning around, reducing overall fatigue.

The D51-24s now have one pedal with two modes, Braking and Deceleration. "Deceleration slows down the travel speed and the engine rpm," explained Murawski. "Braking keeps the rpm constant and slows the machine, which is handy for fine grading and on jobsites where there are lots of contour changes and blade motion during grading."

Additionally, the D51-24s have Komatsu's Auto Idle Shutdown that reduces excessive idle time and the Operator Identification System, which provides KOMTRAX data for machine operation and applications for up to 100 individual ID codes. A disconnect switch lets operators completely shut down the machine's power for storage. An operating-system lamp sends an alert if the machine is not ready for a complete shut down.

"Customer feedback tells us the D51-24s are highly versatile," shared Tolomeo. "They are very effective for final and fine grading. The D51-24s are also high-production pushing machines, so they are extremely versatile for a variety of applications, including landscaping, site preparation and road construction among others." ■



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MILLING PRODUCTS

NEW LARGE COLD MILL

Wirtgen's W 250i features integrated dual conveyor, two engines for maximum efficiency and power

Large mills are the machines of choice for renewing sizable asphalt or concrete surfaces. Wirtgen's array of cold milling products gets the job done effectively and productively with working widths of 4 feet, 11 inches to 14 feet, 4 inches. Included in the lineup is a new, 610-horsepower W 250i that features an integrated dual conveyor.

Two parallel belts uniformly accelerate the milled material, transferring it in a compact stream to a waiting truck. Numerous other advanced features – such as the camera system, operator consoles, scraper-activation system and job-data processing – help make this and other large Wirtgen cold mills even more productive and profitable.

Wirtgen's large cold mills can do more than remove asphalt and concrete pavements layer by layer down to the maximum working depth of 14 inches. They can also roughen surfaces, level substrates, produce plane surfaces with millimeter accuracy and remove tunnel floors. The variety of applications is immense, as is the flexibility with which they adapt to individual milling jobs.

Modern tech for diverse applications

The twin-engine drive of the W 250i, as well as the W 210i, is unique among cold milling machines. With two diesel engines, the operator can utilize engine power on demand, reducing fuel costs by up to 25 percent compared to another conventional drive system.

The parallel-to-surface feature automatically positions the large milling machines parallel to the road surface,

ensuring simple and flawless operation for high-quality profiling work. This automatic function carries out all the steps that an operator would otherwise need to select individually. Automating the process of lowering the machine into the milled cut helps avoid excessive tool wear or breakage as milling begins, while greatly simplifying the operator's job.

Another example of Wirtgen's innovative technology is the Intelligent Speed Control system that, like traction control in a car, minimizes spinning of the crawler tracks. That enables optimum traction in each one so the machine can achieve ideal milling performance.

The twin-engine drive of the W 250i is unique among cold milling machines. With two diesel engines, the operator can utilize engine power on demand, reducing fuel costs by up to 25 percent compared to another conventional drive system.





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LOWERING UNIT COSTS

Mining groups help customers evaluate proper equipment and best practices for improvement

Mining involves moving materials from point to point at the lowest per-ton costs possible. To accomplish that takes the proper equipment as well as a solid plan for how to best use it in a particular operation. Komatsu Mining helps customers with both aspects, utilizing the experience of two groups focused directly on making companies more efficient, productive and cost effective.

Selecting the right equipment is about more than getting big machines and putting them to work. Komatsu Application Engineering Group Director J.D. Wientjes explained that it's important to take many factors into consideration, and his team is happy to help with that process.

"Primarily, we work with customers prior to a purchase to determine items such as proper fleet and equipment size," said Wientjes. "This exercise typically involves reviewing site productivity and operating goals, as well as equipment performance objectives, both near- and long-term."

Wientjes says sometimes it's not necessary for customers to buy new equipment to increase production and realize greater efficiency.

"We come in with an earnest approach to identify the optimum means of production, and determine if the equipment the mining company is looking to purchase makes the most sense," he said. "Occasionally it doesn't, and it might be best to change practices to better utilize what they already have. We recommend what we believe is most beneficial, and then it's up to the customer to decide what to do."

The Application Engineering Group has numerous examples of these study types.

Continued . . .



J.D. Wientjes, Director, Komatsu Application Engineering Group



Pat McCarthy, Director, Komatsu Mining Optimization Group



Komatsu Mining's Application Engineering Group helps mines determine the proper fleet and equipment size. "This exercise typically involves reviewing site productivity and operating goals, as well as equipment performance objectives, both near- and long-term," said Director J.D. Wientjes.

Happy to help in any way

... continued

"Recently, a quarry asked us to look at its historical mining methodology, which had always been to use large dozers pushing long distances at steep incline angles," Wientjes noted. "It wanted to know if there was a better way. Given its existing fleet size and other aspects of its material-handling system, we suggested that the company keep using dozers, but not push long, uphill grades.

