

PUSHING AHEAD

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KOMATSU EXPANDS DOZER LINEUP

Three new *intelligent Machine Control* dozers provide automatic blade control from the first pass to the last



KOMATSU[®]

A MESSAGE FROM THE PRESIDENT



Ronald Zagami

**Construction
industry
continues to
improve**

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Dear Valued Customer:

When the recession hit a few years ago, construction was one of the hardest hit industries. It's been a slow climb, but recently the industry has seen significant improvements, especially in housing. Construction employment continues to rise, and nonresidential markets are showing gains as well. We're optimistic that these trends will continue, and hopeful that Congress will pass legislation that continues to fund transportation infrastructure by the time the current highway bill expires in September.

Last year, Komatsu introduced the first intelligent dozer, which drew rave reviews. Because these models were so well received, Komatsu has significantly expanded its *intelligent Machine Control* family. In this issue of your *Pushing Ahead* magazine, you can read about three new models that are available and provide good options for a variety of applications.

You can also read about the new PC88MR-10, the first Komatsu product to meet Tier 4 Final regulations. The PC88 remains a popular choice among those who use compact, tight-tail-swing excavators because it provides exceptional production and lift capacity in close quarters where larger machines are not an option.

In this issue's Industry Standards article, we will show you how Komatsu has met the stringent Tier 4 Final regulations on machines with 75-horsepower engines or more. As with Tier 4 Interim equipment, new Tier 4 Final products will also be covered by Komatsu CARE. Under the program, our technicians perform complimentary scheduled services for the first three years or 2,000 hours.

Of course, we can take care of all your service needs, including older-model Komatsu machines and equipment we carry from other manufacturers, as well as the competitive brands we don't. Remember, staying on top of maintenance keeps your equipment productive and provides maximum uptime during the busy construction season.

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

Sincerely,
CLAIREMONT EQUIPMENT COMPANY



Ronald Zagami, President



PUSHING AHEAD

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INDUSTRY EXTRAVAGANZA

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Read how new Tier 4 Final machines improve efficiency while maintaining Komatsu's strong work ethic.

MORE INDUSTRY NEWS

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CONEXPO RECAP

Nearly 130,000 see latest innovations in construction equipment, technology at industry's premier event

CONEXPO-CON/AGG attracted nearly 130,000 visitors during its five-day run at the Las Vegas Convention Center, marking the second-largest attendance in the equipment exhibition's history. The number of attendees increased significantly compared to 2011, which was the last time the triennial event was held. Only CONEXPO 2008 had a larger number of people in attendance.

A record 31,000 international attendees came for the show, which also set a new mark for

Educational seminars gave attendees valuable information about best practices and technology that could make them more efficient, productive and profitable. Industry professionals, such as Komatsu's Jason Anetsberger, Product Manager, Intelligent Machine Control, conducted the sessions.



Komatsu personnel were available to answer visitors' questions.



exhibitor space and exhibitors. Indoor and outdoor displays totaled more than 2.3 million net square feet, with 2,000 exhibitors on hand. CONEXPO-CON/AGG was co-located with the International Fluid Power Exposition (IFPE), which added more than 161,000 square feet of exhibit space and 400 exhibitors.

"CONEXPO-CON/AGG and IFPE 2014 reflected the feeling of momentum that's building in the industry," said IFPE Show Director Melissa Magestro. "We are industry-run shows that put industry needs first; these show numbers are a testament to the value that attendees, exhibitors and other stakeholders derive from participating in the event."

Komatsu had one of the largest display areas, showcasing 24 construction, forestry and forklift products that fit the theme of "Innovative, Intelligent, Integrated."

Komatsu displayed its family of *intelligent Machine Control* (iMC) dozers that feature integrated machine control technology. A dedicated theater presentation showed how iMC dozers provide automatic grading from rough-cut to finish grade without using traditional add-on masts and cables. User testimonials highlighted the advantages of iMC dozers, such as automatic blade control and reduced track slip for more efficient and effective dozing.

"We introduced our first iMC dozer about a year ago, and the feedback has been extremely positive," said Rich Smith, Vice President ICT Business Division and Product Marketing. "CONEXPO is a good place to introduce the newest *intelligent Machine Control* dozers, as well as our extensive list of other new products."

Komatsu also presented its new third-generation Hybrid HB215LC-2 excavator. In 2008,



Komatsu showcased 24 machines in its 40,000-square-foot exhibit space. It also had an iMC theater (right) and an area devoted to KOMTRAX, Komatsu CARE, parts and ReMarketing.

Komatsu introduced the first hybrid excavator and has since sold more than 2,500 worldwide.

“CONEXPO provides a tremendous opportunity for owners, operators and other construction personnel to see the latest in equipment and the technology that’s driving the industry forward,” said Rod Schrader, Komatsu Chairman and CEO. “CONEXPO allows us to show how Komatsu is refining machines to transform the workplace of the future.”

