

ROAD MACHINERY

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ROAD TO SUCCESS

A PUBLICATION FOR AND ABOUT ROAD MACHINERY LLC CUSTOMERS

IMSAMET OF ARIZONA

Read about this aluminum-recycling foundry and how it functions with Komatsu wheel loaders and service from Road Machinery



BENCHMARK CIVIL CONSTRUCTION

See how a reputation for quality work led to a fast start for this Napa site contractor



Jonathan Gentry,
Partner

A MESSAGE FROM ROAD MACHINERY



Sloan Brooks

**Innovation
comes in
all sizes**



Dear Valued Customer:

Komatsu's innovation stands out, regardless of machine size. Case in point, this issue of your Road To Success magazine highlights a couple of ways that Komatsu places itself at the forefront of technology at different ends of the equipment spectrum.

One is Komatsu's Autonomous Haulage System (AHS), which celebrates its 10th anniversary this year. The driverless trucks remain on course, thanks to high-precision GPS and other systems. During the past decade, these massive machines have successfully moved more than 1.5 billion tons of material efficiently and safely in mines throughout the world.

Mines typically pair AHS trucks with large excavators. On the other hand, construction companies may rely on smaller machines such as the new PC238USLC-11 tight-tail-swing excavator. Its swing radius is the same as the counterweight, so it's well-suited for applications with limited space.

In between those two machines is Komatsu's PC390LCi-11 that offers exceptional stability and lift capacity while providing the technological edge of *intelligent* Machine Control. It's a great fit for trenching and heavy applications and could easily be incorporated into a SMARTCONSTRUCTION initiative. Read about the PC390LCi-11 inside.

I also encourage you to discover the ways that R&T Ellis is saving time and money with its *intelligent* Machine Control products and see how Madden Materials worked with Komatsu's Business Solutions Group to reduce inefficiencies and lower costs. There is much more to check out in this issue as well.

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



Sloan Brooks
President & COO



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ROAD TO SUCCESS

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IMSAMET OF ARIZONA

Aluminum-recycling foundry produces with Komatsu wheel loaders, service from Road Machinery



Andre Presley,
Maintenance
Manager



Pete Zetich,
Maintenance
Lead Man

Pete Zetich recalls driving by IMSAMET of Arizona's location in Goodyear as a youngster. "I remember seeing airplanes sitting here," shared IMSAMET's Maintenance Lead Man. "The story is that at one time this was a facility where World War II aircraft were dismantled and melted down."

Today, it's an aluminum-recycling foundry; one of several production facilities around the world that operates under the Real Alloy corporate umbrella. The global leader in recycling aluminum and magnesium turns those commodities into tailored products such as molten and solid ingots.

"IMSAMET of Arizona gets scrap aluminum from a variety of sources," explained Zetich, who has worked at the foundry for 31 years. "Some of it goes directly into the furnace. We have other material that has to be broken up and then run through a crusher and a ball mill.

The concentrates that come out of the mill are blended to customers' specifications. They may want some zinc or copper mixed into their product. Eventually, nearly everything coming in is melted and poured into molds to make 1,800- to 2,200-pound ingots."

A variety of industries use the resulting products, including automotive, construction, manufacturing and engineering. In addition to aluminum recycling, the plant produces non-metallic items such as cement additives. It runs 24 hours a day, and, when fully staffed, has close to 40 employees, including Zetich, Maintenance Manager Andre Presley and Mechanic Lloyd Garvin, who oversee equipment planning and service.

Durable, long-lasting machines

Several years ago, IMSAMET of Arizona switched to Komatsu wheel loaders, including two WA380s – a Dash 6 and a Dash 5 – equipped with narrow buckets to charge the furnace. Operators swap buckets for forks to move ingot molds. They feed the crusher and mill with a WA380-6 and a WA380-7.

"This is a harsh environment for equipment; it's hot, dusty and to compound that, the materials going into the crusher and mill contain salt, which can accelerate rusting," said Presley. "It's also abrasive. The Komatsu loaders stand up to the challenge and just keep going. They are extremely reliable, and premature rust is not a problem."

Zetich highlighted Komatsu's longevity. "The WA380-6 has more than 20,000 hours, and we have yet to replace the articulating pins, the steering bushings or the trunnion mounts. We have exchanged pins three times and changed the front brakes twice on a

An IMSAMET of Arizona operator dumps material into a crusher with a Komatsu WA380 wheel loader. "With the hydrostatic transmission, when the operator lets off the throttle the machine stops, so there isn't the reliance on braking that comes with the other brands. That saves costs and increases production time," noted Mechanic Lloyd Garvin.





► VIDEO

IMSAMET of Arizona uses Komatsu WA320 loaders to charge its furnace and move ingots during melting and molding of recycling aluminum. “This is a harsh environment for equipment; it’s hot, dusty and to compound that, the materials going into the crusher and mill contain salt, which can accelerate rusting,” said Maintenance Manager Andre Presley. “The Komatsu loaders stand up to the challenge and just keep going. They are extremely reliable.”

competitive loader that was put into service only three years ago.”

“We still have the original brakes in the Komatsu loaders,” Garvin added. “With the hydrostatic transmission, when the operator lets off the throttle the machine stops, so there isn’t the reliance on braking that comes with the other brands. That saves costs and increases production time.”

Garvin further emphasized that the differentials and transmissions on the facility’s Komatsu loaders have been issue-free. “Routine maintenance and replacement of typical wear items such as pumps, hydraulic lines, gasket covers and belts are about it. They are bulletproof.”

Limiting downtime

IMSAMET of Arizona relies on Road Machinery, LLC to acquire and maintain its loaders. The business currently works with Territory Manager Earl Stagger.

“Road Machinery takes great care of us, from every standpoint,” reported Presley. “Anytime we need something, they are right on it. We take care of most of the maintenance ourselves, but Road Machinery handles major items that require cab removal. They have always been upfront and honest on pricing, availability of



Road Machinery Territory Manager Earl Stagger (left) calls on IMSAMET of Arizona Maintenance Manager Andre Presley. “He’s been our rep for a short time, but we have developed a solid relationship,” said Presley. “Earl and Road Machinery understand how vital it is to limit our downtime, and they do everything possible to ensure that’s the case.”

parts – they usually have what we need on hand – and when they can get to us for service.