"To achieve this, we noted that the available highwall length could be used to develop sequential working faces of varying heights," he added. "This application change would allow the dozers to mine in a stair-step fashion to optimize performance."

Focusing on goals

Mining customers also benefit from Komatsu's Mining Optimization Group. Headed by Director Pat McCarthy, it identifies ways to improve practices and maximize production.

"Mines change over time. Pits get deeper, haul roads become steeper and other factors come into play," said McCarthy. "Companies have to adapt and change to maintain or gain

The Mining Optimization Group helps mines identify ways to improve practices and maximize production. "Mines change over time. Pits get deeper, haul roads become steeper and other factors come into play," said Director Pat McCarthy. "Companies have to adapt and change to maintain or gain production. Otherwise, they risk per-ton costs going up and losing their competitive edge."



production. Otherwise, they risk per-ton costs going up and losing their competitive edge."

McCarthy and his team collaborate with mine personnel to gather information on the operations and the customer's goals. Then, the Mining Optimization Group forms a plan to help achieve those aims.

"We look for detailed information in every meeting," said McCarthy. "As we build the plan, our team tackles the most prominent concern first and then moves down the list. Customers may only implement an item or two, and that's fine. We're happy to help any way we can."

McCarthy cited a prime example of how the Mining Optimization Group solved a common problem that plagues mines and created an innovative approach for improvement.

"There is an optimal target load for every truck, but shovel operators can have difficulty meeting that each time," McCarthy explained. "We asked our engineers to develop software for the trucks to identify the actual load on each haul cycle, and this solution is now known as the Optimized Loading Software for the payload management system. It provides the tonnage number to the operator so that person knows exactly to what point to load the truck. This software has helped tighten the distribution curve by calculating the allowable load on each cycle. Mines are seeing up to 30 percent improvement compared to a few years ago."

No need to get out your wallet

Neither mining group charges for its services. The assistance is all part of Komatsu's commitment to maximizing customers' operations.

"Our goal is to help increase the bottom line of our customers," said Wientjes. "This helps build loyalty with customers who use Komatsu equipment. Hopefully, our services lead to a better, longer-lasting relationship that keeps them purchasing Komatsu products."

"Anyone considering new Komatsu equipment, or currently using it and looking for better utilization, can contact us anytime," added McCarthy. ■

IMPROVED OPERATIONS

Vijay Dara explains how continuous, measured improvement drives manufacturing process

QUESTION: What has Komatsu done to make its manufacturing operation more efficient?

ANSWER: Two years ago we began to include spare or service parts warehousing, along with production/assembly, in our definition of manufacturing. While this may seem like a small detail, it is important because it requires us to consider the entire machine's life cycle and integrated supply chain when making decisions.

QUESTION: What is the impact of this change?

ANSWER: It has helped us to better understand how the entire process works together. One example is with spare parts availability. There isn't any difference between a part that is made for a new machine or one that is stocked for spare parts – one gets put on a machine, the other goes into a box – the engineering and manufacturing/procurement are the same.

Prior to including parts warehousing in our definition, the warehouses and production facilities worked independently of each other. Now, if a customer needed a part that was out of stock, the warehouse could call the production plant, that would then make or procure a new one, pull one from its production line or take the part from a machine that was in production.

By including warehousing under one umbrella, all areas are now on the same page. They work together particularly to plan inventory, procurement and transportation needs; and unexpected needs are easier to manage, which is an advantage to Komatsu. However, customers also benefit because it means that warehouses should have



This is one of a series of articles based on interviews with key people at Komatsu discussing the company's commitment to its customers in the construction and mining industries – and their visions for the future.

Vijay Dara, Director, Manufacturing Administration

Vijay Dara joined Komatsu nine years ago and began his tenure in corporate strategy. He has worked in manufacturing administration for the last five years. In his current role as Director, Manufacturing Administration, he serves as an internal advisor and supporter to the Komatsu America production and warehouse locations to enable standardization of all strategic and tactical activities for safety, legal compliance, quality, delivery and cost (SLQDC).

"The SLQDC acronym is a very common and important one in manufacturing," said Dara. "All aspects need to work together to have a successful operation, and all aspects are important."

Dara has more than 20 years of experience in manufacturing, procurement, design engineering and information technology in off-highway and automotive industries.

Originally from India, Dara earned his bachelor's degree in mechanical engineering from the University of Mumbai, India, as well as an MBA from the University of Michigan, Ann Arbor.

In addition to his manufacturing responsibilities, Dara is also involved in Komatsu America's Leadership Development Program "Trax."

"Trax is a great thing for Komatsu to offer," he said. "It has helped me develop as an individual and to contribute both at work and at home."

