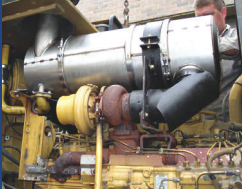


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Machines offer solutions to match changes
in job requirements **p. 38**

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CONSTRUCTION EQUIPMENT

January 2010 • Vol. 113, Issue 1

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RUNNING GREEN

24 How to Get Uncle Sam to Pay for Equipment Updates

The U.S. government is offering hundreds of millions of dollars in incentives to clean up diesel exhaust stacks in the field today through grant programs. Getting the money is a competitive process, but any equipment owner willing to work for it can get a share of the money to help pay for emissions-related repowers, rebuilds, retrofits or even machine replacements. Their machines will not only work cleaner, but more powerfully and fuel efficiently. Winning grant proposals draw together smart alliances of equipment professionals and dealers to work with local governments that want cleaner air.

In 2009 and 2010, the Environmental Protection Agency is distributing up to \$120 million for clean diesel activities courtesy of EPA appropriations, and the American Recovery and Reinvestment Act of 2009 has already added \$300 million. Diesel clean-up money is disbursed through the National Clean Diesel Emissions Reduction Program, sometimes referred to as "DERA," which was created by the Energy Policy Act of 2005. Executive editor Larry Stewart gives you the information you need to collect from Uncle Sam.



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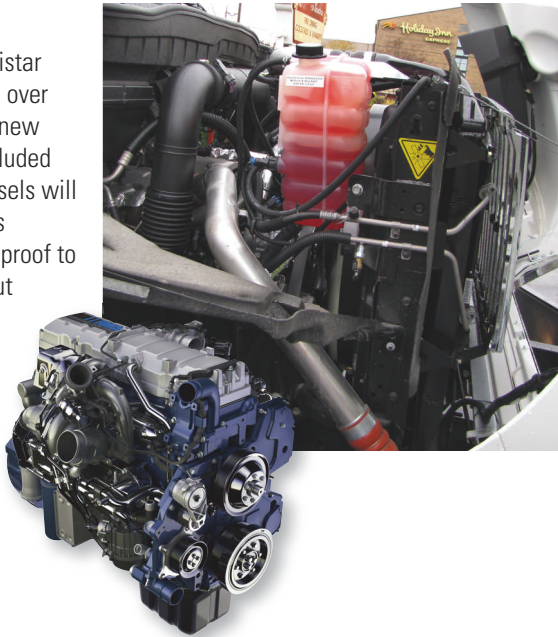
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HANDS-ON TRUCKING

32 Navistar's 2010 Diesels Keep Their Cool

Verbal skirmishing between Navistar International and its competitors over their two paths toward meeting new exhaust emissions limits has included charges that Navistar's 2010 diesels will run hot. Not so, the company has declared, and it recently offered proof to trade-press editors. Engineers put some of us into several International trucks for a driving experience, and we saw that their '10-model MaxxForce engines were energetic but cool performers, at least under cool and wet conditions, says truck editor Tom Berg.



BUYING FILE

38 Slipform-Paver Makers Are Quick to Respond

Speed and the paving process may not have always been associated with one another, but let there be no doubt that the ability to change on the fly is more important than ever for paving contractors. Equipment manufacturers are taking heed. Senior editor Mike Anderson details the latest paving equipment on the market.



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EDITORIAL STAFF

Rod Sutton, Editor in Chief
rsutton@reedbusiness.com
630/288-8130

Larry Stewart, Executive Editor
lstewart@reedbusiness.com
314/962-0639

Mike Anderson, Senior Editor
michael.anderson@reedbusiness.com
519/986-1789

Andrew Baltazar, Associate Editor
andrew.baltazar@reedbusiness.com
630/288-8087

Katie Weiler, Managing Editor
kweiler@reedbusiness.com
630/288-8142

Tom Berg, Truck Editor

Mike Vorster, Contributing Editor

Andy Agoos, Contributing Editor

PUBLISHING OFFICES

Reed Business Information
2000 Clearwater Drive,
Oak Brook, IL 60523; Fax: 630/288-8185

Rick Blesi, Director - Construction Equipment
rblesi@reedbusiness.com

Dawn Batchelder, Marketing & Client
Services Coordinator
dawn.batchelder@reedbusiness.com