“Earl is fantastic, too,” added Presley. “He’s been our rep for a short time, but we have developed a solid relationship. Whenever I call or email, he responds quickly. Earl and Road Machinery understand how vital it is to limit our downtime, and they do everything possible to ensure that’s the case.” ■



Lloyd Garvin,
Mechanic



BENCHMARK CIVIL CONSTRUCTION

Napa site contractor starts fast, thanks to owners' reputation for quality work



Jonathan Gentry,
Partner

When brothers Joel and Jonathan Gentry teamed up with Chad Yates and founded Benchmark Civil Construction in 2010, they already had customers ready to hire them. "They knew us from our previous employer and liked the quality of our work," said Jonathan. "It gave us an immediate customer base and a fast start. We still service many of them. In fact, approximately 90 percent of our projects are for repeat customers."

The trio leveraged their reputation and quickly built upon it. Within a few years, they grew from a three-man start-up to a multi-faceted enterprise that offers a full complement of earthwork-related services in and around the Napa Valley. Based in the heart of California's wine country, Benchmark caters to the local economy.

"Private projects make up the bulk of our work load, including site work for vineyards," said Jonathan. "If a builder wants a wine cave, we will cut the portal entrance into the hillside, then turn over the tunneling to another contractor."

In addition to vineyards, a significant portion of Benchmark Construction's work is one-off custom home sites for builders and developers. The firm performs mass and fine grading; installs underground lines and associated structures for water, storm, sewer, gas and electric; and puts in septic systems.

"We also handle asphalt paving for streets, driveways and parking lots, including full construction, overlays, patching and chip sealing," said Jonathan. "Our customers like that we provide multiple services. They also appreciate our willingness to collaborate with them to value engineer, if that's what they want."

Sold on Komatsu tight-tail-swing excavators

Benchmark Civil Construction relies heavily on Komatsu tight-tail-swing excavators, including its original PC78US, which was purchased before the owners started the company. "That machine sold us on Komatsu right away, and continues to reinforce our decision," Jonathan recalled. "Not long ago, I was using it to dig an irrigation line on a hillside for a winery and had to move a large boulder. Although the 10-year-old PC78 wouldn't pick it up, it could grab and drag it out of the way. A few days later I had to move it again, but a practically new, comparable-size, competitive excavator wouldn't budge the rock."

Benchmark also uses PC88MR, PC138USLC and PC228USLC models. "Across the board, we



Operator Zach Yates hammers a block wall with a Komatsu PC138USLC excavator on a Benchmark Civil Construction jobsite in Napa. "Like our other Komatsu excavators, it's smooth and has plenty of power," said Yates.





► VIDEO

Benchmark Civil Construction uses Komatsu tight-tail-swing excavators, including this PC228USLC. “Across the board, we get excellent production, both in limited-space digs and in open areas,” said Partner Jonathan Gentry. “The Komatsu excavators have excellent hydraulic power, so we can also run attachments, such as hammers, a grinding wheel and some rock buckets with ripper shanks. We have confidence that they will perform at a high level.”

get excellent production, both in limited-space digs and in open areas,” Jonathan emphasized. “The Komatsu excavators have excellent hydraulic power, so we can also run attachments, such as hammers, a grinding wheel and some rock buckets with ripper shanks. We have confidence that they will perform at a high level.”

Benchmark Civil Construction works with Road Machinery Account Manager Jason Ketchum for sales and rentals, and the firm turns to Road Machinery as needed for parts and service. “Dealer support plays a factor in our equipment decisions, and Jason and Road Machinery have always been very responsive,” said Jonathan. “That’s another reason why we continue to use Komatsu excavators.”

Staying in the sweet spot

Benchmark Civil Construction’s project list varies greatly from year to year, depending on the scope of its jobs. What the owners don’t want to change is the company’s size – currently at about 20 employees.

“We have tried bigger and found that it wasn’t better,” said Jonathan. “Our



Road Machinery Account Manager Jason Ketchum (left) calls on Benchmark Civil Construction Partner Jonathan Gentry. “Dealer support plays a factor in our equipment decisions, and Jason and Road Machinery have always been very responsive,” said Gentry. “That’s another reason why we continue to use Komatsu excavators.”

commitment to customers and being able to ensure that we continue to give them outstanding service is very important to us. We found our sweet spot and plan to stay there.” ■

A GOOD START

Tax law provides positives for construction businesses, but work still needed to fix Highway Trust Fund



Stephen E. Sandherr,
CEO, AGC

Congress passed comprehensive tax reform legislation that will lower rates, spur economic growth and impact construction businesses for years to come. However, this process did not start as well as it ended for the construction industry.

Initially, the tax reform bill provided little relief for many construction firms organized as pass-throughs, such as S-corporations, limited-liability corporations and partnerships; eliminated Private Activity Bonds essential for financing transportation infrastructure, low-income housing and other public construction and public-private partnership

Stephen E. Sandherr, Chief Executive Officer of Associated General Contractors of America, says the tax legislation passed late last year was a win for construction businesses, but it failed to address the long-term solvency of the Highway Trust Fund. The association continues to focus on rebuilding infrastructure and modernizing multi-employer pension plans.

projects; and repealed the Historic Tax Credit, critical to the private construction market for the rehabilitation and renovation of historic buildings.

Lobbying pays dividends

Associated General Contractors continued to fight for a better outcome for the construction industry through a rigorous lobbying campaign. Efforts included connecting construction company chief financial officers and certified public accountants with tax writers as well as generating thousands of pro-construction messages from members to key legislators. Our work helped convince members of Congress to ultimately reduce the corporate rate by 14 points; lower individual and pass-through rates; double the estate and gift-tax exclusion to \$11 million; ensure that the tax-exempt status of Private Activity Bonds remains untouched; and prevent full repeal of the Historic Tax Credit.

Future focus

That stated, there is still much work to be done in our nation's capital in 2018. Although Congress missed an opportunity to address the long-term solvency of the Highway Trust Fund via tax reform, we remain focused on ensuring that this administration keeps its promise to rebuild the nation's infrastructure. And, we are committed to efforts to modernize multi-employer pension plans for the future, among other priorities for the industry. ■

Editor's note: This article is from a statement by Stephen E. Sandherr, Chief Executive Officer of the Associated General Contractors of America (AGC), regarding final passage of federal tax reform known as H.R. 1, The Tax Cuts & Jobs Act. A chart with information pertaining to the law is available at AGC's website, www.agc.org.



