

ROAD TO SUCCESS

ROAD MACHINERY

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A PUBLICATION FOR AND ABOUT ROAD MACHINERY LLC CUSTOMERS

BORDERLAND CONSTRUCTION COMPANY INC.

Tucson contractor tackles tough, challenging work head on



(L-R) Vice President Andy North, CEO Morgan North and President Steve Shepherd



CALIFORNIA WASTE SERVICES

Komatsu equipment dealer helps Los Angeles area C&D recycler grind through volumes of material



Eric Casper, President

A MESSAGE FROM ROAD MACHINERY



Sloan Brooks



Dear Valued Customer:

We look forward to the upcoming CONEXPO-CON/AGG, the world's premier construction exposition. As always, the triennial event is expected to be bigger and better than ever as manufacturers unveil the latest and greatest in equipment and technology.

Once again Komatsu will showcase the innovative products and support capabilities that make it the world-class leader in construction equipment. This issue of your Road Machinery Road to Success features a preview of the show with information about Komatsu's display areas. We hope to see you March 7-11 in Las Vegas.

Of course, our other manufacturing lines will prominently display products at CONEXPO-CON/AGG as well. If you attend the show, we highly encourage you to stop by their booths, too. We know you will enjoy visiting with them and seeing what they have to offer.

Komatsu continues to introduce new Tier 4 Final machines that increase your production and efficiency, and you can read about several of them inside as this issue highlights the broad range of equipment our leading manufacturer produces. There are articles on a new dozer, wheel loader, truck, excavator and more.

Thoughts of CONEXPO-CON/AGG have us looking forward to what we hope is a great 2017 construction season for you. If you are interested in any of the machines featured here, or ones you see in Vegas, let us know.

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

Sincerely,
ROAD MACHINERY LLC

A handwritten signature in black ink, appearing to read "Sloan Brooks".

Sloan Brooks
President & COO

**It's
showtime**



ROAD TO SUCCESS



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See why this Los Angeles-area C&D recycler depends on Komatsu equipment to stand up to challenging work conditions.

HANDS-ON EXPERIENCE

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INDUSTRY EXTRAVAGANZA

Preview CONEXPO-CON/AGG 2017, which is set to showcase innovative products that will shape the future of the construction industry.

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Discover the reasons why one information technology professional believes that funding for digital infrastructure projects is lacking in the United States.

PRODUCT INNOVATION

Komatsu's D155AXi-8 RC dozer offers high productivity through a combination of radio operations and *intelligent* Machine Control. Find the details inside.

PRODUCT NEWS

Check out how the PC138USLC-11 excavator supplies a productive punch on today's jobsites.



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BORDERLAND CONSTRUCTION COMPANY INC.

Tucson contractor tackles tough, challenging work head on

Morgan North spent many years on the road working for a construction firm. He had a young family then and wanted to spend more time at home.

"I decided to start my own company, but I didn't have a lot of contacts, so that business failed," recalled Morgan, Owner and CEO of Borderland Construction Company Inc. "I went to work for another company, which also went out of business. Then I started Borderland, but this time I had contacts I could call on and a group of fellow employees who were willing to join me."

That was 1982, and it marked the start of Borderland Construction. With a list of potential customers and approximately 25 experienced people on board, the business took off quickly. Today, the firm employs nearly 300 people, including original employee Steve Shepherd, who is President of the Tucson-based company. Morgan's son, Andy, is Vice President.

"We hit the ground running with four or five jobs right off the bat," recalled Steve. "Our customers gained confidence in our ability to meet their schedules and budgets, and we garnered a long list of repeat business. Early on, most of our projects involved subdivision site work, but

we soon diversified into public and commercial contracts."

Diverse projects, customers

While Borderland Construction is one of the largest underground contractors in Arizona, it also performs general grading and paving. Its services include land clearing, mass excavation, concrete curb and flatwork, as well as bridge construction. Borderland's utility work involves installation of water and wastewater systems, storm drains and underground power. The company typically operates in a 100-mile radius of Tucson and usually has between 10 and 15 projects in the works at a time.

"Our diversity means we can provide turnkey site packages as well as break-out services, such as strictly excavation or utility jobs," explained Andy. "There is diversity in our customer list, too. We work with everyone from developers to municipalities to international corporations serving residential, commercial, governmental and industrial markets."

Some of Borderland's biggest projects fall into the underground category. It recently started pre-construction services for a \$40 million sewer-line job for Pima County that involves installation of 13 miles of 24- to 30-inch pipe at depths of up to 35 feet.

"Throughout the years we've completed numerous large, complex underground installs," said Andy. "That includes pipe as well as 10- to 12-foot wide precast box culverts at depths of greater than 30 feet. Few companies are willing to do those jobs, but we thrive on them. One area where we shine is finding cost ways to value-engineer such projects to provide cost savings without sacrificing safety or quality."

Best fit, versatile equipment

Borderland Construction often accomplishes deep utility digs with its 651-horsepower Komatsu PC1250 excavator, which the company

The management team at Borderland Construction includes (L-R) Vice President Andy North, CEO Morgan North and President Steve Shepherd. The Tucson-based firm is one of the largest underground contractors in Arizona, and it also performs general grading and paving.





▶ VIDEO

Superintendent Conrad Camora digs a trench with Borderland Construction's Komatsu PC490LC-10 excavator on a jobsite near Tucson. "The PC490 has good power," said Camora. "I like that it doesn't get hung up on the hard caliche we sometimes dig in."

uses for mass excavation. Borderland employs PC490LC-10 excavators for shallower trenches. The company's work often involves pavement removal or rock excavation, and it sometimes crushes that material on-site with a Komatsu BR380JG mobile crusher.

"We purchased the PC490s approximately a year ago to replace some aging pieces," recalled Morgan. "They were equivalent in size to what we had, but offered better performance and greater efficiency. After shopping around, we chose the Komatsu PC490s because they were the best fit and the right price. Each runs several different sized buckets, so we get versatility."

"The PC1250 is probably the largest excavator in this area," he added. "It's a workhorse and ensures that we can complete the tough, challenging tasks, including lifting heavy pipe and structures. The crusher has been a really nice piece for us, helping us produce quality products that can be reused on the jobsite."

Borderland Construction purchased its Komatsu equipment from Road Machinery, LLC with the help of Territory Manager Dennis Peterson. "Road Machinery covers the scheduled service on the PC490s under Komatsu CARE, which is a great program," said Morgan. "We typically do a lot of our own maintenance, so Komatsu CARE is a time- and cost-saver because our mechanics can concentrate on our older machines. This program fits right in with the good service we consistently receive from Dennis and Road Machinery. They have always been there if we need something."



▶ VIDEO

Always a market leader

While Morgan remains active in Borderland Construction, Andy and Steve largely oversee the day-to-day operations. They say the company's future is highly dependent on Tucson's economy. During the Great Recession a few years ago, times were tough, and subdivision work dried up for the most part. Today, business is better, but has not completely rebounded to where it was before the downturn.

"We became a lot leaner and most of our jobs fell into the public sector, but the company survived," noted Steve. "Our work is once again nearly an even split between public and private. Nothing is certain for the future, except what we can control and that's providing quality work. No matter what, we will continue to be a leader in the markets we serve." ■

(L-R) Andy North, Morgan North and Steve Shepherd of Borderland Construction meet with Road Machinery Territory Manager Dennis Peterson. "We receive great service from Dennis and Road Machinery," said Morgan. "They have always been there if we need something."