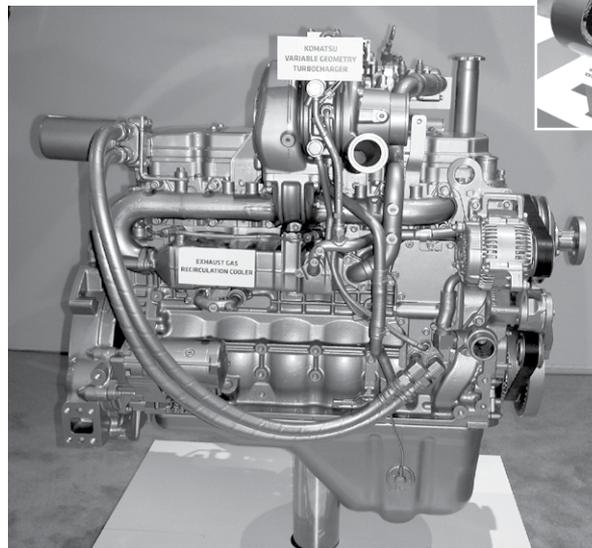
Komatsu introduced several new Tier 4 Final products, including dozers (D155AX-8 and D65EX-18), excavators (PC490LC-11, PC240LC-11, PC88MR-10 and PC55MR) and an HM300 articulated dump truck. It also displayed a Tier 4 Final engine, so attendees could see the innovative way Komatsu meets emissions standards while providing greater machine efficiency. Komatsu’s Tier 4 Final engine technology builds upon the strength of its proven Tier 4 Interim foundation, integrating Selective Catalytic Reduction (SCR) that further reduces NOx emissions.

Additional excavators, wheel loaders, an HD605-7 rigid dump truck, a PC390LL-10 track log loader and an FH45-1 hydrostatic forklift rounded out the displayed equipment. Presentations throughout the show; a large video screen with Komatsu information

Continued . . .



Komatsu displayed the technology behind its Tier 4 Final engines, including the selective catalytic reduction components (inset) that reduce emissions to near zero.



Go online or scan this QR code using an app on your smart phone to watch video.

Komatsu products: "Innovative, Intelligent, Integrated"

... continued

CONEXPO Conversations



Jeff Jordheim, Co-Owner, East & West Excavating, Fargo, N.D. "This is my second CONEXPO. I come to see the new products and learn from what's here."



Alan Wright, Vice President, Clearwater Utilities and ClearPave Construction, Houston, Texas. "We wanted to see the latest equipment. We get busy with our projects in the field, and this was a good time to come out and spend a day or two to see what's new."



Shane McDonald, Owner/President, AGR Contracting, Monroe, Wash. "I've learned a lot about Komatsu's intelligent Machine Control on the dozers. We own a mixed fleet, but this iMC really sparks my interest."

and testimonials; a parts, Komatsu CARE, ReMarketing and KOMTRAX information area; and a merchandise store were all part of the company's 40,000-square-foot exhibit space.

More than 1,000 new products, services

CONEXPO organizers estimated that more than 1,000 new products and services were on display during the show. Among the new features was a Platinum Lot for asphalt production/paving, aggregate processing and drilling equipment, a Demolition & Recycling Exhibits Pavilion sponsored by the Construction Materials Recycling Association and a Technology & Construction Solutions Pavilion from the Associated General Contractors of America. The Power Transmission Distributors Association also had an exhibit pavilion for sensor manufacturers and product suppliers.

CONEXPO introduced a campaign aimed at raising awareness of the construction industry's accomplishments, publicizing the positive benefits of construction projects and how they can elevate the nation's quality of life. Many projects were nominated, and 50 were recognized during an Innovation Awards

Program and a special "Young Leaders in Construction" event.

Record numbers for educational seminars

CONEXPO-CON/AGG sold a record 41,000 tickets for the educational program seminars, which consisted of 120 sessions that covered 10 targeted tracks, including aggregates, asphalt, concrete, crane and rigging, earthmoving and site development, equipment management and maintenance, business management best practices, work force development, recycling, and preservation and safety. IFPE offered half day "college-level courses," and a new Fluid Power Seminar series.

"The enthusiasm and traffic on the show floor was just incredible," said Megan Tanel, CONEXPO-CON/AGG Show Director. "Exhibitors cited the high quality of attendees; they told us these were serious buyers and reported robust sales, to existing as well as new customers, that exceeded their expectations."

CONEXPO-CON/AGG is slated to return to Las Vegas in 2017. Other upcoming shows include MINExpo, which runs September 26-28, 2016, at the Las Vegas Convention Center. ■

ReMarketing, Komatsu CARE, parts and other information was available within Komatsu's display area.



TIME GROWING SHORT

Current surface transportation bill expires, Highway Trust Fund to run dry this fall

Within months, the current surface transportation bill (MAP-21) will expire. Passed during the summer of 2012, the 27-month legislation funded highway, bridge and other transportation needs through September 30 of this year. Around the same time, the Highway Trust Fund will be depleted.

“The Highway Trust Fund, which is perennially teetering on the edges, is still teetering on the edges,” Transportation Secretary Anthony Foxx recently told the U.S. Conference of Mayors at its annual meeting. “We’re currently on track today to go upside down before the fiscal year that we’re in concludes. It’s a serious problem, not only because of the math, but also what it does at the state and local levels.”

Money for the Highway Trust Fund comes from the 18.4-cent federal gas tax, which has not risen since 1993. Cost of materials and other project expenses rose during that time, leading to funding shortfalls and borrowing from the general fund to make up the difference. MAP-21 provided about \$54 billion in annual spending for road projects, while the gas tax took in about \$35 billion. Transportation organizations continue to push lawmakers for new sources of funding, adding that \$54 billion is only enough to cover maintenance.