ARTICULATED TRUCKS

KOMATSU

MODEL	MAX WEIGHT	PAYLOAD	CAPACITY	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

CRAWLER DOZERS

KOMATSU

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/Sig	5.9 yd	11'2"	205	T4F
D65PX	49,315 lbs	PAT/Sig	5.78 yd	13'2" LGP	205	T4F
D65EXi	49,559 lbs	PAT/Sig	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.

HYDRAULIC EXCAVATORS

KOMATSU

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
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

MOTOR GRADER

KOMATSU

MODEL	WEIGHT	MOLDBOARD	DRIVE	H.P.	TIER
GD655	37,346 lbs	14'0"	4WD	218	T4F

WHEEL LOADERS

KOMATSU

MODEL	WEIGHT	TIPLOAD	CAPACITY	BREAKOUT	H.P.	TIER
WA200	26,100 lbs	18,971 lbs	2.5 yd	24,251 lbs	126	T4I
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

CRAWLER CARRIERS

TERRAMAC

MODEL	CAPACITY	H.P.	WEIGHT	TIER
RT9	18,000 lbs	230	26,000 lbs	T3
RT14	28,000 lbs	280	32,700 lbs	T3
RT14R	28,000 lbs	320	40,000 lbs	T4F

HYDRAULIC BREAKERS

NPK

MODEL	ENERGY CLASS	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 ft lbs	PC400-490	7,800 lbs

MATERIAL PROCESSORS & SHEARS

NPK

MODEL	JAW OPENING	JAW TYPE	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

DOUBLE DRUM ROLLERS

DYNAPAC

MODEL	WIDTH	WEIGHT	H.P.	TIER
CC900/950	35"	3,500 lbs	24	T4F
CC1200	47"	5,900 lbs	25	T4F
CC1300	51"	9,000 lbs	49	T4F
CC4200	66"	23,000 lbs	130	T4F
CC6200	84"	33,500 lbs	130	T4F

SINGLE DRUM ROLLERS

DYNAPAC

MODEL	WIDTH	WEIGHT	H.P.	TIER
CA1300D	54"	10,000 lbs	75	T4F
CA1400D	66"	14,000 lbs	75	T4F
CA2500D	84"	25,000 lbs	130	T4F

PAD FOOT ROLLERS

DYNAPAC

MODEL	WIDTH	WEIGHT	H.P.	TIER
CA1300DPDB	54"	10,000 lbs	75	T4F
CA1400DPDB	66"	14,000 lbs	75	T4F
CA2500/3500DPDB	84"	25,000 lbs	130	T4F
CT3000 TAMPING COMP		49,000 lbs	260	T4F

PNEUMATIC ROLLERS

DYNAPAC

MODEL	WIDTH	WEIGHT	H.P.	TIER
CP1200	69"	12.5k-28.5k lbs	74	T4F
CP2700	72"	27k-60k lbs	110	T3

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A CLOSER LOOK

NEW OSHA RULES

Standards reduce silica dust exposure limit, add compliance requirements



**James R. Waite, Esq.,
Attorney at Law**

James R. Waite, Esq. is an equipment industry attorney. He authored the American Rental Association's book on rental contracts and represents equipment sellers and lessors throughout North America on a wide range of issues.

A new Occupational Safety and Health Administration (OSHA) rule regarding respirable crystalline silica dust in the construction industry requires covered employers to comply with stricter exposure limits and take steps to protect workers. OSHA reduced the exposure for construction activities to 20 percent of the previous permissible limit (from 250 micrograms per cubic meter of air to 50) averaged throughout an eight-hour shift. The previous standard had been in place since 1971. These new regulations for the construction industry went into effect last fall.

Crystalline silica is a common earth mineral that can be found in sand, stone and other materials. Respirable crystalline silica – very small particles, at least 100 times smaller than ordinary sand – is generated when cutting, sawing, grinding, drilling and crushing stone, rock, concrete, brick, block and mortar, among others, as well as in general excavation. The smaller the particles, the deeper they penetrate into the respiratory tract.

Respirable crystalline silica is generated when cutting, sawing, grinding, drilling and crushing stone, rock, concrete, brick, block and mortar, as well as in general excavation. About 2.3 million people in the United States are exposed to silica at work annually.



"Silica particles are thrown into the air, and at 10 micrograms they get into your mouth and the top of your throat," said attorney and author James R. Waite, Esq., who helps companies comply with regulatory standards. "At three to five micrograms, it gets into the chest area and under 2.5, silica dust settles into the lungs and never leaves, which can lead to silicosis and other conditions."

Silicosis is an incurable lung disease that can lead to death or disability. Lung cancer, chronic obstructive pulmonary disease and kidney disease can also result from respirable silica dust exposure. OSHA estimates the updated standard will prevent 600 deaths and more than 900 cases of silicosis annually.

Options, added steps

About 2.3 million people in the United States are exposed to silica at work each year. Employers have options to meet the standard such as using water to keep dust from getting into the air and proper vacuum dust-collection systems that include HEPA filtration. Utilizing approved respirators with an assigned protection factor of at least 10 under certain conditions, such as sawing more than four hours per day outside or anytime inside, is required.

Additional requirements of the new OSHA standard include:

- Assessing employee exposure to silica, if it is at or above an action level of 25 micrograms per cubic meter of air averaged throughout an eight-hour day and limiting access to high-exposure areas.
- Establishing and implementing a written exposure-control plan, which identifies tasks that involve exposure as well as methods used to protect workers, including procedures to restrict access to work areas where high exposures may occur.



- Designating a competent person to implement the written control plan.
- Restricting housekeeping practices that expose workers to silica, such as the use of compressed air without a ventilation system to capture the dust and dry sweeping where effective, safe alternatives are available.
- Offering medical exams – including chest X-rays and lung-function tests – every three years for workers who are required by the standard to wear a respirator for 30 or more days in a given year.
- Training workers on the health effects of silica exposure, workplace tasks that can bring them into contact with silica, and implementing alternative means of limiting exposure.
- Keeping records of workers' silica exposure and medical exams.

OSHA training requirements for workers must include instructions on the health hazards of silica dust, a list of workplace tasks that can result in exposure, steps their employer has taken to protect employees and the purpose of the medical exams. Workers should be able to demonstrate knowledge of the topics during an OSHA investigation. Penalties include a fine of \$12,741 per violation, generally assessed per day for failure to abate and \$124,709 per violation for "willful" or "repeat" violations.

"No one can tell by just looking if they're at or above the monitoring level, so it's best

to monitor," said Waite. "If you are below 25 micrograms per cubic meter, great. If not, it's critical to meet the requirements to avoid violations and potential liability that could lead to legal claims."