CALIFORNIA WASTE SERVICES

Komatsu equipment dealer helps Los Angeles area C&D recycler grind through volumes of material



Eric Casper,
President

In a city the size of Los Angeles, the landscape is ever-changing. That often means demolishing old buildings and other structures to make way for new construction, which creates a steady stream of materials for companies like California Waste Services.

Located in Gardena, in the central-Los Angeles metropolitan area, the company has handled large volumes of construction and demolition debris since 1999. President Eric Casper estimates that approximately 70 percent of the materials come from outside contractors bringing loads to its facility. California Waste Services' roll-off trucks, which pick up at customers' locations, bring in the balance.

"More than 95 percent of what comes to the yard is mixed, so the first step is to do an aggressive kick-sort at the point where it's dumped. This removes items that can't be recycled as well as what I don't want presented to the line-sort, such as carpet, insulation or plastic

sheeting," said Casper. "Those items that can be recycled are pushed into a pile with a Komatsu WA470 wheel loader to feed a Komatsu PC210LC excavator, which, in turn, goes to a construction and demolition (C&D) sort line."

Cardboard and metals are typically shipped overseas. Drywall goes to California's Central Valley where it is mixed with manure for fertilizer. Wood is separated into two types: clean and contaminated. The former is used for landscape mulch, the latter for cogeneration fuel.

"Our entire business is centered around landfill avoidance because burying materials in the ground is the most costly result," said Casper. "We are mandated to recycle a minimum of 70 percent of what comes to us, but our percentage is well above that."

Beyond 30,000 hours

Handling construction and demolition debris takes a toll on machinery. Casper asserts that it is the most abusive environment – bar none – for a wheel loader.

"All the various wastes are intertwined and wrapped together, which can catapult objects back at the operator and the machine. The material is abrasive and contains sharp objects, such as porcelain from plumbing. Anyone in this business knows a broken toilet is as sharp as a surgeon's knife," Casper emphasized. "We modify machines with extra guarding and bracing and run hard tires on the front and pneumatic on the rear to soften the impact of running over debris that falls in between the front and back tires as the loader peels the intertwined pile. Flats are rare because we run L5 tires on the rear. It's extremely impressive that our Komatsu wheel loaders continue to perform as well as they do, even with a high number of hours."

California Waste Services uses a Komatsu PC210LC-10 excavator to feed its sorting line. "The PC210 sits atop a pile of debris and continuously swings materials into the sorting conveyor," said President Eric Casper. "The durability and reliability of the Komatsu loaders were big factors in my decision to buy the excavator. It's met my expectations."

▶ VIDEO





▶ VIDEO

California Waste Services relies heavily on Komatsu wheel loaders, including WA470 and WA250 models. "All the various wastes are intertwined and wrapped together, which can catapult objects back at the operator and the machine. The material is abrasive and contains sharp objects, such as porcelain from plumbing," said President Eric Casper. "It's extremely impressive that our Komatsu wheel loaders continue to perform as well as they do, even with a high number of hours."

California Waste Services began using Komatsu loaders the same year it was founded, renting a WA320.

"I didn't know much about Komatsu, but I quickly found out that it is as good, if not better, than its main competitors," he recalled. "That loader had 36,000 hours on it when we finally sold it at auction, and it was still running well. The engine and transmission were rebuilt once. We didn't have a lot of money back then to buy new equipment, so the fact it lasted that long was a real advantage to us. We have since had multiple Komatsu loaders that went beyond 30,000 hours."

California Waste Services currently runs a mix of loaders, including WA470, WA250 and WA270 models. Casper worked closely with Road Machinery LLC and Account Manager Andrew Brown on the company's most recent purchases, including the PC210LC-10 excavator.

"The PC210 sits atop a pile of debris and continuously swings materials into the sorting conveyor," Casper said. "The durability and reliability of the Komatsu loaders were big factors in my decision to buy the excavator. It's met my expectations."

Casper pointed out that Road Machinery's service is another reason California Waste Services chooses Komatsu. "We take care of small repairs, but if there is a major issue we call, and they respond quickly. Because Komatsus are well-built, those calls are few and far



California Waste Services President Eric Casper (left) works with Road Machinery Account Manager Andrew Brown to purchase Komatsu equipment. "Our newer Tier 4 machines are covered by Komatsu CARE, and that's a real added-value," said Casper.

between. Our newer Tier 4 machines are covered by Komatsu CARE, and that's a real added-value. We appreciate everything Andrew, Road Machinery and Komatsu do for us."

Maximizing resources

California Waste Services recently set up its own grinder for wood products in an effort to recapture a part of the business that dropped off during the Great Recession a few years ago.

"Economically, we had to stop doing it ourselves and send those items to someone else to grind," said Casper. "This operation eliminates that step and increases our competitiveness. It maximizes and further monetizes the space we have at our facility. That's what we've always tried to do, along with giving our customers excellent value and service." ■

HANDS-ON EXPERIENCE



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DEMOS IN THE DESERT

Hundreds of customers test drive the latest machines at Komatsu's Las Vegas Demo Days



Bob Post,
Komatsu Director
of Marketing
Communications

Komatsu welcomed more than 350 people to its Las Vegas Demo Days in October 2016. The event featured six days of demonstrations and all of Komatsu's *intelligent* Machine Control excavators.

In total, Komatsu had 27 machines available for customers to operate: three *intelligent* Machine Control excavators (PC210LCi, PC360LCi and PC490LCi); eight additional excavators (PC55MR, PC88MR, PC138USLC,

PC228USLC, PC210LC, PC270LC, PC360LC and PC490LC); six wheel loaders (WA270, WA320, WA380, WA470, WA500 and WA600); four *intelligent* Machine Control dozers (D51PXi, D61PXi, D65PXi and D155AXi); three additional dozers (D39PX, D61PX and D65EX); two trucks (HM400 and HD605); and a GD655 motor grader.

"It's important for attendees to get the best feel possible for our machines at Demo Days," explained Komatsu Director of Marketing Communications Bob Post. "We put the equipment in real-life applications with rocky soils. For the *intelligent* Machine Control equipment, we uploaded plans so customers could get a chance to operate with full automation. We want everyone who comes to one of our Demo Days to see exactly what a machine can do and go home with all of their questions answered."

Komatsu traditionally hosts two Demo Days at its Customer Center in Cartersville, Georgia, each year. The Las Vegas event was planned to make it easier for customers in western states to attend. ■

Andrew Brown of Road Machinery (center) meets with (L-R) Dave Villafona, Rick Sancedo, Albert Sanchez and Dario Ross of Resource Environmental.



Las Vegas Demo Days gave customers a chance to operate Komatsu's *intelligent* Machine Control dozers.



(L-R) Andrew Brown of Road Machinery, Aaron Dyer of Savala Equipment and Jamie Carson of Road Machinery discuss the machines available for demo.



▶ VIDEO

A Komatsu PC490LCi – the world’s largest *intelligent* Machine Control excavator – loads an HM400 articulated haul truck at Komatsu’s Demo Days in Las Vegas.



Chris Porter of Road Machinery (center) talks with Robert Lartz (left) and Timothy Phelps from Tetra Tech.