An October 2013 report from the transportation research group TRIP said 27 percent of the nation’s major urban roads are substandard. An equal percentage of roads are mediocre, 15 percent are fair and 31 percent are good. The American Society of Civil Engineers (ASCE) graded America’s roads a D as part of its 2013 Infrastructure Report Card. State, local and federal investment totals about \$91 billion annually. The Federal Highway Administration says it would take nearly double that, \$170 billion,

to make significant improvements. A similar scenario is needed for bridges (\$20.5 billion needed vs. \$12.8 billion currently). ASCE gave those a C+, noting that one in nine is structurally deficient.

U.S. Representative Earl Blumenauer, D-Ore., recently announced two bills aimed at trying to fill the gaps. One would raise the gas tax by 15 cents over a three-year period and index the future tax to inflation. He projects this would increase revenue by about \$170 billion after 10 years. A second bill proposes studying an alternative to the tax with pilot projects aimed at charging fees for vehicle-miles traveled. Other individuals and committees in both the House and Senate are studying funding means.

“We see signs of progress,” Foxx told the Council, adding, “Part of what I hope we can do at the DOT is to help our country, help everyone, all of our stakeholders, think past our noses as we think about how this transportation system has to be built.” ■

The current highway bill expires at the end of September, and the Highway Trust Fund is expected to go into the red around that time. Transportation Secretary Anthony Foxx said he sees signs of progress toward legislation that would help.



KEEP ALL OPTIONS OPEN

Report highlights HTF shortfall, need to find alternative revenue streams



Christian Klein,
AED Vice President
of Governmental
Affairs

In February, the Congressional Budget Office (CBO) updated its biannual projections of the Highway Trust Fund (HTF) cash flow, estimating that the HTF will run out of money before MAP-21, the 2012 highway funding bill, expires on September 30, 2014.

The CBO also said that HTF revenues (gas tax, diesel tax, etc.) will fall more than \$100 billion short of the amount needed just to keep annual highway investment at current levels (roughly \$40 billion) over the next six years.

The CBO analysis confirms the findings of last year's Associated Equipment Distributors (AED) study on the HTF. The 2013 study, which was commissioned by the association and conducted by researchers at William and Mary's Thomas Jefferson Program in Public Policy, found that the HTF deficit will amount to \$365.5 billion by 2035. The report also proposed bold solutions:

A Congressional Budget Office (CBO) projection estimates the Highway Trust Fund will run out of money before MAP-21, the 2012 highway funding bill, expires on September 30, 2014. AED is encouraging lawmakers to keep options open regarding increased revenues and solid solutions to long-term HTF funding.

increasing the gas tax to 25 cents per gallon and indexing it for future inflation, which would raise \$167 billion more than current baseline spending requirements during the next two decades.

"The CBO report is no surprise," said AED Vice President of Government Affairs Christian Klein. "This is just another in a series of countless wake-up calls about the highway funding crisis. Unfortunately, lawmakers are continuing to hit the snooze button. That simply can't continue. There's too much at stake for the economy and the construction industry."

As the newest CBO numbers indicate, it is vital that our nation's leaders act now to maintain the HTF's solvency. House Transportation & Infrastructure Chairman Bill Shuster, R-Penn., stated he would not pursue a federal gas tax hike and would instead favor a vehicle-miles traveled (VMT) fee to support the federal highway program in the upcoming highway reauthorization debate.

A VMT fee has been studied at the state level, and most experts agree that the best long-term solution for the HTF is to tie revenue to road usage, not fuel consumption. But it is unclear how such a federal program would be structured given privacy concerns. Experts also point out that it would take considerable time to implement a VMT system and that money wouldn't start flowing in quickly enough to address the HTF's immediate needs.

AED commends Chairman Shuster for proposing options to ensure the HTF's long-term solvency and also believes all options must remain on the table to ensure our nation's transportation networks have the resources they need to create jobs, grow the economy and ensure America's competitiveness for generations to come. ■



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- Enhanced operator environment improves comfort and machine control.
- Komatsu CARE provides complimentary Tier 4 maintenance, including KDPF exchange filters. Contact your Komatsu distributor for details.

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KOMATSU EXPANDS DOZER LINEUP

Three new *intelligent Machine Control* dozers provide automatic blade control from the first pass to the last



Peter Robson,
Director,
Intelligent
Machine Control

Komatsu introduced *intelligent Machine Control* (iMC) to the dozer market about a year ago with its innovative D61i-23 model that features fully automatic blade control from rough-cut to finish grade. It's now expanded the lineup with three new dozers – a D51i-22, a D39i-23 and a D37i-23.

All iMC dozers are available in longer track-on-ground standard EX and low-ground-pressure PX versions, which offer flotation and weight distribution options that best match user applications.

“These new dozers feature the same *intelligent Machine Control* technology that made the Komatsu D61i-23 such a success,” said Peter Robson, Director, Intelligent Machine Control. “With the

same slant-nose and cab-forward design, they provide excellent visibility to the blade and all around the machine for superior operator productivity. The simple operation, efficiency improvements and greater value reflect the quality that customers expect from Komatsu.”

Like the D61i-23, the new iMC models feature fully automatic blade control from initial rough-cut to finish grade. As they travel around the jobsite, the dozers measure actual elevations, which provide accurate surface data. A stroke-sensing angle cylinder measures the actual angle of the blade for high-precision grading accuracy on cross-slope, whether the blade is angled or not. The iMC models are significantly more efficient compared to conventional aftermarket machine-control systems, depending on factors such as operation and conditions.