Waite said there are additional steps that companies can take to protect themselves and workers such as putting stickers on equipment that warn of potential exposure and posting signs at all entry and exit points to and from regulated areas. When cleaning equipment, individuals should never use compressed air and the person(s) performing the task should wear protection such as a proper respirator.

No excuses

A separate standard was created for general and maritime industries. It, along with rules for hydraulic fracturing, goes into effect June 23, 2018.

OSHA has programs that provide assistance to help small- and medium-size firms comply with the standards. It also has fact sheets available online at osha.gov.

"Contamination and the associated legal liabilities are nothing new," said Waite. "But, when governmental agencies like OSHA begin modifying long-accepted standards, business owners are wise to take action. Enhanced focus on regulations tends to yield similar enhancements in enforcement, making arguments such as, 'We've done it this way for 30 years,' largely irrelevant." ■

A new Occupational Safety and Health Administration rule regarding respirable crystalline silica dust reduced the previous exposure limit to 50 micrograms per cubic meter of air averaged throughout an eight-hour shift. Employers have options to meet the standard such as using water to keep dust from getting into the air, proper vacuum-dust collection systems and approved respirators.

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WORKS FOR ME™

**"I'VE USED THEM ALL AND
KOMATSU IS THE BEST."**

TAD GRIFFITHS / ROYAL T ENTERPRISES / UTAH

"Komatsu's i-machines definitely make my operators better at what they do. I mean, we haven't been using this technology for the past twenty years, so it's pretty new. But this tech makes it easier to do our job—makes it so that my operators can work more efficiently, and we get a better finished product."



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THAT'S WHY I AM KOMATSU

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028

PRODUCT INTRODUCTION



Discover more

INTELLIGENT EXCAVATOR

New model offers added stability, excellent over-the-side lift capacity in efficient combo package

Have you ever wanted more? The PC390LCi-11 excavator from Komatsu provides more stability, achieving excellent balance among power, speed and fine control. This machine utilizes the upper structure and engine of the PC360LC models and the undercarriage of a 400-class machine. Now, Komatsu has taken that concept and made it intelligent with the introduction of its new Tier 4 Final PC390LCi-11.

"The *intelligent* Machine Control PC390LCi-11 delivers the exceptional production and speed of the PC360LCi-11, with full-factory, 3-D Global Navigation Satellite System machine control along with increased stability from its up-sized undercarriage," said Komatsu Product Specialist Renee Kafka. "This makes for the perfect combination in applications such as utility or wherever heavy lifting occurs."

The 257-horsepower PC390LCi-11 is the fourth installment in the *intelligent* Machine Control excavator lineup. It leverages the proven technology first introduced on the PC210LCi-10, including semi-automatic operation that goes beyond traditional indicate-only systems. Once target elevation is reached, the machine keeps the operator from digging deeper, eliminating overexcavation and the need for expensive fill.

intelligent Machine Control benefits

The Steer-to-Polyline feature helps operators actively dig to a center line, keeping a utility trench on track and minimizing waste. It's also easy for operators to create simple surfaces quickly for pipe runs by themselves.

"To increase comfort and convenience, the PC390LCi-11 comes standard with the machine-control-enhanced joysticks that were initially introduced on the PC210LCi-11," noted Kafka. "Whether it is production excavating, utility trenching or heavy-attachment work, this machine helps make operators' jobs easier, while reducing material costs by minimizing overexcavation." ■



Renee Kafka,
Komatsu Product
Specialist

Quick Specs on Komatsu's PC390LCi-11 Excavator

Model	Net Horsepower	Operating Weight	Bucket Capacity
PC390LCi-11	257 hp	87,867-90,441 lb	.89-2.91 cu yd

Komatsu's PC390LCi-11 delivers the exceptional production and speed of the PC360LCi-11, with full-factory, 3-D Global Navigation Satellite System machine control along with increased stability from its up-sized undercarriage, making it a great fit for trenching or heavy-application work.





Discover more

TIGHT-TAIL-SWING PERFORMANCE

New excavator delivers outstanding lift capacity; KomVision bird's-eye-view camera available



Andrew Earing,
Product Manager,
Tracked Machines

V You can get dynamite performance in a small package. Komatsu's Tier 4 Final PC238USLC-11 proves it with a heavy counterweight mass and rounded cab that provide true tight-tail-swing performance and greater lift capacity than most conventional excavators of the same size. And, it boosts productivity up to 4 percent compared to the Dash-10 with a new viscous fan clutch that lowers engine parasitic loads.

"The PC238USLC-11 maintains the tight-tail-swing radius of its predecessor,

making it well suited for utility and highway applications and when working in confined spaces," said Andrew Earing, Product Manager, Tracked Machines. "The machine's contoured cab profile and sliding door allow the cab to swing within the same radius as the counterweight. The additional counterweight remains standard, giving the PC238USLC-11 equal or better lift capacity than conventional models in the same size class."

The PC238USLC-11 is available with Komatsu's new KomVision, a bird's-eye-view camera system that combines input from three cameras into a surround-view image of the machine and its environment that improves operators' situational awareness.

Komatsu's PC238USLC-11 excavator features a heavy counterweight mass and rounded cab that provide true tight-tail-swing performance and better lift capacity than most conventional excavators of the same size. A new viscous fan clutch lowers engine parasitic loads, increasing productivity up to 4 percent.

Monitor panel improvements

Komatsu upgraded the high-resolution, LCD monitor panel, incorporating the standard rearview camera display with gauges. "Ecology Guidance" provides fuel-saving information to the operators, and they can still choose from six working modes to most effectively match the application, attachment and working conditions.

"In addition to the PC238USLC-11 measuring 40 percent shorter than the conventional PC210LC-11, this machine offers class-leading serviceability with quick access to the DEF pump and filter, PPC valves, batteries and aftertreatment components," said Earing. "Durability is second-to-none, with thick-plate steel used on the revolving frame, heavy-duty boom and arm structures, and easy-to-access cooling-system-debris screens. Overall, the PC238USLC-11 is a true purpose-built, short-tail excavator designed and crafted to outlast the competition." ■



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"We have a Komatsu PC210LCi and it's been better than I even expected. The speed and time you save just having your line work and not having to worry about over excavating—that's huge. I hated those bigger commercial jobs where you'd have hundreds of stakes marking all your corners, offsets and gridlines. And to not have a need for any of that, especially if it's an export site or it doesn't even really have to be, just room for your spoil piles. Keeping track of corners—major time saver! I'd say, with iMC, I'm about a third faster getting the job done."