Rich Holt (left) and Hugo Rivera from Greenstone Materials get ready to test equipment at Demo Days.



(L-R) Mark Snyder of Achen-Gardner and Todd Hall of Western Aggregates meet with Chris Tarbell of Road Machinery.



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CONEXPO 2017 showcases innovative new products that will shape the future of construction



Visit Komatsu at:
North Hall, Booth N10902
Gold Lot, Booth G4183

It's often said that demolition is the first step to new construction. In May 2015, crews razed Las Vegas' famed Riviera Hotel and Casino, paving the way for an expanded CONEXPO-CON/AGG. Held every three years at the Las Vegas Convention Center – right next door to where the Riviera stood – the event is scheduled for March 7-11, 2017.

CONEXPO-CON/AGG will be the first trade show to use the new space, building on what is already the largest international gathering in the Western Hemisphere for the construction-related industries. It also earned the top spot on Trade Show Executive's prestigious Gold 100 trade-show rankings. The largest show in the U.S. of any industry in 2014 – the last time the event was held – it featured more than 2.35 million net square feet of exhibit space, 2,100-plus exhibitors and approximately 130,000 attendees.

Record attendance is possible at CONEXPO-CON/AGG, scheduled for March 7-11, 2017, at the Las Vegas Convention Center.



Nearly every time the triennial show is held it's bigger than the previous one. That's expected to continue with CONEXPO-CON/AGG 2017. All major areas of the construction industry will be represented in the more than 2.5 million square feet of exhibit space that will house 2,500-plus exhibitors. Almost 700 of the exhibitors are new in 2017. Event organizers expect increased attendance as well.

Technology and more technology

Those visiting will notice a heavy emphasis on cutting-edge innovation. CONEXPO-CON/AGG continues to provide attendees with access to the newest products from every key construction-related sector, including asphalt, aggregates, concrete, earthmoving, lifting and utilities.

To showcase the focus on technology, the theme for the 2017 exhibition is "Imagine What's Next." This theme reflects the vision for the show as it fully embraces applied technologies that help construction companies reduce downtime, maximize efficiency at jobsites and minimize waste, while increasing bottom-line profits and enhancing safety.

"Technology is critical to the future of the construction industry and CONEXPO-CON/AGG has always been a show that helps industry executives keep pace with the latest in new equipment and product innovations," said Rich Goldsbury, CONEXPO-CON/AGG 2017 show Chairman. "But, as the industry is being transformed by technology, our attendees understand the importance it has on the bottom line. It is our responsibility and privilege to connect them with the most cutting-edge innovations in safety, equipment and operations that are reshaping the future."



Komatsu will prominently display its *intelligent* Machine Control dozers and excavators, including the PC490LCi-11, in the outdoor Gold Lot (Booth G4183). There, it will also highlight its SMARTCONSTRUCTION program, which goes beyond *intelligent* Machine Control equipment with comprehensive jobsite solutions.

CONEXPO-CON/AGG brings the Imagine What's Next theme and technology focus to life with a new 75,000-square-foot Tech Experience pavilion dedicated entirely to presenting emerging construction innovations that are driving change and process improvements across the industry. Located in Silver Lot 3, it will feature items such as wearables for health, safety and productivity; the latest skills for careers; and new materials to enhance the nation's infrastructure, according to the Associated Equipment Manufacturers (AEM), the lead sponsor of the show.

"With the Tech Experience, CONEXPO-CON/AGG is advancing to a new level of thought leadership in our industry," said Sara Truesdale Mooney, Show Director and Vice President, Exhibitions and Business Development for AEM. "Attendees will explore three key zones: the worksite of the future, jobs of the future and the infrastructure of the future."

CONEXPO-CON/AGG is co-located with the International Fluid Power Expo (IFPE),

and the two shows are teaming up to unveil the world's first, fully functional 3-D printed excavator and the first large-scale use of steel in 3-D printing, known as additive manufacturing. In addition, attendees can watch as a second excavator is printed live on the show floor.

"We know our members look forward to seeing the industry's most innovative technologies at CONEXPO-CON/AGG and IFPE each show year, and 2017 will not disappoint," said John Rozum, IFPE Show Director. "We're thrilled to bring such a significant technological and first-of-its-kind achievement like the 3-D printed excavator to the show. It will serve as a platform to demonstrate how the latest innovations and applied technologies are changing the future of the construction industry."

Komatsu spotlights SMARTCONSTRUCTION

Komatsu introduced a significant leap in machine technology three years ago

Continued . . .

Learning sessions to focus on technology trends

... continued

with its *intelligent* Machine Control dozers. The Komatsu lineup now includes eight models, including a radio-controlled version of its D155AXi-8, as well as three excavators (PC210LCi-11, PC360LCi-11 and PC490LCi-11). Komatsu will display most of its *intelligent* Machine Control equipment at the company's outdoor exhibit space in the Gold Lot (Booth G4183), as well as a new machine featuring hybrid technology.

The outdoor area will also feature Komatsu's SMARTCONSTRUCTION program, which goes beyond *intelligent* Machine Control equipment with comprehensive jobsite solutions provided by Komatsu. In addition to training and support, offerings include surveying/inspection, 3-D modeling, jobsite-data solutions and setup, as well as optimized operation consultation.

Attendees flock to Komatsu's display at the 2014 CONEXPO. The company will have two exhibit areas at the 2017 show, with standard Tier 4 machines indoors in the North Hall (Booth N10902) and *intelligent* Machine Control equipment outdoors in the Gold Lot (Booth G4183).



Indoors in the North Hall (Booth N10902), Komatsu will prominently feature its standard Tier 4 machines. Among them will be excavators, ranging from utility to production-sized models; Dash-8 wheel loaders; multiple dozers and trucks; plus a motor grader. The 22,000-square-foot space will also have a presentation area; a company store with apparel, die-cast models and other logoed merchandise; as well as a photo opportunity spot.

Learning sessions

At this year's expo, educational opportunities abound with a record 143 sessions across 10 tracks. One specifically focuses on technology and will highlight industry innovations and future growth opportunities in the tech field – drones, autonomous machines, 3-D imaging, smart apps, gamification, big data and the Internet of Things (IoT).

Additional tracks will offer the latest trends and best practices for aggregates; asphalt; concrete; cranes; rigging and aerial lifts; earthmoving and site development; equipment management and maintenance; business practices; workforce skills; and safety.

"Education is a critical component of CONEXPO-CON/AGG, and we encourage attendees to take advantage of the convenience of so many learning opportunities available. They'll be able to work smarter because of the knowledge they gain," said Goldsbury.

Registration for sessions can be completed prior to the conference at the CONEXPO website (www.conexpoconagg.com). Single session, one-day passes and full-session passes are available.

"We're honored to be among the most trusted resources for industry professionals from around the world, and we feel tremendous pride as we take the exhibition to the next level of technological breakthroughs by delving into the future of the construction industry," said Truesdale Mooney. ■

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GUEST OPINION

LET'S INVEST IN 'SMART CITIES'

How the Smart City Challenge helps meet the need for more infrastructure investment



Daniel Castro

Daniel Castro is the Vice President of the Information Technology and Innovation Foundation and Director of the Center for Data Innovation. This article is excerpted from an opinion piece Castro wrote for and was originally published by Government Technology. To see the full version, visit www.govtech.com/opinion.