“During rough cut, if the system senses the blade has excess load, it automatically raises the blade to minimize track slip and maintain forward momentum,” said Robson. “The blade also automatically lowers to push as much material as possible, so it's designed to maximize production under all situations.”

Operators can select different dozing modes, which tailor the system response to the machine operation, and therefore, optimize performance. Operators can also adjust the blade-load settings to match actual material conditions for added efficiency.

Eliminating the three Cs

Unlike traditional GPS systems, Komatsu's iMC dozers' machine control system components are factory-integrated,

Komatsu's original slant-nose-design dozer is now available in an *intelligent Machine Control* D51i-22 model, along with Tier 4 Interim D39i-23 and D37i-23 machines.





Komatsu's *intelligent Machine Control* lineup now features four models, including the new D39PXi-23. All have integrated technology that provides automated grading from rough-cut to finish grading.

eliminating the need for masts and cables. A Global Navigation Satellite System antenna is mounted on top of the cab. Additional components include robust stroke-sensing hydraulic cylinders, an enhanced inertial measurement unit with monitor and a controller mounted inside the cab.

"The integrated system reduces maintenance costs as well as risk," said Robson. "Masts are not out on the blade and cables aren't dangling between the blade and the cab, so the chance of damage or theft is eliminated. Personnel don't have to spend time removing and reinstalling those components every day, which increases production. Finally, no one is climbing on the machine or blade to install and remove the mast and cables. We've eliminated the three Cs: cables, climbing and connections.

"We were excited to bring Komatsu's *intelligent Machine Control* technology to the market last year, and the overwhelmingly positive response from our customers

Brief Specs on Komatsu *intelligent Machine Control* dozers

Model	Horsepower	Operating Weight	Blade Capacity
D37EXi-23	89 hp	18,872 lbs.	2.5-2.78 cu. yd.
D37PXi-23	89 hp	19,533 lbs.	2.5-2.78 cu. yd.
D39EXi-23	105 hp	20,922 lbs.	2.5-2.78 cu. yd.
D39PXi-23	105 hp	21,848 lbs.	2.5-2.78 cu. yd.
D51EXi-22	130 hp	27,381 lbs.	3.5-3.80 cu. yd.
D51PXi-22	130 hp	29,057 lbs.	3.5-3.80 cu. yd.
D61EXi-23	168 hp	39,441 lbs.	4.5-5.1 cu. yd.
D61PXi-23	168 hp	41,381 lbs.	4.5-5.1 cu. yd.

pushed us to quickly expand this family of crawler dozers," added Robson. "All of the intelligent dozers provide excellent and efficient production in residential, commercial, road building, landscaping and other applications. Customers just have to decide which size or sizes best fit their business." ■

Continued . . .

iMC dozers eliminate cables, climbing and connections

... continued

Customers impressed with innovative D61i-23

Komatsu took dozing to a new level when it introduced its first *intelligent Machine Control* (iMC) dozer, the D61i-23, about a year ago. Unlike traditional GPS add-on systems that are typically used for finish grading, the D61i-23 provides automatic dozing from rough-cut to final pass with an integrated system that eliminates masts and cables.

During rough dozing, the automatic blade control monitors the blade load and adjusts the blade elevation to minimize track slip for highly efficient dozing. Closer to finish grade, automatic blade control adjusts accordingly to provide finish-grade performance with high-level precision. The intelligent machines are significantly more efficient compared to machines using add-on control systems.

"It definitely saves us time," said Andy Smith, Operations Manager of Sellers Contracting Services, LLC. "The operator doesn't have to worry about how deep he's cutting. He's not moving his arm up and down trying to control the blade, because the machine does it all for him. From our experience, the accuracy has been dead-on. We've had projects where surveyors check behind us on building pads and even

roadways, and it's always been extremely accurate."

Aspen Construction rented a D61i-23 during a road reconstruction project that involved rough cutting heavy peat and placing about 76,000 tons of road base once subgrade preparation was done.

"It powered through the tough materials with minimal track slip, and did a perfect job during the finish portion of placing the road base," said Aspen Construction Estimator/Project Manager Ryan Blank. "It was an amazing machine. We loved it."

Todd Sattler, Superintendent of CL Trucking, likes the accurate grading and the integrated system.

"The biggest advantages with an integrated machine over a bolt-on application are: safety, because no one is climbing on a machine; cost savings, because we won't have broken wires or damaged parts; and time savings, because the time for setup, teardown and redesign on each jobsite is gone," said Sattler. "Now we're able to move the machines around, integrate them quickly to a new jobsite and change operators frequently without any production loss." ■



Komatsu introduced its *intelligent Machine Control* (iMC) dozer line with the D61i-23 about a year ago. It provides automatic blade control from rough-cut to final pass, with an integrated GPS system that eliminates masts and cables.

Innovative. Intelligent. Integrated.



D61i-23

Next Generation Machine Control

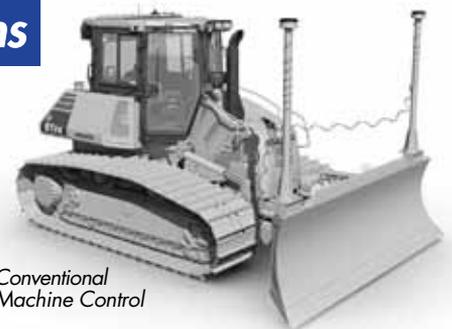
No Masts

No Cables

No Connections

Factory installed Intelligent Machine Control — standard on the new D61i-23. Automated dozing — 1st to last pass with finish grade performance. Intelligent blade assistance minimizes track slip and improves efficiency.