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"Using and understanding the new product technology, available from Komatsu for our business, made me apprehensive at first. But our dealer and their technical support have worked with us to help us make the tech work for our needs. I am seeing the benefits now. I'm on board and love it!"



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029



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GETTING TO GRADE FASTER

Earthwork, pipeline contractor eliminates overcutting with Komatsu PC490LCi-11 excavator

When Randy Ellis and his wife, Trisha, prepared to build a home on the family's ranch, he was shocked at the price to purchase 300 loads of dirt for the pad. Instead of paying for the material, Ellis bought a dump truck and a rubber-tire backhoe, dug a pond on his property and used the dirt for the house pad. While he didn't realize it at the time, this was the origin of what today is a successful earthwork and pipeline business, R&T Ellis, Inc.

Nearly a year ago, R&T Ellis purchased its first Komatsu excavator, an *intelligent* Machine Control PC490LCi-11.

"We already had used Topcon aftermarket GPS, so I liked that Komatsu integrated it into its *intelligent* Machine Control products," said Ellis. "It saves us time and money by eliminating the need to put up and take down the masts, and we no longer worry about them getting damaged or stolen."

R&T Ellis recently put the PC490LCi to work on a project that involved digging a canal from a river to a treatment plant in preparation for bringing a new supply of drinking water to a major U.S. city. The company's role included clearing 350 acres, building a six-and-a-half mile gravel access road to the canal, installing piping and moving more than 650,000 yards of earth.

"It's like a knife through butter," shared R&T Ellis Operator Sergio Bellestros about his experience in digging with the excavator on the canal project. "With the built-in GPS, I can get to grade without worrying about overcutting or having to leave it at a certain elevation for a dozer to finish."

Plug in plans and go

The excavator utilizes 3-D design data loaded into the machine's monitor to accurately display machine position relative to target grade. When the bucket reaches the target surface, automation kicks in to limit overexcavation.

"What stands out (about the PC490LCi) is the increased production and efficiency. We simply plug the plans into the machine and go to work. With minimal staking, we can put everything to grade faster and without the concerns about overcutting or needing someone to constantly check grade," noted Ellis. ■



Randy Ellis,
President

R&T Ellis Operator Sergio Bellestros loads trucks with a Komatsu *intelligent* Machine Control PC490LCi-11. "It's like a knife through butter," described Bellestros of digging with the excavator. "With the built-in GPS, I can get to grade without worrying about overcutting or having to leave it at a certain elevation for a dozer to finish."

► VIDEO



NEW HORIZONS

New Director of Training and Publications Bill Chimley aims for world-class results



Bill Chimley, Director of
Training and Publications

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.

Bill Chimley took over as the Director of Training and Publications at the Komatsu Cartersville Customer Center in Cartersville, Ga., in October 2017. Prior to that, he served for five years as the General Manager of the Supply Chain Division at the Chattanooga Manufacturing Operation facility. "I am very excited to be here in this new position," said Chimley. "We host some incredible events for both our customers and employees. From Demo Days to daily training classes, we have a lot of traffic through this facility."

Chimley has 13 years of experience with Komatsu. He worked as a District Sales Manager covering multiple South Region distributors before moving to the Supply Chain Division in 2010 when he was named Manager of Customer Support and Logistics. In 2012, Chimley was promoted to the General Manager position, where he was responsible for the planning, ordering and logistics of mining, construction, utility and forestry machines in North America.

At each stop, Chimley has focused on improvement strategies. "Komatsu America practices a philosophy called 'Kaizen,' which means continual improvement," explained Chimley. "In every position, I've tried to raise the bar, whether that means implementing inventory forecasting process improvements or designing how we use technology to deliver training and publications materials, Komatsu is very supportive."

Away from the office, Chimley enjoys spending time with his wife and two teenage daughters. They love to travel and listen to music together. Chimley's ideal get away would be trout fishing in a cold mountain stream on a sunny spring day.

QUESTION: How does Komatsu America's Training and Publications team lead the world?

ANSWER: Due to the timing of the engine emission requirement in North America, we needed to develop new-model training and publication materials first. This means our training and publications development teams have blazed the trail since 2011. Because we have experience being content-development leaders, we also need to take the lead in using digital-learning platforms and the latest technologies available. We want Komatsu America Training and Publications to be a center of excellence.

QUESTION: What is your vision for the Training and Publications area?

ANSWER: Our vision is to continue a strong foundation of material development while using the latest technology to increase the effectiveness of our material delivery. Through technological advances, the speed and ease of learning is expanding exponentially, allowing Komatsu customers, distributors and employees to easily access our offerings.

QUESTION: How do you plan to maximize the effectiveness of the Cartersville Customer Center?

ANSWER: To anyone who has yet to visit the Cartersville Customer Center, we extend an open invitation. During the past 12 months, we have hosted the highest number of visitors since the facility opened in 2001. Our amenities include a 35-acre demo site; a beautiful 40,000-square-foot main building with multiple classrooms, offices and state-of-the-art auditorium; as well as a 20,000-square-foot shop – all situated on 600 acres just north of Atlanta. Visitors are absolutely blown away by this facility. Our primary goal



Spring and fall Demo Days are the two most visible events at the Cartersville Customer Center, according to Director of Training and Publications Bill Chimley.

is to share resources with our distributors and affiliate business partners by providing world-class training, demonstration and meeting facilities.

QUESTION: Are other types of events held at the center?

ANSWER: While the two most visible customer events are Demo Days each spring and fall, we also host approximately six major annual training events covering all aspects of our business. Filling in the day-to-day of our calendar are numerous technical, operator and sales class offerings. The center is a versatile facility with an incredible support staff that creates a safe and effective learning environment.

QUESTION: How do you see the Cartersville Customer Center evolving in the next few years?

ANSWER: We are in the process of upgrading our wireless network to enable full connectivity of people, machines and classrooms – even beyond our campus. A growth area in 2018 is live-streaming class videos, which will allow technicians, for example, to stay in the field and participate in training without losing precious days due to travel.

Last spring, we completely redesigned the theatre, which also doubles as our largest classroom. This winter, we made upgrades to the demo site, making it both safer and more functional, especially to support SMARTCONSTRUCTION technologies. Future visions for the Cartersville Customer Center include developing a quarry demonstration area to offer a more realistic operation experience, creating an executive briefing area where we can learn from our customers and share Komatsu's total business solutions, and making this facility a center of excellence for all of our publications. ■



Director of Training and Publications Bill Chimley (far right) listens as a group of Komatsu sales representatives participate in a training session inside the Cartersville Customer Center's newly renovated theatre.