Bruce Ksiazek, Director of Finance

Karen A. Ruesch, Production Director

Eletta Harris, Production Manager

Angela Tanner, Audience Marketing Manager

Karthik Krishnan, VP Interactive
Media & Sales Management

Bill Patton, Creative Director

Michael N. Smith, Senior Art Director

Monina Tan-Pipilas, Production Artist

SPEC CHECK: Spec-Check.com

Bill Borthwick, Manager Product Analysis
william.borthwick@reedbusiness.com

Mac Wilcox, Manager Database
mac.wilcox@reedbusiness.com

REPRINTS

Reprint Management Services

Lyndsay Bahn, 717/666-3052

constructionequipment@theygsgroup.com

REED BUSINESS INFORMATION

John Poulin: CEO/CFO, RBI-US

Jeff DeBalko: President of Business Media/
Chief Internet Officer

Dean Horowitz: General Manager-
Construction Media

Emissions Hopes and Fears

Truth prevails. At least that's the hope of sensible people. Recent developments in California have raised hopes that CARB may begin looking realistically at the draconian measures it has forced upon equipment owners in its efforts to restrict diesel emissions.

As executive editor Larry Stewart reported in our Big Iron blog last month, a PhD scandal and an AGC study of projected emissions have put CARB in the spotlight and on the spot. Although the board rejected a call to repeal the state's Truck and Bus rule on Dec. 11, there is a sense that CARB finally understands the economic ramifications of its actions.

But as managers relax on California, they need to keep a keen eye on Washington.

The U.S. EPA has used nonattainment areas to enforce clean air regulations, and there it looks like more will be added this spring. If so, more counties will be deemed "unclean" and the door will be opened for stricter emissions controls on equipment operating within them.

We have been hearing rumblings about this, but it wasn't until an event in Cincinnati that we saw the proposed map. The event, presented by AEMP in cooperation with *Construction Equipment*, featured a presentation by Joe Mastanduno of John Deere, who said the proposed changes will take effect in April.

The means by which the EPA is expanding the list on nonattainment counties, however, warrants explanation. Obviously, the easiest way is to lower the allowed emissions limits, which EPA will do. But the agency is also considering tightening the time frames within which emissions can occur and making them site-specific. For example, a project may be limited to a certain level of emissions within its jobsite within 8 hours.

The message here is clear, and it's a message many equipment managers are still trying to avoid. Managing compliance has skyrocketed to the top or near the top of your to-do list. There's no better time than now — today — to start evaluating your fleet. Business is slow, there's time to start compiling data, and there's time to thoroughly develop a strategy and plan.

Do it before the regulators force you to do it...on their timetable.



Rod Sutton, Editor in Chief

We welcome your comments.
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The Dominator field service vehicle features improved winch placement that eliminates tension on the cable when the boom is raised or lowered with hook in stowed position. The redesigned workbench offers greater workspace designed for comfort, safety, and maneuverability. And the new hydraulic-driven rotary screw compressor provides reliable power for hand tools, tire inflation, and more.



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A summary of the month's primary machine introductions and model changes

By KATIE WEILER, Managing Editor



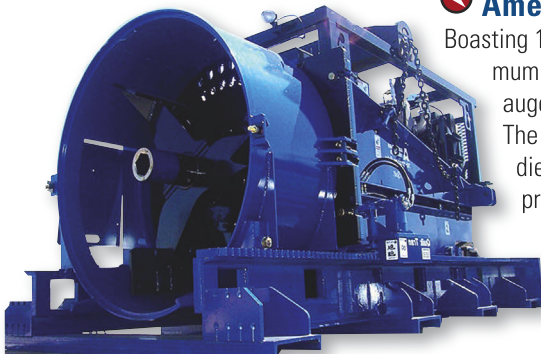
new fully automatic transmission with integrated retarder improves transmission shift performance and reduces fuel consumption.

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Asphalt Drum Mixers

Now available as separate components as well as part of a complete plant, Asphalt Drum Mixers (ADM) offers four models of portable and stationary recycle systems that allow milled material to be used in up to 50 percent of hot mix asphalt. The 15-ton-capacity ADM recycle bins have tapered discharge openings that lead to the direct-drive belt feeder. The system includes a heavy-duty weigh conveyor featuring a channel frame and wind shroud protection for accurate weighing.

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American Augers

Boasting 1.8 million pounds of thrust and 272,236 pounds-per-foot of maximum torque, the 84/96-1800 NG is the largest and most powerful auger boring machine on the market today, says American Augers. The standard model is fitted with a 300-horsepower Tier-3 Cat C-7 diesel engine, and it comes with a Quik Tran fast-return system that provides up to 20,000 pounds of push/pull at high speed and a Quik Split frame design that allows the machine to be separated into sections for quicker lifts in and out of the working pit. The machine's working range is 24 to 84 inches.