Komatsu — Customer driven solutions.



Conventional
Machine Control



Scan here to see the video.

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NEW “BRIDGE” EXCAVATOR

Komatsu PC88MR-10 bridges the gap between compact- and construction-size machines



Rob Orłowski,
Product Manager,
Excavators

The curtain has dropped on Tier 4 Final, and Komatsu opened its show with a new PC88MR-10 excavator that provides power and production in both open-area and confined-space applications. It has a nearly 10-percent increase in operating weight compared to the previous model.

“Our PC88 remains popular because it is a productive, dependable and efficient machine in construction, utility and landscaping applications,” said Rob Orłowski, Product Manager, Excavators. “It’s a ‘bridge machine’

between compact and construction-size excavators. It works equally well digging close to a building or in a lane of traffic as it does digging a utility line or a foundation without obstructions. In a variety of applications, it maintains excellent lift capacity and stability.”

The PC88MR-10 provides a maximum digging depth of 15 feet, 2 inches and a maximum reach of 23 feet, 5 inches. A swing boom allows for work in confined spaces, letting the operator focus on tasks in the front with less worry about counterweight impacts.

Improved versatility and productivity

A new Operator Identification System records and reports key operating information, so owners and equipment managers can more easily track individual operator performance. Operators simply enter a personal ID into the 7-inch, high-resolution monitor that features enhanced capabilities such as an adjustable Auto Idle Shutdown function that helps reduce idle time and operating costs.

Operators have six working modes to match hydraulic power to the job for even greater efficiency. Standard auxiliary flow can be changed to bidirectional for attachment flexibility, and a new enhanced attachment control lets users store up to 10 attachments in the monitor.

“We took what was already a great machine and made it even better with enhancements that can reduce owning and operating costs through increased efficiencies,” said Orłowski. “We believe individuals who need a compact excavator that provides powerful performance in a variety of tasks will find the PC88MR-10 a great fit for their businesses.” ■

Quick Specs on the Komatsu PC88MR-10

Model	Horsepower	Operating Weight	Digging depth
PC88MR-10	65.5 hp	18,739-19,290 lbs.	15 ft., 2 in.

Komatsu’s new Tier 4 Final PC88MR-10 provides powerful performance in both confined-space and open applications. The tight-tail-swing design works well on construction, landscaping, utility and other excavating jobs.



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**IDLING IS
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**WASTES
FUEL**

**RUNS UP
HOURS**



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The WA380-7 Tier 4 Interim Wheel Loader is a class leading performer with improvements in production, fuel efficiency, operator comfort and serviceability.

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- New 7" LCD multi-function monitor panel provides easy access machine diagnostics.
- Komatsu CARE provides complimentary Tier 4 maintenance, including Komatsu Diesel Particulate Filter exchange. Contact your Komatsu distributor for details.

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MEASURING SUCCESS

VP: Building machines that help customers achieve their goals is what it's all about

QUESTION: Tier 4 Final implementation begins this year. How will you measure these machines' success?

ANSWER: The same way we have with all new tier-level products. First and foremost, that means the machines meet the environmental standards without sacrificing what customers have come to expect from Komatsu equipment: efficiency, production and reliability. Komatsu strives to design and manufacture machines that maintain or improve productivity with increased fuel efficiency at each new level. Our testing indicates the Tier 4 Final machines will continue that trend.

QUESTION: You went beyond the machine. Why?

ANSWER: New regulations bring trepidation to the customer because of the unknown that comes with them. The machines needed additional components and systems to reduce emissions, especially with Tier 4 Interim, which caused concern. To ease those concerns, we introduced Komatsu CARE, a program that provides complimentary scheduled maintenance for the first three years or 2,000 hours, along with two Komatsu diesel particulate filter changes in the first five years. We wanted customers to have every confidence that we stand behind the machines and our technology, plus make their lives easier. The response remains great, and we recently completed the 10,000th service interval under Komatsu CARE, which will continue with Tier 4 Final.

QUESTION: How did you know that customer concern was there?

ANSWER: Because one of our greatest strengths is listening to customers in the field.

Continued . . .



Rich Smith,
VP ICT Business Division
and Product Marketing

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.

In May of 2013, Rich Smith became the Vice President ICT Business Division and Product Marketing for Komatsu's Construction Division. His responsibilities include planning and marketing new products and technologies such as *intelligent Machine Control* (iMC) products and KOMTRAX. He held a similar position in the Mining Division prior to his current role.

Smith is a Peoria, Ill., native and began his Komatsu career on the company's Peoria Manufacturing Operation's (PMO) shipping docks 24 years ago. Komatsu manufactures and ships mining products worldwide from PMO, and Smith gained a wide range of experience working both at and for the plant. He eventually moved into the field as a Technical Support Manager, Regional Service Manager and Field Service Manager, before moving into Product Marketing.

"I grew up in Komatsu; I ran forklifts and cranes, assembled machines and was a CNC machinist," Smith recalled. "From the factory floor, I moved into warranty and contract administration. While most of my career has been on the mining side, I worked with construction as well. Komatsu has allowed me to gain a very well-rounded background. I have been fortunate to have worked with knowledgeable people in a great company. Despite the differences between the two divisions, the desire for customer success remains the top priority of everyone at Komatsu."