Outside of work, Dara enjoys spending time with his wife, Samatha, and their two children.

Customer-driven metrics help evaluate quality

. . . continued



While Komatsu strives for zero customer claims on its parts and machines, Komatsu Director, Manufacturing Administration, Vijay Dara sees each claim as an opportunity to improve engineering and manufacturing processes.

Komatsu began including spare parts warehousing in its definition of manufacturing two years ago.



By locating spare parts warehouses closer to production facilities, warehouses have better access to the resources of the manufacturing plants and increased availability.



more access to parts in-stock or be able to get them faster.

QUESTION: How do you think that process will evolve in the future?

ANSWER: I think we will eventually see warehouses located closer to the production plants. The proximity will have a very positive effect on the whole process. The parts are made at the production plant, and if they aren't installed on a machine, they are put on a shelf. It eliminates many logistical costs and makes communication between production and warehousing a lot more efficient. It gives the parts warehouse access to all of the manufacturing operation's resources as well.

QUESTION: What process does Komatsu use to check the quality of its parts after they leave the manufacturing plant?

ANSWER: Every plant has a Quality Assurance (QA) Manager who is responsible for seeing that the quality of the products meets customers' needs. After a machine leaves the plant we use customer-driven metrics to evaluate the quality. When a customer files a warranty claim on a part (100 hours, 500 hours or later) or even when the plant identifies a nonconformity before shipment, we really dig into the claim to see what occurred through the entire supply chain. It is our goal to determine if the issue was isolated or something that affects every part/machine and causes us to reevaluate our engineering and manufacturing processes. The QA Manager works with other personnel within and outside of Manufacturing to address quality issues in a streamlined manner utilizing QC concepts to correct the concern.

QUESTION: Will there ever come a time when there are no claims?

ANSWER: That is always our desire. We know that it is realistically improbable, but we believe we can continue to improve if our goal is zero. As long as we are improving, we do not get discouraged when we receive a claim. Instead, we see every claim as an opportunity to learn and better our machines. So, in a way, we actually view a claim's "bad news" as good news.

THE AED FOUNDATION HONORS KOMATSU

Company receives Partner Award for education

Komatsu America has long advocated for education in the construction industry, especially service technician training. The AED Foundation recognized Komatsu for its efforts with the Foundation Partner Award during its annual convention, AED Summit, held earlier this year.

Mike Hayes, Komatsu Director of Distributor Development, received the award on behalf of Komatsu at The AED Foundation Fundraising Gala. Proceeds from this fundraiser help provide educational opportunities in the industry. Hayes has served on The AED Foundation's board for several years and has helped with its workforce goals, such as developing school accreditation programs.

"There is a real skills gap in the industry today, and we have to be proactive in finding and recruiting those individuals who will fill the numerous job openings in the construction industry today and in the future," said Hayes. "Komatsu is doing that by partnering with schools, such as the Oklahoma State University Institute of Technology (OSUIT) and the North Dakota State College of Science (NDSCS), that provide two-year programs in diesel technology with a specific emphasis on Komatsu equipment. We have a 20-year history with OSUIT, and last year the first class graduated from NDSCS."

Classroom, hands-on

Both programs are accredited by The AED Foundation, and Hayes is talking with other schools about starting similar training options. Komatsu supplies some machinery and parts that students use to gain practical knowledge. The schools offer both classroom and hands-on experience. Students rotate attendance between their school and a Komatsu dealership where they work in a shop at a branch location.

Dealerships sponsor students and usually provide financial and other incentives to complete their degrees – and often jobs when they have successfully finished the program.

Hayes recently told AED's Construction Equipment Distributor magazine that enrolling in such programs is a great investment in the future, both for students and the industry as a whole. "Schools can teach theory, and they have the latest and greatest technology from manufacturers," according to Hayes. "Many of the technical colleges I talk to report that students have no problem securing employment upon graduation. More than 90 percent have already found work by the time they graduate." ■

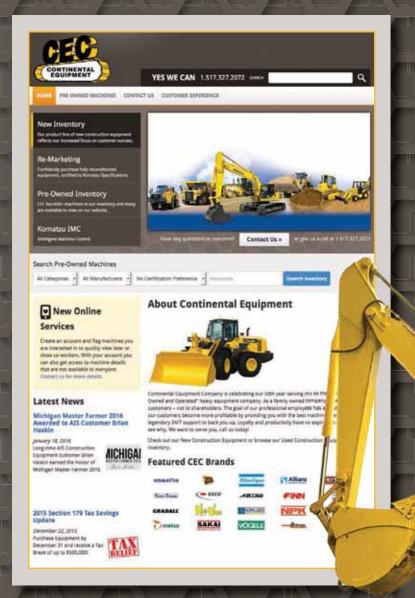


Komatsu Director of Distributor Development Mike Hayes (left) receives The AED Foundation's Partner Award from The AED Foundation President Robert Henderson.