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"Komatsu has been a great partner for us. They've been with us through the years, even when we started small and not many other places wanted to talk to us. They believed in us and helped us grow. From a custom financing plan to tech like KOMTRAX, to customer service and Komatsu CARE, and of course reliable products—they offer everything to help our bottom line grow." **Rachelle Reigard, President**

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CASE STUDY



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BUSINESS SOLUTIONS GROUP

Team assesses Madden Materials' operations; improvements save enough to buy additional equipment

Approximately two years ago, Joe and Sofia Regalado acquired Madden Materials, adding to the couple's already hefty work load as they operated a trucking company and another material supply business. The new venture came with challenges, so they turned to their local Komatsu distributor, who connected them with the Business Solutions Group to help formulate an action plan.

The Business Solutions Group offers bottom-line tactics that maximize production and efficiency. The group studies customers' existing operations, considers alternatives and provides recommendations. The service is complimentary.

In Madden Materials' case, the Business Solutions Group partnered with the distributor to conduct an Optimized Fleet Recommendation (OFR) study on how to move sand from the pit to a new wash plant most effectively. Members of the Business Solutions Group took into account the productive potential of various sizes of excavators, wheel loaders and trucks to identify the most efficient fleet, depending on production needs and other factors.

"They assessed the site – how we load, haul distance, tons of product the plant needed per hour – and determined that smaller units would be best," said Owner/Chief Executive Officer Joe Regalado. "They projected operating costs by considering fuel, operator pay, maintenance and more."

Before the study, Regalado was convinced he needed to add a large truck, possibly a 60-ton rigid frame, and pair it with an existing 50-ton-plus excavator. The Business Solutions Group showed him other options, including using a Komatsu 30-ton articulated dump truck and a PC360LC excavator.

Money-saving strategies

"The same production with smaller equipment means less fuel and maintenance as well as lower overall costs," said Regalado. "The study saved us enough money that we could buy a second WA380 loader. The assessment was done at no charge. That's an incredible benefit, and they have finished a second OFR study to determine our present and future needs as we continue to expand and move farther away from the plant." ■



Joe Regalado,
Owner/Chief
Executive Officer,
Madden Materials

Komatsu's Business Solutions Group recommended a smaller articulated haul truck, an HM300, as part of its assessment of Madden Materials' operations. "The same production with smaller equipment means less fuel and maintenance as well as lower overall costs," said Joe Regalado, Owner/Chief Executive Officer.

► VIDEO



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NEW REMAN FACILITY

Komatsu helps customers save money, boosts availability of high-quality remanufactured products

If you need to replace components, or even an engine, you want the most-cost effective solution possible. Oftentimes, that may involve using the high-quality remanufactured products available through Komatsu's reman facilities.

Recently opened, and located at the Chattanooga Manufacturing Operation, the reman facility grew out of a fact-finding effort in Komatsu's Reman/Overhaul Group led by Senior Product Manager Goran Zeravica and Product Manager Michael Carranza. One of their first steps involved talking with customers and Komatsu distributors to gauge their expectations.

"They provided valuable feedback to act upon, including the need for expanding our availability and offering of reman products," shared Zeravica. "That's one of the reasons we opened a new reman facility; the other reason was to expand engine-testing ability for our customers. The new facility supplies like-new engines that meet Komatsu's stringent standards, so customers can rest assured they are getting quality, reliable products with long lives."

Substantial inventory

Komatsu has already amassed an extensive inventory. Reman products are available from various sources such as the Ripley Parts Operation, Peoria Parts Department and regional parts depots.

"Availability and fast access are vital to minimizing downtime," said Carranza. "A good inventory ensures that when an order is placed, a replacement item is shipped right away. Once the repair is complete, the customer can send in their used component, and we will give them a credit for it."

Quality confidence

Komatsu demonstrates its confidence in reman products by providing two warranties*:

Komatsu Genuine Reman Warranty Coverage (Standard):

- Applies to Genuine Reman components
- One year
- Unlimited hours

Komatsu Genuine Reman Component Quality Assurance:

- Applies to engines, transmissions, torque flows, final drives, differentials, axle assemblies, travel motors and main hydraulic pumps
- Four years
- Prorated, up to 10,000 hours ■

** Additional qualifications are required. Talk to your Komatsu distributor for more information.*



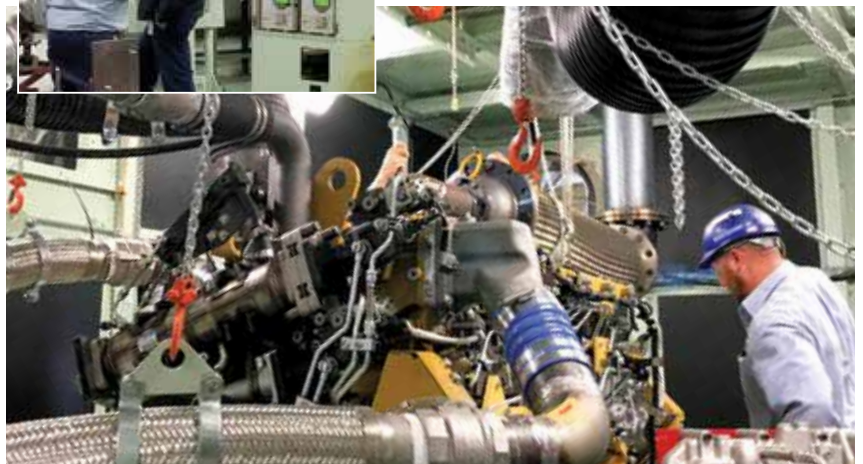
Michael Carranza,
Product Manager



Goran Zeravica,
Senior Product Manager



Komatsu's new reman facility brings original equipment manufacturer expertise to the table, while boosting availability through reman and retesting capabilities.



DRIVERLESS TRUCKS

Komatsu celebrates 10th anniversary of autonomous haulage system

This year marks 10 years since the commercial deployment of Komatsu's autonomous haulage system (AHS), and based on its proven track record of safety and productivity, the company plans to ramp up the pace of distribution. Komatsu was the first manufacturer in the world to commercialize AHS – driverless trucks – in the mining industry.