Rich returned to school as an adult, while continuing to work full time, to complete a double major. "I believe it was important for me to finish what I started, as well as set an example that education remains valuable at any age," said Smith. "The opportunity to learn and work to personally improve at Komatsu is greatly appreciated."

Customers continue to drive new innovation, features

... continued



Komatsu Vice President ICT Business Division and Product Marketing Rich Smith says customers helped develop ideas such as its *intelligent Machine Control* dozers, which provide automated grading from rough-cut to finish grade.

The next evolution of hybrid technology is on the horizon, including the third-generation Hybrid HB215LC-2 excavator, according to Rich Smith.



How can we manufacture equipment that meets their needs if we don't communicate with them? That interaction is invaluable and has driven such initiatives as our KOMTRAX Mobile App, which brings critical machine data to a smart phone or other device. Customers are more mobile than ever, and they want that information at their fingertips. Much of the information that's part of the KOMTRAX Mobile App today came from customers' suggestions. The system has evolved from the basics, such as error codes and hours, to a comprehensive tool with idle times and operational characteristics.

Customers also helped to develop ideas such as our "i" or intelligent machines. While traditional aftermarket GPS grading systems are good, we saw room for improvement, including taking away the masts and cables that can get damaged and have to be taken down and put back up every day. The GPS systems are also designed only for automated finish grading, and customers wanted that benefit from start to finish without the costs associated with maintaining masts and cables. We delivered an integrated system that makes every pass count and works for even the most inexperienced operator. Then, we took it a step further and made sure the dozers have an optimal blade load with minimal track slip, so the added efficiency was built-in. The results and response have been phenomenal.

Again, Komatsu in cooperation with our Distributors, took it beyond the machine by adding Technology Solutions Experts. These highly trained individuals ensure customers get the most out of the intelligent machines, from initial set up to choosing the proper modes for maximum efficiency.

QUESTION: What's on the horizon?

ANSWER: Looking ahead, we see the next evolution in hybrid technology. We were the first to manufacture a hybrid excavator, and soon we'll introduce our third-generation machine. Our customers will continue to guide us – ultimately, we're in the customer success business. In order for them to be successful, we have to make machines that meet their standards. That's what it all comes down to. ■

TIER 4 FINAL IS HERE

New machines improve efficiency while maintaining Komatsu's strong work ethic

A little more than 20 years ago, the government introduced standards designed to reduce emissions through "tier" levels. Each tier brought a new step toward the ultimate goal of reducing particulate matter (soot) and oxides of nitrogen (NOx) to near zero. Tier 4 Final begins this year, and manufacturers are now producing the first wave of machines to meet this new standard.

"Komatsu met each tier-level challenge head-on; in fact, it met or exceeded the standards," said Bruce Boebel, Senior Product Manager, Tracked Products. "In most cases, Komatsu also improved power, production and fuel efficiency at every level."

The biggest challenge came with the jump from Tier 3 to Tier 4 Interim, which required a 45-percent reduction in NOx and a 90-percent reduction in soot. It also required the use of ultra-low-sulfur diesel, emissions filters and Tier 4 specific engine oil. Tier 4 Final requires an additional 80-percent drop in NOx.

"Fluid neutral or better"

Komatsu is using a selective catalytic reduction (SCR) system and AdBlue®/DEF (diesel exhaust fluid), which is a mixture of urea and deionized water, to meet the Tier 4 Final regulations to reduce NOx on machines with 75-horsepower engines and above. The SCR system works by injecting AdBlue®/DEF into the exhaust stream as required. AdBlue®/DEF works with the heat of the exhaust and a catalyst to convert NOx into harmless nitrogen and water vapor that expels out of the exhaust pipe. The SCR system is located next to the Komatsu Diesel Particulate Filter, which Komatsu introduced in its construction machines during Tier 4 Interim.

Additional components include NOx and ammonia sensors, a mixing tube and a dosing nozzle.

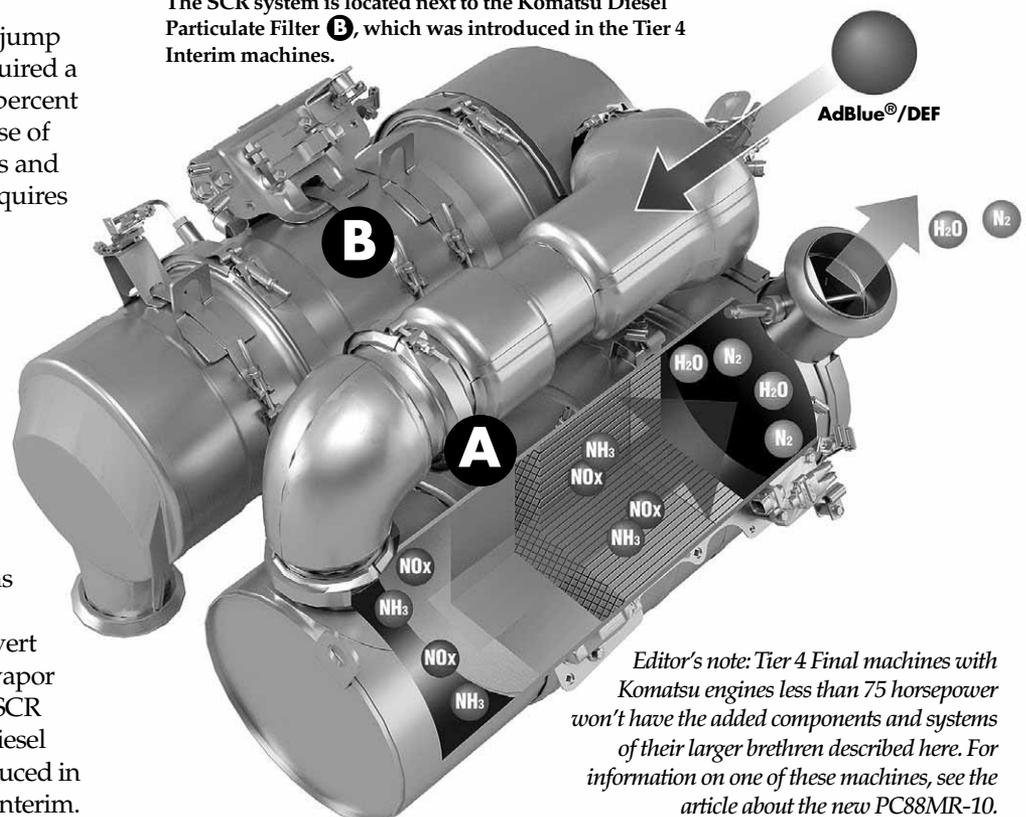
"SCR technology provides better fuel economy than previous models because it treats the exhaust gases outside the engine, uses less exhaust gas recirculation and employs advanced injection timing," said Boebel. "Reducing fuel