The U.S. government has committed approximately \$160 million in the next five years to support smart city initiatives. Calling that a pittance, Daniel Castro says the United States needs to address this funding shortfall.

The United States has woefully underinvested in smart city efforts compared to other leading countries. To address this shortfall, federal, state and local governments should come together to create a new funding stream to help U.S. cities increase investment in the digital infrastructure needed to ensure that our cities are modern, sustainable and competitive. The U.S. government has committed approximately \$160 million in the next five years to support smart city initiatives. This is a pittance compared to some of the investments other countries are making to develop smart cities.

One of the single largest U.S. investments in smart cities occurred in June 2016, when U.S. Department of Transportation (USDOT) Secretary Anthony Foxx announced that Columbus, Ohio, had won the Smart City Challenge – a \$50 million federal prize awarded

to one city to address important issues such as safety, mobility and climate change through better use of data and technology. This is a significant milestone because most smart city initiatives in the United States have been small-scale projects focused on a particular application or problem, rather than the broad integration of sensors, data and analytics across virtually all public services.

The most impressive aspect of the Smart City Challenge was that so many cities responded to the call. From Anchorage to Atlanta and Albuquerque to Albany, the USDOT received 78 applications representing 85 cities in 36 states. Many of these cities identified important challenges facing municipalities and proposed novel solutions that leveraged technology to improve the community.

Unfortunately, the Smart City Challenge only funded one city's proposal, even though many more were also deserving. This is an inadequate approach for funding critical digital infrastructure. Just as it would be unwise to only fund bridges and highways in one U.S. city, it makes no sense to limit investment in the sensors, systems and networks needed to build smart cities to a single location. Instead, policymakers at the city, state and federal levels should work together to fund promising proposals and develop strong partnerships with the private sector. This could take the form of new grants or repurposing existing funding for physical infrastructure to include digital initiatives.

While there is enormous potential to leverage data-driven innovation to improve the quality of life in urban environments, the United States will need to take action soon if it does not want to fall behind in the race to build smart cities. ■



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PRODUCT INNOVATION

MARRIAGE OF TECHNOLOGIES

New radio-control dozer combines remote operation and *intelligent* Machine Control



Sebastian Witkowski,
Komatsu Product
Marketing Manager

From time to time, earthwork companies take on projects in less-than-ideal conditions. Grading must be completed, but site hazards need to be addressed. Komatsu has a solution with its new D155AXi-8 Radio Control (RC) dozer with *intelligent* Machine Control.

“The D155AXi-8 RC dozer is ideal for applications where customers may want to remove the operator from the machine, yet maintain high levels of efficiency and productivity,” said Sebastian Witkowski, Komatsu Product Marketing Manager. “This dozer meets customer demands in those applications, while utilizing Komatsu’s proven, automated, rough-cut-to-finish-grade technology.”

Komatsu’s new D155AXi-8 RC dozer combines radio-control grading with *intelligent* Machine Control. Operators can run the D155AXi-8 RC dozer from within the cab or with a remote transmitter that has range of approximately 330 feet, and the status of the machine is always available by checking the cab-top lights.

Quick Specs on Komatsu’s D155AXi-8 RC Dozer

Model	Horsepower	Operating Weight	Blade Capacity
D155AXi-8 RC	354 hp	102,060 lb	12.3 cu yd



Operators can control the D155AXi-8 RC dozer while inside the cab or with a remote transmitter that has a range of approximately 330 feet. Operators must maintain line of sight, and they can check the status of the machine through the cab-top lights.

Witkowski pointed out that for many operators, the ability to feel the machine’s response to blade load is an important factor in effective dozing. This is difficult for a radio-control application where the operator is separated from the machine, but the D155AXi-8 RC is unique among radio-control dozers thanks to the *intelligent* Machine Control that automates operation from heavy dozing to fine grading. This model has the ability to sense and control blade load, optimize the start of the cut and minimize track slip just like other Komatsu *intelligent* Machine Control dozers.

An automatic gearshift transmission and lock-up torque converter work together to select the optimal gear range, depending on jobsite conditions and load. These two features are designed to provide maximum operation efficiency. The electronically controlled transmission locks up the torque converter to transfer engine power directly to the transmission, eliminating horsepower loss and increasing fuel efficiency.

“The D155AXi-8 RC is extremely effective working in hazardous conditions or next to a high wall,” Witkowski explained. “Komatsu has a long history with radio-control equipment and now several years of solid experience with its *intelligent* Machine Control products. Both are proven to provide excellent production. The D155AXi-8 RC is a perfect marriage of these two advanced technologies.” ■



NEW COMPACT EXCAVATOR

Good lift capacity, tight-tail-swing radius are combined with advanced technology in the PC138USLC-11

Upgrades, updates and enhancements. Each new model that Komatsu produces has them, and the PC138USLC-11 Tier 4 Final excavator is no exception, with productive features that provide excellent lift capacity, stability and performance in a compact model design that fits a variety of applications.

“The PC138USLC-11 is the perfect machine for contractors on highway, bridge and other roadwork jobs,” said Kurt Moncini, Komatsu Senior Product Manager. “It’s easy to transport, versatile and the tight tail swing fits easily within one lane of traffic. Even though it’s compact, the excavator has a robust counterweight and can be an effective tool on large, open jobsites, too.”

The 7,630-pound counterweight provides excellent lift capacity, equal to or better than conventional models in the same size class. The contoured cab profile and sliding door allow the cab to swing within the same radius as the counterweight.

“If the tracks can fit through an area, then there is enough space for operators to swing without worrying about hitting an obstruction,” said Moncini. “That gives them confidence to work in congested areas, close to power poles or transformers and up against, or even inside of a building.”

Like other Tier 4 Komatsu machines, the PC138USLC-11 features Komatsu hydraulic technology that matches engine speed and hydraulic pump output for optimal performance. Operators can also match the machine to the materials and the job at hand with six working modes, including Power, Economy and Attachments. An enhanced attachment control stores up to 10 attachments in the monitor panel, with adjustable flow

control. Two-way attachments also run in Economy mode for greater efficiency.

Improved telematics

Komatsu upgraded its telematics technology to cellular, ensuring that when work is performed inside a building, KOMTRAX information remains available. Operators can view it through an updated monitor panel that also incorporates a standard, rearview-camera output that’s always available on the screen.

“Ground-level access to service points are all located on one side, including fuel, engine oil and air filters,” said Moncini. “That saves time, which can be better spent in production. It’s a terrific all-around machine that’s built for great production, even in less-than-ideal conditions. The PC138USLC-11 would be a valuable addition to any fleet.” ■



Kurt Moncini,
Komatsu Senior
Product Manager

Quick Specs on Komatsu’s PC138USLC-11 Excavator

Model	Net Horsepower	Operating Weight	Bucket Capacity
PC138USLC-11	97.2 hp	34,731-37,669 lb	0.34-1.00 cu yd

Komatsu’s new Tier 4 Final PC138USLC-11 features excellent lift capacity, stability and performance in a compact model designed to fit a variety of applications. If the tracks can fit through an area, then there is enough space so that operators can swing without worrying about hitting an obstruction.

▶ VIDEO





“IT’S ABOUT RELATIONSHIPS”
MY CUSTOMERS LOVE KOMATSU!