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John Deere

Four Series II articulated dump trucks from John Deere come with onboard weighing systems and tire-pressure monitoring systems as standard equipment along with Tier 3 engines and the requisite cab upgrades. Mirror-mounted lights alert the loading operator when the truck is nearing capacity, and JDLINK records payload weights. Deere says its



Caterpillar

With the D11T crawler dozer's transition to Tier-2 certification, Caterpillar redesigned the T-Series cab with 30 percent more glass and added safety and comfort options. The 850-horsepower C32 ACERT delivers a 21 percent torque rise for responsive power. A hydraulically actuated access ladder is available as an option, as is a rear walkway with a 505-gallon fuel tank. WAVS, an optional rear-vision camera system, improves visibility and can be ordered with one or two cameras.

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Market Watch



K-Tec Earthmovers

With a heaped capacity of 54 cubic yards, the 1254 ADT pull scraper is the largest earthmoving scraper available in the world today, says K-Tec. The 1254 ADT is designed to be pulled by the chassis of a six-wheel-drive, 40-ton-plus articulated dump truck (ADT). Developed from the K-Tec 1243 ADT model, the 1254 is able to gain 11 yards in capacity from the 2 feet of additional side wall height.

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Jarraf Industries

With its ability to lift the cutter head to a height of about 11 feet, the new Geo-Boy brush cutter from Jarraf is capable of additionally clearing trees up to 12 inches in diameter. It has a low center of gravity that provides a smooth ride and keeps the cutter head properly positioned in uneven territory, says the company. Other features include a pressurized cab, full Lexan No Mar windows, a rearview camera, and a choice of Tier 3 engines.

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Astec Underground

The latest addition to the Astec line of horizontal directional drills, Earth-Pro DD-4045 offers 40,000 pounds of thrust/pullback and 4,500 pounds-per-foot of rotary torque. The Cummins-powered, 156-horsepower DD-4045 boasts a two-speed carriage capable of adding or removing pipe from the spindle at 140 feet per minute. A patented ES!LOK exit-side lock-out system works independently from the locating equipment.

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Stellar Industries

Stellar offers a new line of telescopic service cranes controlled, powered and monitored by Crane Dynamics Technology (CDT). With models ranging in lifting capacity from 6,000 to 14,000 pounds, CDT-equipped cranes communicate with the operator by using multiple sensory indicators, including LED lights and pulsating vibrations, when approaching maximum capacity. The control system has a boost mode that will temporarily provide almost 120 percent of normal operating capacity.

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Komatsu

Producing 502 horsepower, the Komatsu Tier 3 engine powering Komatsu's WD600-6 wheel dozer offers increases in output and features over the previous tractor model. The engine comes standard with dual-mode power as well as a high-pressure common rail fuel injection system, a cooled exhaust gas recirculation system, and an air-to-air charge air-cooling system. The 108,280-pound wheeled dozing tractor is designed to work with a straight or U blade, boasting top speeds of 23.4 and 22.4 mph in forward and reverse, respectively.

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Landoll

Landoll's Trailer Division increased the capacity of its 435 and 410 model 400 Series Traveling Axle trailers. Model-year 2010 (production beginning July 2009) 400 Series trailers are redesigned with additional frame strength, adding 5 tons of capacity. The tandem-axle Model 440 has a frame rating of 40 tons, and the triple-axle Model 455 has 55 tons of capacity. Landoll trailers have standard centralized grease system.

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Figures.

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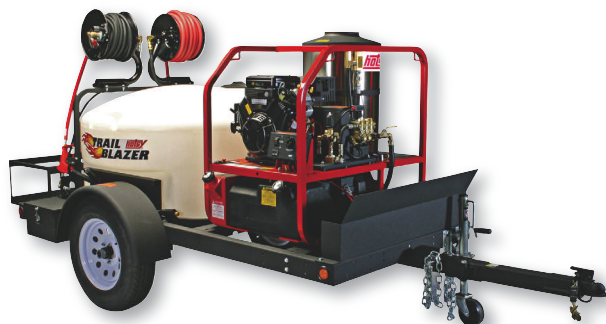


Market Watch

▶ Hotsy

Equipped with a 200-gallon water tank, the Trail Blazer single-axle trailer is designed to transport and supply any of 10 Hotsy gas-powered pressure washer models for on-site or in-the-field cleaning. The Hotsy mobile cleaning trailer system's axle assembly leverages a leaf-spring suspension undercarriage rated at 3,500 pounds. A swivel jack trailer tongue assembly is able to handle up to 1,000 pounds and features a 2-inch ball coupler.