Continued . . .



Bruce Boebel,
Senior Product Manager,
Tracked Products

The selective catalytic reduction (SCR) system **A** uses AdBlue®/DEF (diesel exhaust fluid) to turn emissions such as NOx into harmless water vapor and nitrogen. The SCR system is located next to the Komatsu Diesel Particulate Filter **B**, which was introduced in the Tier 4 Interim machines.



Editor's note: Tier 4 Final machines with Komatsu engines less than 75 horsepower won't have the added components and systems of their larger brethren described here. For information on one of these machines, see the article about the new PC88MR-10.

“The harder you work them, the better they perform.”

... continued

consumption becomes more significant when you consider that nearly every Tier 4 Final machine across almost all manufacturers requires the use of AdBlue®/DEF. In most cases, with Komatsu equipment, customers are going to use about 2 percent of AdBlue®/DEF compared to diesel fuel.

“When you factor in the fuel efficiency of Tier 4 Final machines, the 100 gallons of fuel burned would be at most 98 gallons,” Boebel added. “So, even with two gallons of AdBlue®/DEF, we’re ‘fluid neutral or better,’ which was our goal. In some models, fuel efficiency will be considerably better than neutral. And, since AdBlue®/DEF costs less than diesel fuel, overall fluid cost is reduced in all models.”

AdBlue®/DEF tank added

Komatsu added an AdBlue®/DEF tank, along with a supply module that pumps AdBlue®/DEF into the SCR system. The tank is vented with a replaceable filter to reduce contamination. It also has sensors to show levels, temperature and fluid quality, as well as an intake suction screen. Komatsu sized the tanks to go a minimum of two fillings of the fuel tank.

“Customers should always use certified AdBlue®/DEF, which meets the ISO 22241 standard and is readily available throughout North America,” said Boebel. “When filled, tanks leave about 10 to 15 percent air space for expansion, in case its fluid freezes. Komatsu

built the AdBlue®/DEF system so that the lines purge the

fluid back into the tank when a machine is shut down, to help prevent the lines from freezing. Our tank is coolant-line heated, so a completely frozen tank will flow in about 40 minutes, which is about half the time the EPA mandates.

“At the other extreme, high temperatures shorten the life of AdBlue®/DEF,” he added, “So, we created an automatic bypass valve that turns off the heated coolant line.”

Hard workers

A monitor on a Tier 4 Final machine shows the AdBlue®/DEF level and alerts users to inferior-quality fluid. Another new feature on Tier 4 Final equipment allows operators to input an identification number, so equipment managers can track specific users via KOMTRAX®.

“These new components are add-ons to the already-comprehensive list of items customers can track through KOMTRAX® on their computer or mobile devices,” said Boebel. “As with our Tier 4 Interim equipment, Komatsu and our distributors monitor these new machines through KOMTRAX®, so certified technicians can perform complimentary scheduled service under the Komatsu CARE program. Tier 4 Final machines have a few added maintenance items, and the program has expanded coverage.

“With each tier level, Komatsu made improvements, and these machines are no exception,” Boebel added. “The Interim level gave us a very solid foundation from which to work and build. We took those reliable, productive and efficient improvements and enhanced them. For instance, we reduced the exhaust gas recirculation rate and advanced engine timing to provide more complete fuel burn and lower PM. In one example, we slightly tweaked the Komatsu Variable Geometry Turbocharger, providing even faster ramp-up speed and response.

“Like all our previous models, the new Tier 4 Final machines are made to work hard,” he added. “In fact, the harder you work them, the better they perform.” ■

Komatsu introduced several new Tier 4 Final machines at CONEXPO, including the HM300 articulated dump truck.



MORE INDUSTRY NEWS

Simonson: Jobs to increase, worker availability a problem

The construction industry looks like a good news/bad news scenario in 2014 with more projects to bid, but increased concern over labor availability, according to Associated General Contractors' Chief Economist Ken Simonson. He noted that spending was up 5 percent from November 2012 to November 2013, and expects a 10-percent increase this year.

Simonson sees a double-digit rise in power, manufacturing, lodging and warehouse construction. He expects the same for apartment construction, which will help the private residential market grow by 10 percent

or more despite his prediction that single-family home building will stall late this year.