I AM KOMATSU

GENE SNOWDEN III / MACHINE SALES REP / BRANDEIS MACHINERY / LOUISVILLE, KY

“I’m proud to sell Komatsu products. At Brandeis, we’ve handled quality Komatsu equipment for decades. Like all Komatsu loaders, the WA470 has an excellent balance between power and stability in the pile and speed and stability when moving with the load. And maintenance departments love the access to daily checks and service items. My customers are satisfied customers, and that’s why I AM KOMATSU.”



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NEW PRODUCT



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VERSATILE WHEEL LOADER

The new WA270-8 powers its way through a wide variety of applications

High production, greater fuel efficiency and improved operator comfort are all traits found in Komatsu's new WA270-8 wheel loader, which fits a wide range of construction, landscaping, agriculture and other applications. Its parallel-lift linkage, with auto tilt-in to simulate a Z-bar, can be used for virtually any job, from pallet handling to hard digging.

"Whether you're lifting, digging or changing attachments on the fly, the WA270-8 is compact enough to squeeze between farm buildings, yet has the power to tackle jobs often planned for bigger machines," said Frank Nyquist, Komatsu Product Specialist. "It's one of the most versatile machines Komatsu offers."

The WA270-8 features a proven, fourth-generation hydrostatic drive train with variable traction control. It has multiple working modes, including an S-mode that provides excellent traction control to reduce wheel slip. This setting is especially useful in snowy, icy or slippery conditions. Creep mode in first gear is easily controlled via a knob on the console, and allows the operator to dial in a travel speed from 1 to 8 miles per hour.

The WA270-8's new Tier 4 Final engine lowers fuel consumption by up to 3 percent in V-cycle loading and 2 percent in load-and-carry applications, compared to its Tier 4 Interim predecessor. The selective catalytic-reduction (SCR) system and other aftertreatment components help the engine with efficiency and longevity. More than 98 percent of the Komatsu Diesel Particulate Filter (KDPF) regeneration happens passively, with no action required of the operator and no interference with machine operation. The SCR system lowers nitrogen oxide emissions and is designed to last for the life of the machine.

From farms to construction sites

A more comfortable cab with a new, high-back, heated seat softens machine vibration for greater operator comfort. Operators can check vital machine metrics, including KDPF status, diesel exhaust fluid level, fuel consumption and performance information on the 7-inch LCD color monitor.

"Our advanced KOMTRAX system enables fleet managers to track highly detailed information, such as fuel burn in one type of material versus another, or to monitor fuel usage on a specific job or by operator," Nyquist noted. "It's a great tool that helps owners get the most out of the WA270-8." ■



Frank Nyquist,
Komatsu Product
Specialist

Quick Specs on Komatsu's WA270-8 Wheel Loader

Model	Net Horsepower	Operating Weight	Bucket Capacity
WA270-8	149 hp	28,208-29,079 lb	2.5-3.5 cu yd

Komatsu's new wheel loader fits a wide range of construction, landscaping, agriculture and other applications. Its parallel-lift linkage, with auto tilt-in to simulate a Z-bar, can be used for virtually any job, from pallet handling to hard digging.

▶ VIDEO





Discover more

KOMATSU'S LARGEST TRUCK EVER

New electric-drive 3,500-hp mining truck with built-in management system delivers 400-ton payloads



Tom Stedman,
Komatsu Product
Manager

Mining customers asked for a bigger truck and Komatsu answered the call with its largest ever model, the new 980E-4. The 3,500-horsepower electric-drive 980E-4 brings to market a true 400-ton payload, increasing productivity and efficiency in a mining operation. The 980E-4 is an optimal match for today's large loading tools, typically loading in three to five passes (55 to 99 cubic yards). Paired with Komatsu's PC8000 mining shovel, the 980E-4 is a superb production machine.

"Building on the foundation of the 960E, Komatsu was able to expedite the development of this new truck, while maintaining our strict standards of design, testing and product quality," said Komatsu Product Manager Tom Stedman.

"We have every confidence this new model will reliably deliver high productivity."

A payload management system (PLM IV) allows mines to track payloads, cycle times, load counts, frame torque and much more. Businesses can store more than 20,000 downloadable records of data, while using PLM IV to monitor truck production and prevent overload conditions.

Komatsu designed the 980E-4 to improve truck performance and lower per-ton costs. Its features include a powerful 18-cylinder diesel engine that's comparable to other trucks in the 400-ton class for speed on grade, while maintaining a high stall torque capacity for mines with soft underfoot conditions. The AC electric-drive system enables efficient operations even in deep-pit applications.

Drivers will appreciate the excellent vehicle control and handling that comes from a high-capacity retarding package that provides longer life and improved horsepower for downhill descents. The electric, dynamic retardation force maintains constant downhill speed or decelerates without the frequent use of brakes.

Quick Specs on Komatsu's 980E-4 Mining Truck

Model	Horsepower	Operating Weight	Payload Capacity
980E-4	3,500 hp	1.3785 million lb	400 ton

Komatsu's new 980E-4 mining haul truck with a 400-ton payload capacity has features that improve performance, vehicle control and handling, as well as combat rugged and other less-than-ideal conditions.



Meeting rugged conditions head on

To combat rough conditions, the 980E-4 uses a continuous horse-collar and ladder-type frame that provides long life and long-term reliability. A new dump body incorporates high-tensile strength and abrasion-resistant steel, giving it a rugged-chassis construction that's able to withstand the rigors of off-road hauling.

"For several years, many of our customers have been asking Komatsu for a 400-ton electric-drive rear dump truck with the reliability of our flagship model, the 930E," said Stedman. "With the release of the 980E-4, we now have a product to meet this market demand." ■

HM300-5

THE MOST RUGGED TRUCKS

- Built-in payload meter and external display lamps
- Hydraulic wet multi-disc brakes with retarder
 - Komatsu traction control system
 - Selectable working modes



I AM KOMATSU

JASON ROGERS / PRODUCT SERVICE MANAGER / KIRBY-SMITH / TULSA, OK

"I've been around Komatsu products for decades. Working close with our customers and specing the right machinery for them is a key part of our success at Kirby-Smith. A full product line, including high-quality articulated trucks like the HM series, keeps my customers rolling. And that's why I AM KOMATSU."

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Discover more

NEW KOMATSU HARVESTER

Unique Comfort Bogie system provides maneuverability and superior handling in challenging terrain



Steve Yolitz,
Manager,
Marketing Forestry,
Komatsu America

Forestry work often involves navigating challenging terrain. Komatsu's 931XC (eXtreme Conditions) eight-wheel-drive (8WD) harvester stands up to the task with a unique double Komatsu Comfort Bogie system that provides maximum maneuverability and productivity on steep, rough or soft terrain.

The 931XC builds upon the proven 931 six-wheel-drive (6WD) platform with its innovative hydraulic pump system, best-in-class ergonomic cab, four-way cab/crane leveling and 360-degree cab/

crane rotation. What sets it apart from other 8WD harvesters is the unique drive system that starts with Komatsu's proven articulated frame joint, rear-swing axle with +/- 16-degree left/right oscillation and the high-oscillation Comfort Bogie front axle. The trademark Komatsu Comfort Bogie is added to the rear-swing axle to provide excellent uphill/downhill and left/right oscillation.