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◀ McLaughlin

With McLaughlin's Xtreme line of combination air/water vacuum excavators, combining high-pressure water and compressed air into one vacuum

excavation unit in difficult ground conditions is possible with a positive displacement blower rated at 1,200 cubic feet per minute. Users can custom-build a unit to meet their needs with a choice of 500-, 800- or 1,200-gallon spoil tanks and trailer or skid mounting. McLaughlin vacuum excavators are available through Vermeer dealers.

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▼ Caterpillar

The Caterpillar AD55B articulated truck for underground mining replaces the AD55 and features more power and enhanced braking and retarding. The 55-metric-ton-capacity truck also has new components and layouts for improved reliability and operator com-

fort, and easier maintenance. The truck is equipped with Cat's C27 ACERT engine

with a gross power of 805 — 19 percent more compared with the previous model. Similarly, torque is up 30 percent.

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▶ Komatsu

Komatsu's hydrostatic 78-horsepower D31EX-22 and D31PX-22 crawler dozers share the super-slant nose and cab-forward design of the D51-22, and range in operating weight from 17,020 to 18,827 pounds. When the hydrostatic D31-22 dozers' variable speed setting is selected, the operator can adjust ground speed through 20 increments using shift buttons on the travel joystick, or tiller. Quick-Shift speed selection allows the operator to select three predetermined speed settings to match job conditions.

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▼ Link-Belt

A 600-ton-capacity Super Lift option for Link-Belt's 548 lattice-boom crawler crane is currently on the test pad in Japan. Also



new on the 548 is a 25-foot auxiliary offset top designed for heavy lifts where additional load-to-boom clearance is required. The 548 is rated at 550 tons, and its

luffer consists of a 98- to 236-foot heavy-duty boom and a 79- to 236-foot luffing jib. Maximum tip height approaches 470 feet. The 548's standard boom is 79 to 315 feet and the long-range boom is 138 to 354 feet.

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▶ Astec Underground

Powered by a 121-horsepower, Tier-3 Cummins B4.5 turbo-charged engine, the RT1200 can trench up to 84 inches deep and from 7 to 18 inches wide, but

still use attachments common to the previously largest ride-on trencher model, the RT1160. The RT1200 is able to use a combination of such attachments as trenchers, vibratory plows, backfill blades, backhoes, cable reels and rock saws. Four-wheel, crab and coordinated steering allow productivity in various worksite conditions.

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Caterpillar

The 584 and 584HD forwarder models have 18- and 20-metric-ton capacities, respectively. Both models come in an eight-wheel-drive configuration; the 584 has a six-wheel-drive option. A hydrostatic propel system provides maximum power on grade through a wide engine rpm and ground-speed range. They are powered by Cat C7 ACERT engines delivering about 275 gross horsepower at 1,800 rpm.

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Maintainer

With capacities ranging from 10,000 to 36,000 foot-pounds, Maintainer's EH Series of truck-mounted cranes feature a 100 percent solid-state control system with arch suppression and a 25-foot cable. A planetary winch, made up of hoist drum and wire rope located outside of the boom, help improve operator visibility. Driving the EH Series cranes' hydraulic system is a 12-volt DC motor that delivers 2.2 gpm. The boom and other operations are controlled via a wireless remote.

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SUPPLIER NEWS

Navistar Buys Continental Mfg.

Navistar International has added mixer capability to its manufacturing portfolio with the acquisition of privately held mixer maker, Continental Manufacturing. Continental offers a line of rear-discharge mixers sold under the CBMW brand and sells parts for all mixer makes. The acquired company will continue to operate independently with manufacturing operations in

Houston and five sales branches. Navistar intends to extend Continental's dealer reach through select International Truck dealers. Mixers will continue to be sold and mounted on International chassis as well as those built by other OEMs.

Pre-acquisition CBMW 10.5-yard Bridgesaver Express mixer on a 2007 International Paystar 5500i chassis.



SUPPLIER NEWS

ESCO Will Go It Alone in Australia

U.S.-based wear parts manufacturer ESCO Corp. is setting up its own shop to serve Australia and surrounding markets.

In establishing its first legal Australian entity, the Portland, Ore.-based ESCO announced the appointment of Johan Nienaber as the first employee of ESCO Holdings PTY Ltd. As director of sales in Australia, Nienaber is tasked with developing ESCO's business throughout Australia, New Zealand and Papua New Guinea. He most recently served as general manager-mining with CQMS of Brisbane, Australia, and previously spent 15 years with Bucyrus International including as managing director in Australia.