While the construction unemployment rate dropped 10 percent year-over-year in 2013, the industry still has a shortage of available workers. Many left the industry during the recession and haven't come back. "Contractors will likely have to spend more on wages, benefits and bonuses," said Simonson. "Firms that find the additional workers they need may have to increase their payment of overtime wages. As a result, employers' costs for employee compensation...will probably go up 3 to 4 percent in 2014, compared with a 2.1-percent rise from the third quarter of 2012 to the third quarter of 2013." ■

Transportation not hit by new budget deal in FY 2014

Federal surface transportation programs are not significantly impacted by the budget deal passed earlier this year and signed into law, according to the Associated Equipment Distributors. The bipartisan agreement sets spending for Fiscal Years 2014 and 2015.

Funding for the Transportation and Housing and Urban Development Departments is nearly

\$51 billion for FY 2014. It places a \$53-billion cap on transportation contract authority for spending on highways, mass transit and airports.

Transportation funding for FY 2015 remains up in the air as the current highway bill expires at the end of September, and without action, the Highway Trust Fund will run out of money at that time. ■

Use of warm-mix asphalt, RAP, RAS continues climb

The most recent survey from the National Asphalt Paving Association (NAPA) shows a 416-percent increase in the use of warm-mix asphalt since the organization first questioned users about its use in 2009. NAPA surveyed more than 1,100 asphalt plants, finding that they produced about 86.7 million tons of the product in 2012, the latest construction season it measured.

Warm-mix uses less energy to produce compared to traditional mixes, because

the asphalt is made at a lower temperature, which results in reduced emissions, improved worker safety and other benefits, according to NAPA.

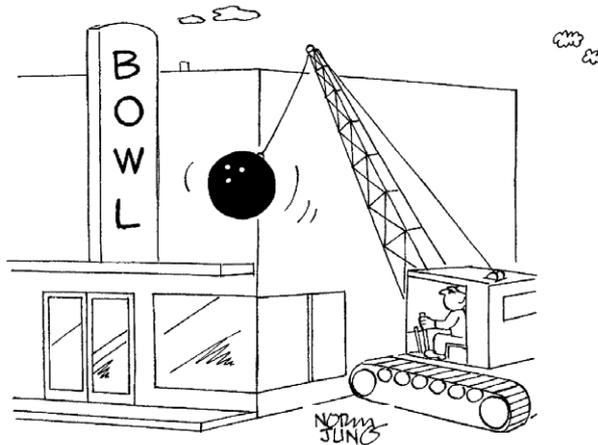
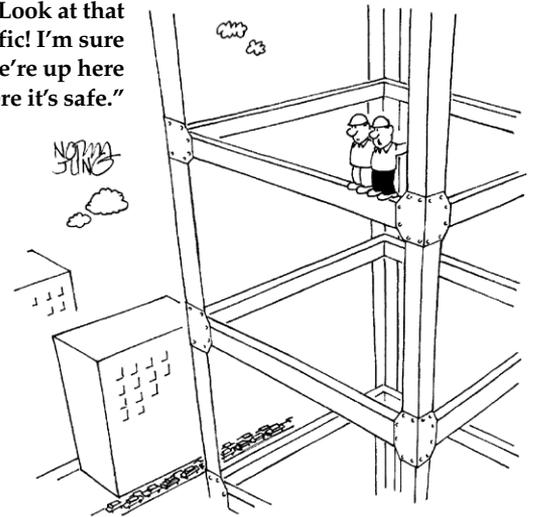
NAPA's survey also found that more than 68 million tons of reclaimed asphalt pavement and nearly 2 million tons of recycled asphalt shingles were part of new pavement mixes. This is the first time since the survey started that the amount of those materials used exceeded the amount collected. ■

SIDE TRACKS

On the light side



"Man! Look at that traffic! I'm sure glad we're up here where it's safe."



Did you know...

- The last song that Elvis performed publicly was "Bridge Over Troubled Water," which he sang at his final concert in Indianapolis in June 1977.
- California's Frank Epperson invented the Popsicle in 1905 when he was 11.
- On average, 150 couples get married in Las Vegas each day.
- The linen bandages that were used to wrap Egyptian mummies were approximately 1,000 yards in length.
- Hawaii is the only U.S. state that grows coffee.
- New Orleans' first Mardi Gras celebration was held in February 1826.
- James Madison, 5 feet 4 inches tall, was the shortest U.S. president. Abraham Lincoln was the tallest at 6 feet 4 inches.
- A "jiffy" is an actual unit of time measuring 1/100th of a second.
- Americans eat more bananas than any other fruit: a total of 11 billion a year.

Brain Teasers

Unscramble the letters to reveal some common construction-related words. Answers can be found in the online edition of the magazine at www.CECPushingAhead.com

1. G D I _ _ _ _
2. N R I O _ _ _ _
3. M P P U _ _ _ _
4. N T U I A C O A _ _ _ _
5. D Y I R L E C N _ Y _ _ _ _ R

COMPLIMENTARY TIER 4 SERVICES



Komatsu CARE for Komatsu Tier 4 Interim models is a new, complimentary maintenance program designed to lower your cost of ownership and improve your bottom line. It provides factory-scheduled maintenance on the machines for the first three years or 2,000 hours, whichever comes first. This includes up to two exchange Komatsu Diesel Particulate Filters. Be sure to contact your Komatsu distributor for all the details.

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