"The Comfort Bogie drive system gives the 931XC superior handling characteristics as the harvester follows the terrain more closely than 8WD machines with a fixed rear-axle design," said Steve Yolitz, Manager, Marketing Forestry, Komatsu America. "This 8WD system dramatically reduces rear ground pressure, resulting in 54 percent lower psi with tracks and 23 percent lower psi with tires compared to the 6WD 931 model."

Komatsu's 931XC's unique double Comfort Bogie system provides maximum maneuverability and productivity on steep, rough or soft terrain. The new eight-wheel-drive system dramatically reduces ground pressure compared to the six-wheel-drive model: 54 percent lower psi with tracks and 23 percent lower psi with tires.

Lighter footprint with powerhouse abilities

Yolitz points out that the lighter tire footprint reduces the need for tracks and chains, potentially increasing fuel economy. Additionally, the 931XC has 12 percent more tractive effort, 1.8 inches of additional ground clearance and 14 percent greater crane slewing torque.

"Combine those features with the 8WD double Comfort Bogie drive system, and the 931XC becomes a harvesting powerhouse able to take on nearly any terrain a forestry contractor may face," said Yolitz. "To further enhance its abilities to work in tough conditions, it features heated batteries, diesel exhaust fluid, engine coolant and hydraulic oil systems, which improve cold weather starting." ■



BUILT FOR THE LONG HAUL

Dan Funcannon says mining truck design and quality manufacturing ensure durability and dependability

QUESTION: As head of the Mining Division you oversee operations at the Peoria Manufacturing Operation (PMO). What products does that facility produce?

ANSWER: PMO produces one mechanical truck, the HD1500, for the North American market. We are also responsible for six electric-drive models globally, ranging from the 200-ton-capacity 730E-8 to the recently introduced 980E-4. At 400-ton-capacity, the latter is now our largest truck ever.

In some cases, we manufacture more than one version of a product. For example, our 830E and 930E trucks have both standard and autonomous (driverless) models, and our 860E and 960E products have trolley versions, which operate using overhead electrical lines.

In Komatsu terminology, PMO is a mother plant, which means it also houses the Research and Development Group for the products manufactured there. That group is responsible for developing Komatsu's electric dump trucks.

QUESTION: Why should a mine consider using Komatsu trucks?

ANSWER: Bottom line, we make high-quality and reliable trucks that are built to last and meet customers' total cost of ownership goals. We have numerous examples of trucks running 60,000, 75,000, 100,000 hours and beyond with outstanding availability. In fact, when customers talk to us about purchasing new units, we are frequently asked to guarantee that their availability will be at or above 90 percent throughout the life of the trucks. We're confident in providing that guarantee because of our robust designs, quality manufacturing process and world-class support through our distributor network.

Continued ...



Dan Funcannon, Vice President and General Manager of the Mining Division

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 his role as Vice President and General Manager of the Mining Division, Dan Funcannon is responsible for the sales and support of Komatsu mining products in North America, as well as its 200-ton and larger mining trucks globally. He moved into the position last fall. Funcannon joined Komatsu in 1994 as a design engineer and has held roles of increasing responsibility within research and development.

Most recently he was Director of Engineering, overseeing all engineering activities related to large mining trucks. Funcannon directed new product research and development projects, including AC-drive haul trucks; autonomous technology adoption into large mining trucks; and innovations to improve safety, quality, reliability and productivity.

"I started my career with a third-party company that Komatsu used for contract engineers," Funcannon recalled. "Then, I was hired directly by Komatsu and began working in the structural engineering group, which is responsible for all major structural components of our mining trucks – the frame, axle housing and bodies – referred to as the backbone. I was involved with design, testing and quality confirmation for the structural components."

Funcannon is a native of Peoria, Illinois, where Komatsu manufactures mining truck products and houses the Research and Development Group behind the design of electric dump trucks that are 200 tons and larger. He graduated from Bradley University in Peoria with a Bachelor of Science degree in mechanical engineering.

"In the past few years Komatsu has shifted its focus to a customer-centered approach instead of simply serving as an equipment manufacturer," said Funcannon. "That means we communicate more with customers at their sites, listen to their needs and input and then implement their recommendations into the design and manufacture of new products as well as strong support systems. It has strengthened relationships and helps us better meet customers' needs."

Goal is to keep customers' per-ton costs as low as possible

... continued



Dan Funcannon says Komatsu products are manufactured with superior quality and robust designs, "We have numerous examples of trucks running 60,000, 75,000, 100,000 hours and beyond with outstanding availability."

Komatsu's Peoria Manufacturing Operation designs and builds 100-ton to 400-ton trucks, including the popular 930E.



QUESTION: Where does each product fit?

ANSWER: That's dependent on customer need. Many of our Ultra-Class products, which are 300-ton-capacity or larger, are put to work in copper or coal mines. Smaller-sized trucks are heavily used in iron, but some of those mines may go to a larger size, depending on several factors.

QUESTION: How does Komatsu help determine what trucks a mine needs?

ANSWER: We have an Applications Engineering Group that works closely with customers to evaluate their mines and production requirements, and then makes recommendations. The group looks at loading areas and equipment, haul roads, distance to a crusher or stockpile, material and a whole host of other determining factors.

We go beyond simply recommending machinery. We also have a Mining Optimization Group that helps identify ways to maximize production and do it more efficiently and cost effectively. The ultimate goal is to help our mining customers keep their per-ton costs as low as possible.

QUESTION: The mining industry has experienced a downward trend in the past few years. What do present and future conditions look like?

ANSWER: There are some signs that the markets have bottomed out, and hopefully that is the case. Commodity prices have risen a little. I think there is cautious optimism that things might pick up in 2017 and that there will be incremental improvement. ■



Vice President and General Manager of Komatsu's Mining Division Dan Funcannon says, "We make high quality and reliable trucks that are built to last and meet customers' total cost of ownership goals."

EXPANDING TO SERVE YOU

MINING THE FUTURE

Komatsu announces agreement to acquire mining equipment manufacturer Joy Global Inc.

Komatsu and Joy Global announced an agreement in which Komatsu will acquire Joy Global, Inc., a leading mining equipment manufacturer based in Milwaukee, Wisconsin. The companies are working to finalize the transaction by mid-2017.

“Our customers are sharing very positive feedback about the agreement,” said Tetsuji (Ted) Ohashi, President and CEO of Komatsu Ltd. “We are working closely with Joy Global and relevant authorities to move the process forward.”

Ted Doheny, President and CEO of Joy Global, Inc. agreed, noting industry recognition of the complementary nature of the two companies’ product and service offerings.

“Many of our customers and other business partners see the benefit of combining companies: a broader offering of products, systems and solutions across a wider scope of mining and construction applications,” Doheny said. “Both companies believe in having the best products, offering direct service, being operationally excellent, and having the best people in the world.”

Joining Joy Global with the Komatsu Group will offer several benefits to customers, including:

- A broader line of industry-leading mining and construction equipment for drilling, earthmoving, loading and hauling systems, as well as solutions for both underground and surface mining. Joy Global’s best-in-class rope shovels, for example, pair well with Komatsu’s best-in-class large electric dump trucks.

- Enhanced global customer support through the companies’ mutual commitment and expertise in direct sales and service directly connected via embedded personnel in the mines and electronically connected with world-class fleet management systems.