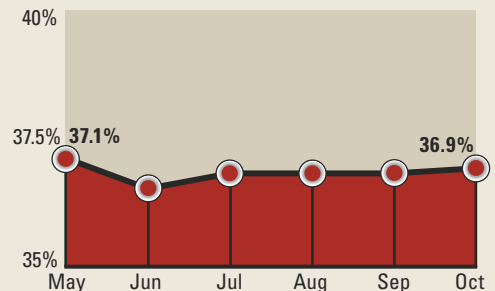
ESCO has advised local licensee Bradken it will not renew or extend the agreement under which the latter company has manufactured and sold ESCO products throughout Australia, New Zealand and Papua New Guinea. The license agreement is scheduled to expire in June 2011, upon which time ESCO Holdings PTY Ltd. will assume responsibility for sales and support to customers in the region.

USED EQUIPMENT

Values Continue Stable

The Rouse Value Index

(Avg. orderly liquidation value as % of cost)



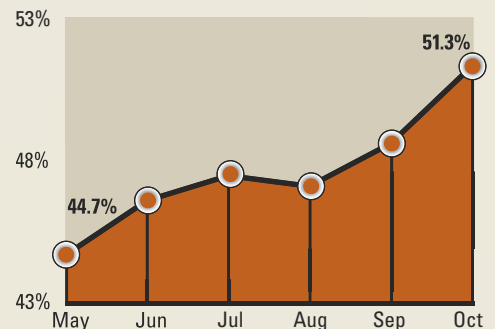
Note: Orderly liquidation value is expressed as a percentage of replacement cost (average cost paid for a new unit by large rental companies and dealers) for the average age of equipment within that category.

Includes 10 categories of equipment common to rental fleets.
Source: Rouse Asset Services

Orderly liquidation values have been stable since summer, down only 0.3 percent in October compared to September. Heavy-iron values are rebounding, especially skid steers, excavators and backhoe loaders.

Skid-Steer Loaders

(Avg. orderly liquidation value as % of cost)



Values of skid-steer loaders continued to rise in October, up 5.7 percent over September and 12.2 percent since April. Average selling age is stable, with these versatile machines trading at 54 months.

MANUFACTURER NEWS

Caterpillar to Buy Korean Parts Maker

Expanding its footprint in Asia, Caterpillar will purchase South Korea's JCS Co., a manufacturer of undercarriage components for excavators and other off-road equipment. The acquisition of JCS would allow the Illinois-based company to manufacture seals to improve machine undercarriage reliability and durability.

"This strategic acquisition will improve Caterpillar's supply chain and component capacity in support of Caterpillar's long-term machine capacity expansion plans in Asia," says Cat's David Bozeman, who is in charge of the company's undercarriage development.

STATUS & FORECAST

CONSTRUCTION EQUIPMENT SHIPMENTS

Construction equipment orders and shipments rose slightly in the last two months while manufacturers' inventory has been steady and prices have edged slightly lower. Both equipment imports and exports continue to decline with further declines expected for a few more months. The recent increase in shipments is likely temporary since construction activity will be at best steady. Month-to-month declines are possible through the winter before sustained gains in equipment shipments begin.

(% change from previous month)



RUNNING GREEN

Greenhouse Gases to Boost CAFE Requirements

The U.S. Environmental Protection Agency satisfied a prerequisite to finalizing its proposed greenhouse-gas emission standards for light-duty vehicles on Dec. 7, 2009, when administrator Lisa Jackson signed two distinct findings regarding greenhouse gases:

- **Endangerment Finding:** Concentrations of the six key well-mixed greenhouse gases – carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) – in the atmosphere threaten public health and welfare of current and future generations.
- **Cause or Contribute Finding:** Combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

The proposed greenhouse gas emission standards for new light-duty vehicles, issued jointly by EPA and the Department of Transportation's National Highway Safety Administration, would require model-year 2016 vehicles to meet a combined average emissions level of 250 grams of carbon dioxide per mile.

If all the necessary reductions were made through fuel economy improvements, the overall light-duty vehicle fleet would reach 35.5 miles per gallon.

Proposed emissions standards must be finalized by March 31, 2010, so that CAFE regulations are in place the required 18 months prior to the start of production of model year 2012 vehicles (as required by the Energy Policy and Conservation Act).

ASSOCIATION NEWS

AEM Honors 75-Year Member

The paving materials production equipment maker that bears the name of the historic Great Lakes city it calls home has been honored by the Association of Equipment Manufacturers (AEM) for 75 years of membership.

Erie Strayer Co., of Erie, Pa., was the longest serving of eight companies to be presented in November with an AEM milestone member plaque, awarded to association members in 25-year increments. Erie Strayer Co. designs and manufactures ready mix plants, paving plants, tilt mixers, batching controls and concrete reclaimers.