More than 100 AHS trucks presently operate in North America, South America and Australia. Running around the clock, they haul three different commodities in six mines. By the end of 2017, Komatsu AHS trucks had recorded a world-leading cumulative total of 1.5 billion tons moved.

According to Komatsu, each truck is equipped with vehicle controllers, a high-precision GPS system, an obstacle-detection system and a wireless network

system. These features allow the trucks to operate safely through a complex load, haul and dump cycle, as well as integrate with dozers, loaders and shovels.

Komatsu began AHS trials in 2005 at a copper mine in Chile and successfully achieved the world's first commercial deployment three years later. A second followed in late 2008 at Rio Tinto's iron ore mine in Australia. The company currently operates AHS trucks in four mines in the Pilbara region of Australia. Rio Tinto controls the system remotely and efficiently from its operations center in Perth, almost 1,000 miles away.

Using AHS, one customer reported improved productivity, reducing load and haul-unit costs by more than 15 percent compared to conventional haulage methods. In addition, optimized automatic controls reduce sudden acceleration and abrupt steering, resulting in 40 percent longer tire life for that same customer. AHS is significantly safer in conventional mining environments, where even a minor driving error could cause a serious accident, according to Komatsu.

New initiatives

To extend the benefits to operations with manned haul fleets, Komatsu conducted and successfully completed trials of its AHS retrofit kit at a Rio Tinto mine in September 2017. It was mounted on an electric-drive standard 830E (220-ton payload) and enabled the truck to operate in autonomous mode. Komatsu plans to expand the AHS retrofit kit to additional models of electric-drive standard trucks. It will also enhance AHS's mixed-fleet operations functions to enable manned haulers of any make to safely interoperate with Komatsu's AHS trucks in a blended fleet. ■

To date, Komatsu's autonomous haulage system (AHS) has recorded a world-leading cumulative total of 1.5 billion tons moved. Using AHS, one customer reduced load and haul unit costs by more than 15 percent compared to conventional haulage methods.





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NO FATALITIES GOAL

Research suggests Safe System and Vision Zero traffic-planning approaches would save lives

Research from the World Resources Institute (WRI) and the World Bank concludes that if all countries adopted a Safe System or Vision Zero approach to safety and traffic infrastructure, nearly a million lives could be saved around the world each year. WRI analyzed data from 53 countries and found that using Safe System tactics achieved both the lowest rates of traffic deaths and the largest reduction in fatalities in a 20-year period.

The report, “Safe and Sustainable: A Vision and Guidance for Zero Road Deaths,” emphasizes the importance of committing to no fatalities, upholding the Safe System principles of shared responsibility and reducing human error; as well as instituting structural fixes like better sidewalks, bike lanes, high-quality public transportation, safer vehicles and faster emergency response, according to WRI. The study says that it’s important for planners to take those factors into account when designing roadways.

Traffic fatalities claim more than 1.2 million lives annually. WRI found that to eliminate road deaths, policymakers must adhere to Safe System tenets: humans make errors and are vulnerable to injury; responsibility for the consequences should be shared, no death or serious injury is acceptable; and the best plan is a proactive, systemic one.

Sweden and the Netherlands began a Safe System program more than 20 years ago and have lowered their traffic fatalities to between three and four deaths per 100,000 residents annually, a decrease of more than 50 percent. The global average is 16.4 fatalities per 100,000 residents and 24.1 per 100,000 in low-income nations. More than 40,000 die on U.S. roadways every year.

Multi-pronged plan

Approximately 30 cities in the United States are using Vision Zero, which is similar to Safe

System. Vision Zero takes the view that traffic deaths and severe injuries are preventable by utilizing proven strategies such as lowering speed limits, redesigning streets, implementing meaningful behavior-change campaigns and enhancing data-driven traffic enforcement. It also demonstrates that planning fosters cross-disciplinary collaboration among local traffic planners and engineers, police officers, policymakers and public-health professionals.

“We can dramatically reduce and eventually eliminate road-crash fatalities if we follow a Safe System approach,” said Soames Job, who heads the World Bank’s Global Road Safety Facilities and is one of the report’s co-authors. “Vision Zero is becoming a popular policy to embrace, but what it really means is committing to zero deaths and building in safeguards. By designing transportation systems for inevitable human error and placing a greater responsibility on officials, road designers and decision makers, we can profoundly reduce road-crash fatalities.” ■

A report from World Resources Institute and the World Bank emphasizes a commitment to no fatalities and upholding principles such as reducing human error, and instituting structural fixes like better sidewalks, bike lanes, high-quality public transportation, safer vehicles and faster emergency response.



Industry pros: Infrastructure investment vital to prosperity

Eighty-two percent of respondents said adequate investment in infrastructure projects is crucial to national prosperity in a global survey by AECOM, which released the findings in a report titled the *Future of Infrastructure*. More than 500 industry professionals from around the world participated, and 39 percent cited a lack of public funding as a major problem.

The survey also found that 67 percent believe that the industry is not evolving fast enough to meet society's changing needs, and

90 percent said innovative funding models are needed and would be effective at bridging the funding gap. Further, 71 percent said that many of the traditional approaches to project management do not fit the demands of today's large, complex programs.

"We know that safe, secure and resilient infrastructure is critical to economic growth and social progress," said Michael S. Burke, AECOM's Chairman and CEO. "The industry must embrace innovation and develop new ways to fund and deliver projects faster, smarter and better." ■

Keene State to offer nation's first construction safety degree

Keene State College (KSC) in Keene, N.H., will offer a Construction Safety Sciences degree program beginning this fall, which the school says is the first of its kind in the nation. According to KSC, the program will prepare students for a variety of occupational safety and health program management positions in both the private and public sectors. The program is designed for three years and two summers, with a total of 120 credits.

KSC noted that the curriculum for the Construction Safety Sciences degree program

emphasizes critical thinking, hazard identification and prioritization, problem solving, cost effectiveness, professional skills in programmatic management plus safety and environmental regulatory compliance. Graduates can pursue a master's degree or transition directly into careers in loss control, risk management, organizational safety or consulting. Students will also have the opportunity to earn a minor in construction safety sciences. Additionally, the college will offer a minor in sustainability beginning this fall. ■

ARTBA, others pleased with high court's ruling on Clean Water Act regulations

Industry organizations such as the American Road & Transportation Builders Association (ARTBA) hailed a unanimous Supreme Court decision, which held that federal district courts were the proper venue for challenging Clean Water Act (CWA) regulations such as the 2015 "Waters of the United States" rule. The Court had been asked to decide whether federal district or appellate courts should hear complaints arising under the CWA.