More than 90 percent of students from two-year diesel technician programs with an emphasis on Komatsu equipment find work prior to graduation.



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PRODUCT SUPPORT

LONGER UNDERCARRIAGE COVERAGE

New Assurance Program sets industry standard

How does Komatsu evaluate the quality of its undercarriage components? One way is by analyzing the dependability of components and also collecting insight on the user experience to gather feedback from those who use the product.

"We believed that the previous terms were not indicative of how positively we feel about the quality of our undercarriage," said Jim Funk, Komatsu Senior Product Manager - Undercarriage. "That led us to extend our terms for all dozers and excavators and, in turn, really separate Komatsu from the competition."

Komatsu's new Undercarriage Assurance Program covers all conventional and PLUS (Parallel Link Undercarriage System) components against leakage and breaks. Conventional components are covered for four years or 5,000 hours, whichever comes first. PLUS undercarriages are covered for five years or 6,000 hours. Also, this new policy allows coverage terms to restart on any group of components replaced while supported by both the customer and Komatsu. Previously, all Komatsu undercarriage components were included under the same terms, three years or 4,000 hours.

"This new assurance program is the longest in the industry," noted Funk. "Every major undercarriage component is included in this policy – link assemblies, rollers, idlers and shoes. If there is an issue that is not due to improper use or other influences, customers can expect that Komatsu will stand behind the product and provide support."

Manufactured for durability

Funk added, "We are proud to say that Komatsu undercarriage components are built

and designed by Komatsu, specifically made for our machines. They are precision-machined and heat-treated for exceptional performance and durability."

All sizes of dozers and excavators put in use starting from July 1, 2016, now fall under the Undercarriage Assurance Program, as do replacement undercarriages installed since that date.

"This is not a short-term deal," Funk emphasized. "It's now our standard and another Komatsu mark that sets the industry standard. We understand our customers expect quality and value. This new coverage shows that they are going to get both when purchasing Komatsu Genuine Undercarriage."



Jim Funk, Komatsu Senior Product Manager -Undercarriage

Komatsu's new Undercarriage Assurance Program covers conventional undercarriage components against leakage and breakage for four years or 5,000 hours, whichever comes first. PLUS (Parallel Link Undercarriage System) undercarriages are covered for five years or 6,000 hours. The extension is now standard and the industry's longest.





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2014 KOMATSU D65PX-17 Stk #: W41843, S/N: 002374, 951 Hours,



2008 KOMATSU HM400-2 Stk #: W41895, S/N: 002481, 3012 Hours.



W42050, S/N: 2540, 6632 Hours. .



2003 KOMATSU PC800-7 S/N: 40003, 9500 Hours, Standard arm/bkt.



2011 KOMATSU PC128US-8 Stk #: W42177, 2052 hrs., S/N: 027524 . .



2011 KOMATSU PC120-8 Stk #: W41888, 1322 hrs., S/N: 84031...



2011 KOMATSU PC30MR-3 Stk#: W42315, 1037 hrs, OROPS, Aux. Hyds, Std. Arm, 16" bkt . . . \$34,900



2015 KOMATSU PC240 LC-10 Stk #: W42198, S/N: 090229, 2023 Hours. .



2011 KOMATSU PC30MR-3 Stk #: W41687, S/N: 34349, 961 Hours 🖏 \$30,500



2011 KOMATSU PC78US-8 Stk #: W42320, 1225 hrs., S/N: 017396.



2011 KOMATSU PC78US-8 Stk #: W41587, S/N: 017660, 2119 Hours. \$63,500



2011 KOMATSU PC128US-8 Stk #: W41869, 2419 hrs., S/N: 026765. 🐎 \$84,500



JCB 507-42 Stk #: W42539, 250 hrs., 4WD drv., 7000 Capacity, Open ROPS,



2015 JCB 409 Stk # W42125, S/N 2093456, 9 Hours, Call for more infor-



2015 KOMATSU D61PXI-23 Stk #: W42301, 1542 hrs., Enclosed ROPS, S/N: 030851, Cab with AC * \$264,900



2010 KOMATSU PC88MR-8 Stk #: H47151, S/N: A90049, 2534 Hours



2005 KOMATSU WA100-5 Stk # W42155, S/N 074870, 1418 Hours



2014 KOMATSU WA270-7 Stk #: W42086, 85 hrs., Enclosed ROPS,



KOMATSU WA270-7 Stk #: K3346, S/N: K3346, 261 Hours . .



2011 KOMATSU PC40MR-3 Stk #: W41862, 1435 hrs., S/N: 019356...

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