“The synergistic collaboration between the companies will drive our innovation and enhance our capacity to provide quality products and solutions that improve the safety and productivity of mining operations,” Ohashi said. “We will, together, strive to become an even better, more invaluable partner for our customers.”

“The combination of two world-class companies offers exciting opportunities to enhance and expand the solutions and services we provide customers,” Doheny said. “With strengthened capabilities and a continued focus on solving our customers’ toughest challenges, we look forward to working together to advance the mining industry.” ■

President and CEO of Komatsu Ltd. Tetsuji (Ted) Ohashi (left) and President and CEO of Joy Global, Inc. Ted Doheny meet at MINExpo INTERNATIONAL® 2016 in Las Vegas. Joy Global is the largest independent manufacturer of underground-mining machines.



CONTINUOUS IMPROVEMENT



Discover more

TECHNOLOGY DRIVES SERVICE

With evolution of Tier 4 machines, Komatsu continues to expand service and support offerings



Doug Morris,
Komatsu Director of
Product Marketing

The evolution of technology has led to the creation of advanced machines with efficient engines and lower emissions.

“As technology continues to move forward, so do our service offerings,” said Komatsu Director of Product Marketing Doug Morris. “Technology and emissions standards are frequently updated, and it can be challenging for customers to stay on top of it all. Our goal is to minimize the impact of those changes.”

One way that Komatsu helps customers stay abreast of upgrades in technology and emissions standards is through the Komatsu CARE service program. Komatsu introduced this plan when it launched Tier 4 Interim machines in 2011.

The goal of Komatsu CARE is two-fold: deliver a value-added service and provide an opportunity for owners to become more familiar with the latest engine technology through regular interactions with factory-trained service technicians. Today, engines have advanced to Tier 4 Final technology, which includes a Selective Catalytic Reduction (SCR) system that uses Diesel Exhaust Fluid (DEF).

In response to these changes, Komatsu enhanced the Komatsu CARE program.

Now, in addition to three-year or 2,000-hour complimentary maintenance and two Komatsu Diesel Particulate Filter exchanges during the first five years, Komatsu CARE addresses the SCR/DEF system as well. This includes replacing the DEF tank breather element every 1,000 hours and changing DEF pump filters every 2,000 hours on select machines. The program also covers two factory-recommended services of the SCR/DEF system in the first five years, where technicians will flush the DEF tank and clean the strainer every 4,500 hours (for engines with a gross horsepower of 174 or higher).

“We recognized that along with the SCR, there were also maintenance points that needed to be included in the Komatsu CARE program,” noted Morris. “When we introduced Komatsu CARE, our goal was to increase value to the end user. These enhancements to the program ensure that we will be able to do that.”

Data sophistication

Komatsu’s telematics system, KOMTRAX, was also upgraded with a cellular-based communication method, giving customers better coverage than with the satellite-based method the system previously employed.

“With a cellular-based system, customers have the ability to communicate information faster than before and with more reliable coverage,” explained Morris. “However, we still offer an ORBCOMM satellite communication kit for customers who work in areas with low cellular coverage.

“As customers and distributors become more sophisticated in how they use the data, we are continuously working to improve the system to make it more valuable for them,” said Morris. “The more data we are able to offer our customers, the more efficient they can become, and that’s our goal.” ■

Komatsu enhanced its Komatsu CARE offerings to keep pace with Tier 4 technology advancements.



PC490LCi-11

3D AUTOMATION INCREASES YOUR PRODUCTION

- Dig to grade accurately without slowing down
- No worry grading because there is no over digging
- The machine you have been waiting for:
Big, Fast, Accurate



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MICHAEL BLANKENSHIP / TSE / MODERN MACHINERY CO. / SEATTLE, WA

“As a Komatsu Technology Solutions Expert at Modern Machinery, I train operators how to get the most out of their equipment. The all-new PC490LCi-11 is the world’s first *intelligent* Machine Control excavator in its size class. It features Komatsu’s fully factory integrated, revolutionary machine control and guidance system. It’s ready to make you more efficient and more profitable. Leading-edge innovation is why I AM KOMATSU.”

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RENTAL MACHINES



KOMATSU[®] ARTICULATED TRUCKS

MODEL	MAX WEIGHT	PAYLOAD	CAPACITY	TRAVEL SPEED	H.P.	TIER
HM300	116,823 lbs	30.9 TONS	22.4 yd	36.4 mph	332	T4f
HM400	162,597 lbs	44.1 TONS	31.4 yd	34.7 mph	469	T4f



KOMATSU[®] CRAWLER DOZERS

MODEL	WEIGHT	BLADE	CAPACITY	BLADE WIDTH	H.P.	TIER
D39EX*	20,834 lbs	PAT	2.89 yd	8'11"	105	T4f
D39PX	21,804 lbs	PAT	3.01 yd	9'9" LGP	105	T4f
D51EX*	28,484 lbs	PAT	3.5 yd	10'0"	130	T4f
D51PX	29,145 lbs	PAT	3.8 yd	11'0" LGP	130	T4f
D61EX*	37,237 lbs	PAT	4.5 yd	10'9"	168	T4f
D61PX	41,734 lbs	PAT	5.0 yd	12'8" LGP	168	T4f
D65EX	47,355 lbs	PAT/Sigma	5.9 yd	11'2"	205	T4f
D65PX	49,315 lbs	PAT/Sigma	5.78 yd	13'2" LGP	205	T4f
D65EXi	49,559 lbs	PAT/Sigma	5.78 yd	11'2"	205	T4f
D155	87,100 lbs	Sigma	12.3 yd	13'4"	354	T4f
D275	113,604 lbs	Sigma	17.9 yd	14'1"	449	T3
D375	157,940 lbs	Sigma	24.2 yd	15'5"	610	T3

*Machine is available with integrated GPS controls.



KOMATSU[®] HYDRAULIC EXCAVATORS

MODEL	WEIGHT	DIG DEPTH	CAPACITY	DIG FORCE	H.P.	TIER
PC88	18,558 lbs	15'2"	.37 yd	13,780 lbs	55	T4f
PC138	31,504 lbs	18'0"	.34 - 1.0 yd	18,300 lbs	92	T4f
PC170	37,740 lbs	20'6"	.48 - 1.24 yd	24,470 lbs	115	T4f
PC210	48,722 lbs	21'9"	.66 - 1.22 yd	29,762 lbs	165	T4f
PC210i	48,950 lbs	21'9"	.66 - 1.57 yd	29,762 lbs	158	T4f
HB215	48,175 lbs	21'9"	.66 - 1.57 yd	31,080 lbs	139	Hybrid
PC228	54,405 lbs	21'9"	.66 - 1.57 yd	31,085 lbs	148	T4f
PC240	55,129 lbs	22'8"	.76 - 1.85 yd	34,171 lbs	177	T4f
PC290	70,702 lbs	22'8"	.76 - 1.85 yd	34,171 lbs	196	T4f
PC360	80,547 lbs	24'3"	.89 - 2.56 yd	51,150 lbs	257	T4f
PC490	109,250 lbs	30'2"	1.5 - 4.0 yd	53,790 lbs	359	T4f
PC800	188,670 lbs	28'3"	2.5 - 6.0 yd	72,750 lbs	487	T3