ARTBA and industry allies asserted that CWA regulatory challenges should be defended at the federal district level, which is closer to where the regulation impacts local projects and landowners. The Environmental Protection Agency claimed that requiring such disputes to start in district court is inefficient and wastes judicial resources, and that cases should begin in federal appellate courts. ■

Komatsu acquires Quadco, Southstar forestry heads

Komatsu acquired Quadco felling heads and Southstar large harvesting heads, adding them to its already stellar lineup of Log Max and Komatsu small and medium-size harvester heads. The acquisition allows Komatsu to offer customers a full range of forestry attachments.

Quadco and Southstar will continue to operate as independent companies within the Komatsu group and will maintain their existing sales networks. To improve value to customers, Komatsu is forming a forestry attachment division within Komatsu Forest AB, which will manage the Quadco, Southstar and Log Max brands. ■

EIA: Wind to blow past hydro in renewable energy production

The U.S. Energy Information Administration (EIA) expects wind to surpass hydroelectric in domestic, renewable-energy production this year. EIA predicts hydropower will fall to 6.5 percent from 7.4 percent of the nation's overall energy output in 2018. Wind generated 6.3 percent last year, and EIA anticipates it will rise to 6.9 percent by 2019. Weather will play a big role in what the final numbers look like at the end of 2018.

"Because few new hydro plants are expected to come online in the next two years, hydroelectric generation in 2018 and 2019 will largely depend on precipitation and water runoff," EIA said in its analysis. "Although changes in weather patterns also affect wind generation, the forecast for wind-power output is more dependent on the capacity and timing of new wind turbines coming online." ■



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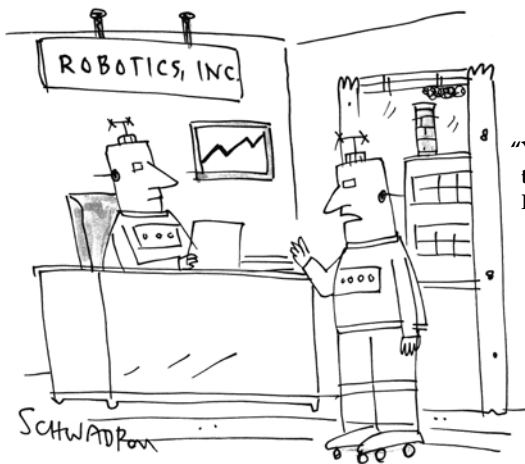
On the light side



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- Hawaii is the only U.S. state that grows coffee.
- Your nose can remember 50,000 different scents.
- Polar bear fur is transparent, not white.
- When you blush, the lining of your stomach also turns red.
- There are 403 steps from the foundation to the top of the Statue of Liberty's torch.
- All pandas in the world are on loan from China.
- Zero is the only number that cannot be represented by Roman numerals.
- During the American Civil War, kites were used to deliver letters and newspapers.
- James Buchanan was the only U.S. President who was never married.
- The first pro baseball games aired on television August 26, 1939 – a doubleheader between Brooklyn and Cincinnati.

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.RMLRoadToSuccess.com

1. GNIGIDG _ _ _ G _ _ _ _ _
2. TEFEL _ _ _ E _ _ _
3. LMCAP _ _ _ _ M _ _
4. ORDO _ _ _ _ _
5. NFA _ _ _ _



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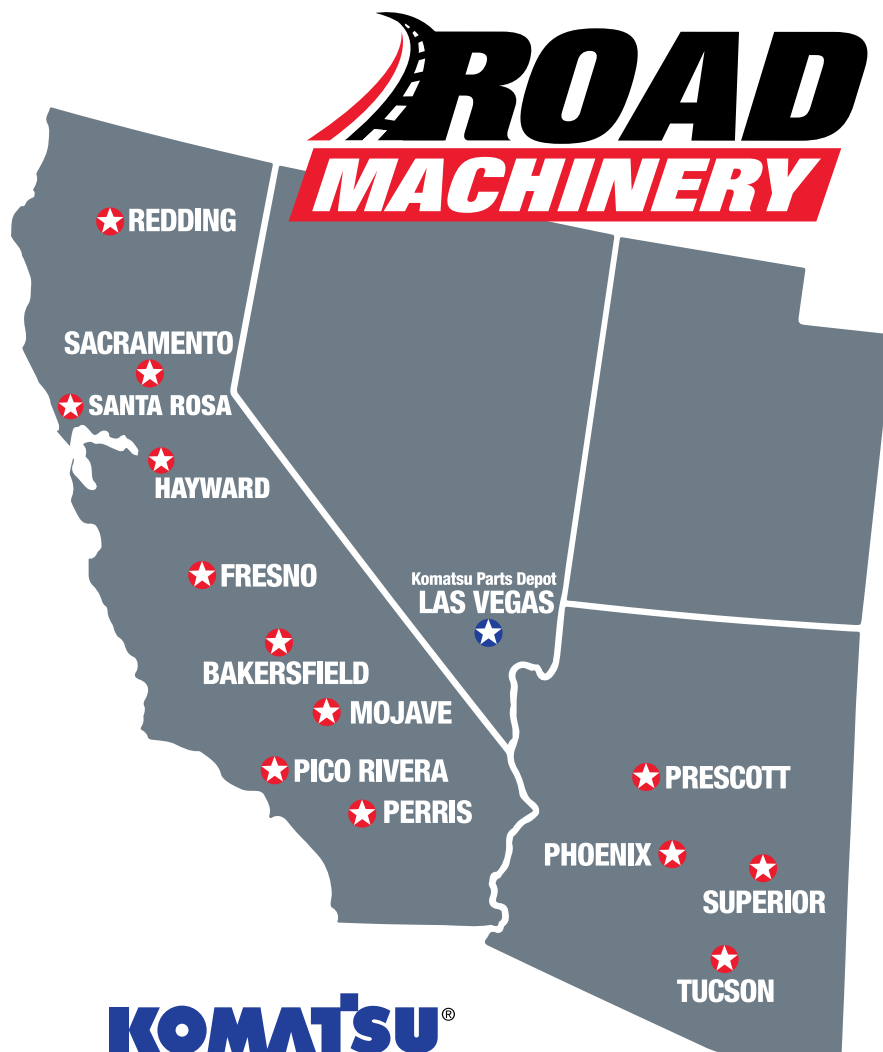
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