Reaching the AEM 50-year mark were Fairfield Manufacturing Co., of Lafayette, Ind.; Firestone Agricultural

Tire Co., of Des Moines, Iowa; Manitou North America, of Waco, Texas; The Timken Co., of Canton, Ohio; and Weasler Engineering, of West Bend, Wis. Receiving 25-year plaques were Amerequip, of Kiel, Wis., and Bush Hog LLC, of Selma, Ala.

"We especially appreciate the continued support of these milestone-member companies," says Paul Malek, AEM membership director. "Their leadership and service have contributed greatly to the growth and progress of AEM, advancing the off-road equipment manufacturing industry both in North America and globally."

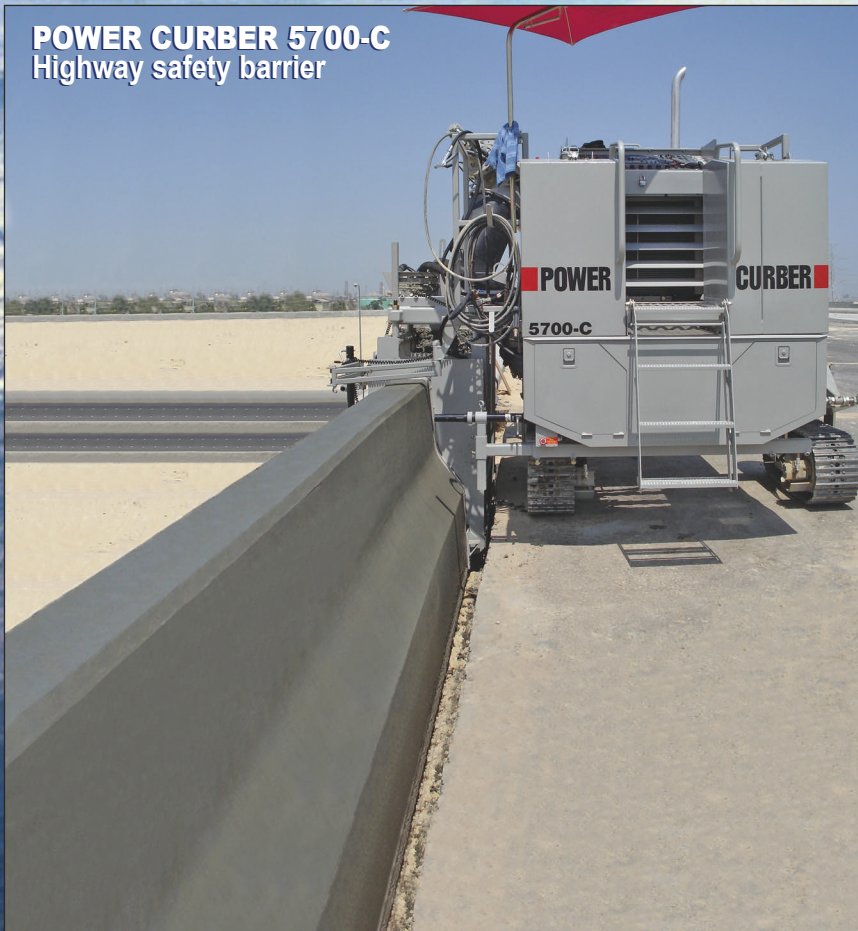
AEM's membership includes companies dating back to the association's founding in 1894.

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ECONOMY

Start Us Up USA! in Washington

A 60-ton Link-Belt crane, trailered by Keen Transport, lead a procession of a dozen idle pieces of construction equipment in and around the National Mall and Capitol Hill in Washington, D.C., on Oct. 28, 2009. The convoy was to draw attention to Start Us Up USA!, the last of three rallies across America calling Congress to reauthorize critical transportation spending. Co-sponsors of the rally, the Association of Equipment Manufacturers and the Associated Equipment Distributors, communicated the impact on the construction industry of the recession and expiration of the last federal transportation act.



"With your strong support," exhorted Congressman

James Oberstar, "We will put America to work. We can create six million new jobs!"

With the Capitol and idle equipment as a backdrop over a field of 5,500 orange utility-locating flags (each representing 100 unemployed construction workers), House Transportation & Infrastructure Committee Chairman James Oberstar (D-MN) was keynote speaker.

"Surveying of states shows that 15 have cut back on spending, and another 19 states will cut back on their 80\20 program next year. That means whatever gains we made in the stimulus side will be offset by losses on the regular program side," Oberstar said. "Those unsettling numbers are real. So let's act now!

"Then we can get things going,"



Oberstar exhorted Congress. "With your help, with your strong support, as you have been consistently supporting our six-year investment bill, we will put America to work. We can create six million new jobs!"