KOMATSU[®] MOTOR GRADER

MODEL	WEIGHT	MOLDBOARD	DRIVE	H.P.	TIER
GD655	37,346 lbs	14'0"	4WD	218	T4f



KOMATSU[®] WHEEL LOADERS

MODEL	WEIGHT	TIPLoad	CAPACITY	BREAKOUT	H.P.	TIER
WA270	28,531 lbs	20,216 lbs	3.0 yd	29,487 lbs	149	T4f
WA320	33,731 lbs	21,186 lbs	3.5 yd	36,310 lbs	165	T4f
WA380	40,532 lbs	29,630 lbs	4.0 yd	35,495 lbs	191	T4f
WA470	53,352 lbs	29,630 lbs	5.0 yd	43,163 lbs	272	T4f
WA500	79,802 lbs	54,326 lbs	8.0 -9.8 yd	51,150 lbs	353	T4f
WA600	118,385 lbs	67,200 lbs	10.2 yd	87,230 lbs	527	T4f

KOMATSU[®]





HAMM COMPACTION ROLLERS

MODEL	TYPE	SIZE	CLASS	OPERATING WEIGHT	H.P.	TIER
H7iPB	PAD	66"	6-8 TON	15,542 lbs	91	T4i
H7iS	SMOOTH	66"	6-8 TON	15,542 lbs	91	T4i
H11iPB	PAD	84"	12-14 TON	23,975 lbs	134	T4i
H11iS	SMOOTH	84"	12-14 TON	22,730 lbs	134	T4i



HAMM ASPHALT ROLLERS

MODEL	TYPE	SIZE	CLASS	OPERATING WEIGHT	H.P.	TIER
HD12	VV	48"	3-5 TON	5,964 lbs	31	T4i
HD14	VV/VT	56"	4-5 TON	7,651 lbs	46	T4i
HD110	VV/VO	66"	12-15 TON	22,388 lbs	134	T4i
HD120	VV/VO	78"	15-17 TON	28,164 lbs	134	T4i
HD140	VV/VO	84"	15-17 TON	29,310 lbs	124	T4i



HAMM PNEUMATIC ROLLERS

MODEL	CLASS	OPERATING WEIGHT	H.P.	TIER
GRW280	8 WHEEL	32,926 lbs	134	T4i
HD14 TT	6 WHEEL	7,651 lbs	47	T4i



NPK HYDRAULIC BREAKERS

MODEL	IMPACT ENERGY CLASS	EXCAVATOR CLASS	WEIGHT
PH4	1300 ft lbs	PC88	1,064 lbs
GH6	2000 ft lbs	PC138	2,150 lbs
GH7	2500 ft lbs	PC170	2,900 lbs
GH10	4000 ft lbs	PC200-290	4,200 lbs
GH12	5500 ft lbs	PC290	5,650 lbs
GH15	8000 ft lbs	PC300-360	6,800 lbs
GH18	12,000 lbs	PC400-490	7,800 lbs



NPK MATERIAL PROCESSORS & SHEARS

Model	JAW OPENING	JAW TYPE	EXCAVATOR CLASS	WEIGHT	MAX CRUSH
M-28G	35.8 in	Pulverizing	PC200	6,850 lbs	125 tons
M-28K	25.1 in	Shearing	PC200	6,900 lbs	133 tons
M-35G	38.6 in	Pulverizing	PC300	7,544 lbs	127 tons
M-35K	22.8 in	Shearing	PC300	7,831 lbs	125 tons



drumcutters DRUM CUTTERS

Model	WIDTH	WEIGHT	CUTTING FORCE PSI	EXCAVATOR CLASS	PICKS
ER600	30.7 in	1,800 lbs	6,800-8,100	22-40 K	48
ER650	31.0 in	2,200 lbs	7,300-10,900	33-55 K	48
ER1500	35.0 in	3,858 lbs	9,100-15,700	44-88 K	48

General Rental Information

All rates are 28 day billing cycle (one month). Rates reflect 160 hr per month / 70% overtime rate. All units with GET will be shipped with minimum 50% wear. All units will be subject to excessive tire wear and or tire damage. All units are FOB Road Machinery Facilities



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 Santa Rosa 707.544.4147
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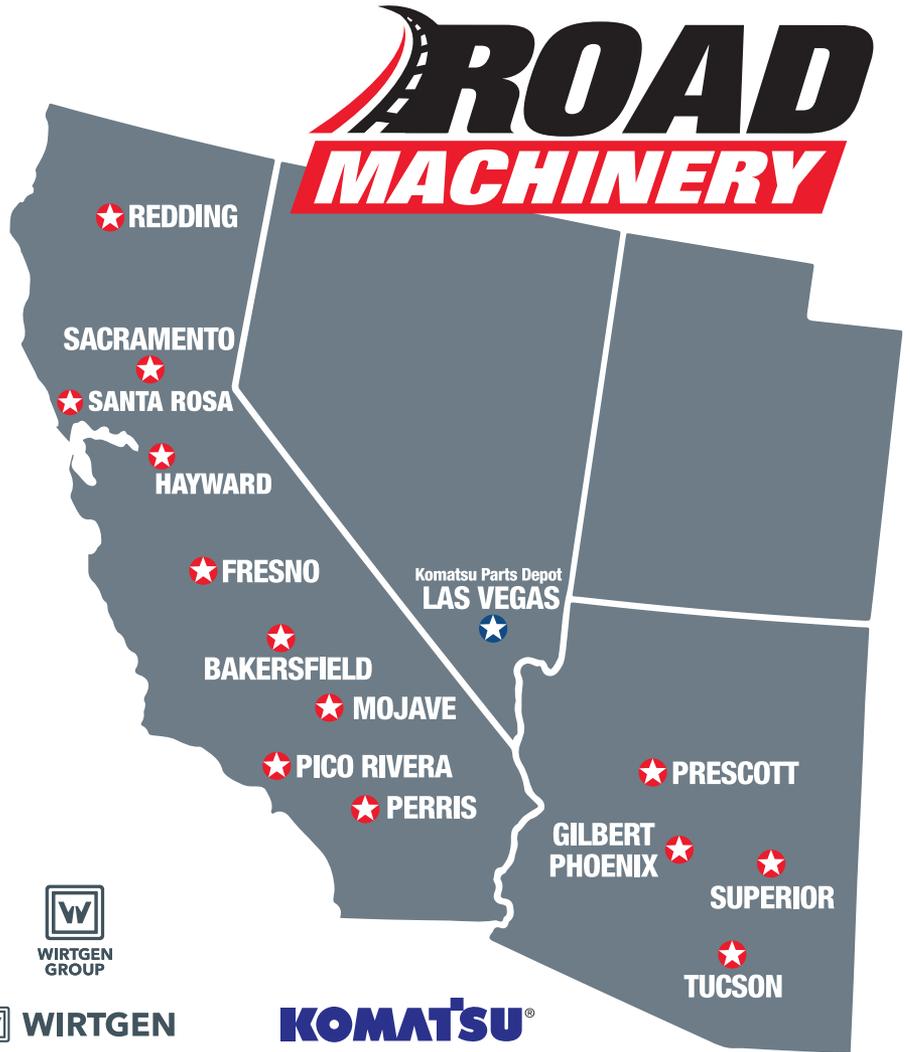
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