In addition to participating in the rally, Link-Belt Crane urged its employees, customers, and distributors to sign the Start Us Up USA! petition, contact their representatives in Congress, or write letters to the editors of

their local newspapers.

Do that here: www.StartUsUpUSA.com/takeaction.cfm.

Chuck Martz, Link-Belt CEO, added that "this funding is critical long-term, not just to our industry, but to our country. It directly affects our international competitiveness. Similarly, delaying this funding not only affects the industry, but also the overall employment rate and our prospects for economic recovery."

RUNNING GREEN

Joint Venture to Produce Aftertreatment Systems

Engine maker Deutz, automotive parts maker Bosch, and exhaust technology manufacturer Eberspächer have signed an agreement to develop diesel-emissions aftertreatment systems.

When operations begin in January 2010, the joint venture — known as Bosch Emissions Systems — will produce complete aftertreatment systems designed for excavators, wheel loaders, and tractors, in addition to a range of other on- and off-road vehicles.

"As significantly stricter limits will apply to non-road and on-road vehicles in the future in Europe, North America, and Japan, demand for exhaust aftertreatment systems will increase strongly," says Dr. Gerhard Turner, president of the Bosch Diesel Systems division.

Bosch Emission Systems will function as its own company and work independently of its parent companies.

RUNNING GREEN

Off-Road Diesels Prove CARB Redundant

Projecting emissions from this year's accurate inventory of California's off-road diesel fleet shows that it is performing well below the Air Resources Board's ambitious emissions targets. The Associated General Contractors of America used the very same computer model that CARB applied earlier in the decade to project emissions levels for California's in-use off-road diesel engines. The only changes in AGC's analysis reflect this year's exhaustive inventory of the California off-road fleet.

"Builders and contractors won't have to retrofit, repower or replace a single piece of functional, modern and paid-for construction equipment to meet the state's emissions targets for years to come," said Mike Kennedy, chief counsel for the association. "The state's contractors, with help from the

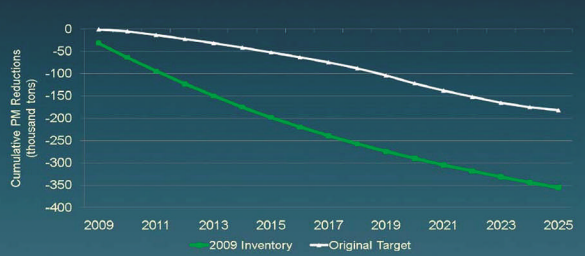
economy, are far more effective at cutting emissions than state officials ever anticipated."

AGC asked CARB to revise its off-road-diesel emissions regulations. Most significantly, they suggest CARB eliminate distinctions between small, medium and large fleets and regulate "all fleets over the same period and to the same extent that ARB originally sought to regulate small fleets." This would put off further fleet requirements until 2015.

"This new data raises an important question," Kennedy says, "Will California's Air Resources Board let the data drive the final decision, or simply drive the data to conform to its earlier conclusions?"

— LARRY STEWART

How 2009 Inventory for NOx Compares with Original Target For Cumulative Reductions



Regulations based on CARB off-road-diesel fleet estimates demand equipment owners reduce oxides of nitrogen (NOx) 5,200 tons in 2010. An accurate inventory, however, shows equipment is now and will be well below state targets through 2025. Current equipment doesn't exceed the particulate-matter (PM) target until 2014, when new Tier 4 Interim equipment will be available to address emissions concerns.

For more information, visit www.constructionequipment.com/blog/1200000720/post/20051202.html.

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How to Get Uncle Sam to **Pay for Equipment Updates**

Get ready to apply for millions of dollars in government grants for rebuilding or replacing diesel engines or assume the emissions-regulated position

The U.S. government is offering hundreds of millions of dollars in incentives to clean up diesel exhaust stacks in the field today through grant programs. Getting the money is a competitive process, but any equipment owner willing to work for it can get a share of the money to help pay for emissions-related repowers, rebuilds, retrofits or even machine replacements. Their machines will not only work cleaner, but more powerfully and fuel efficiently. Winning grant proposals draw together smart alliances of equipment professionals and dealers to work with local governments that want cleaner air.

In 2009 and 2010, the Environmental Protection Agency is distributing up to \$120 million for clean diesel activities courtesy of EPA appropriations, and the American Recovery and Reinvestment Act of 2009 has already added \$300 million. Diesel clean-up money is disbursed through the National Clean Diesel Emissions Reduction Program, sometimes referred to as “DERA,” which was created by the Energy Policy Act of 2005.

One way DERA funding is disbursed is through competitive grants administered by the ten EPA regions. For example, Region 4 received 98 applications requesting \$140 million in grant funds in the first half of 2009. The Associated General Contractors (AGC) of Kentucky was awarded \$2 million on behalf of its members to support retrofit and re-power of 87 diesel construction machines and to reduce equipment idling on 100 jobsites.

Another national incentive supporting diesel emissions reduction comes through state departments of transportation from the Congestion Mitigation Air Quality (CMAQ) Improvement Program. It was authorized in

the Bush administration’s last transportation act, allowing state DOTs, metropolitan planning organizations and transit agencies to invest \$1.6 billion annually. States control most CMAQ money, directing much of it to projects such as signals and lane additions to reduce traffic congestion. Some state legislatures, though, have created grant programs funded by their CMAQ allotments, such as Ohio’s Diesel Emissions Reduction Grants.

Local and regional activities of EPA’s National Clean Diesel Campaign are coordinated through regional clean diesel collaboratives hosted by EPA that include local agencies and private-industry stakeholders. National, regional and local grant opportunities are tracked through the collaboratives and through the EPA regional offices.

Many local AGC chapters have been active as eligible entities to help members devise clean-diesel projects, aggregate those projects into grant proposals and submit them. Clean Cities and Clean Fuels Coalitions are nonprofit organizations supported by the Department of Energy that sometimes offer funding for their own grant programs, and maintain databases of funding opportunities. They can also help create and submit proposals.

Proposals for DERA and CMAQ grants must be submitted on behalf of private companies by an eligible entity – typically a government or nonprofit agency. The AGC chapters and Association of Equipment Management Professionals have been active eligible entities on behalf of equipment owners. The EPA’s Clean Diesel Coalitions are eligible to submit some grant proposals, as are the DOE’s Clean Cities and Clean Fuels Coalitions. Any number of local nonprofits and agencies are also possible partners to help win grant awards.



"I'll pull census data; find out how many people with adult asthma live in the county where the machines work. Look at how many major highways run through the county, and find out if it is meeting air quality standards or not," says David Celebrezze, director of air and water special projects for the Ohio Environmental Council. This information helps create compelling grant proposals. "Most programs that I know of give preference to fleets that are in counties that are failing the federal air-quality standards for either ozone pollution or particulate matter."

Establishing relationships with a network of eligible entities is good insurance against the vagaries of government and nonprofit budgets. As work load and staffing changes, agencies that acted as eligible entities for grant proposals one year may not be able to work with contractors the next year.

In requests for proposals (RFPs), each EPA region establishes a target dollar range for grant applications they'll accept.

"The funding range in Region 5 for 2009 and 2010 was \$250,000 to \$1.5 million," says Steve Marquardt, with the U.S. EPA's Region 5 and Midwest Clean Diesel Initiative. "Many fleets need funding levels below \$250,000, so they're going to need to partner with other people [combine their diesel-clean-up proj-

ects with other fleets' projects] to be eligible to apply."

Public/private partnerships are characteristic of most diesel-emissions grant programs. The state of Ohio's DERG program required it.

"When we submitted our grant proposal in spring of 2008, the state told us they couldn't give it to us because we didn't have a proper public/private partnership agreement," recalls Jim Fox, vice president of Great Lakes Construction Co. in Hinckley, Ohio. "We knew there was going to be another round in the fall of '08, and figured we'd better get busy finding a public partner.

Fox went to the City of Lakewood, Ohio – a town known for its "green" image – to tell the service director about Great Lakes' plan to repower a pair of D8N dozers for lower emissions. It took about a month to hit the right meetings, but it wasn't hard to convince the city council to act as Great Lakes' eligible-entity partner and submit their proposal to the state.

"They liked the idea of being on the leading edge, so it passed through the council," Fox says. "The city lawyers crammed and we

A DERA grant covered all of the \$17,000 cost to fit the 257 horsepower engine in this 2001 Model 972G wheel loader with a Cat Diesel Particulate Filter.

Where to Get Clean-Diesel Grants

20 Sources of Diesel-Emissions-Grant Funding

www.constructionequipment.com/article/CA6710186.html





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had the agreement in hand the week before it was due before the Ohio Department of Development.”

Funding legislation acknowledges the variability in local air quality by placing distribution of most funds in the hands of state agencies. So the characteristics of a successful grant application are going to change from one area to the next. Grant applications are typically scored using a point system that varies with air-quality priorities. That’s why partnerships with local agencies, and local equipment specialists such as dealer service departments, are invaluable.

When local eligible entities combine a diesel clean-up project with other projects, they can include those from air-quality hot zones – places where air quality is dire – and improve the chances of approval for all the projects incorporated in that proposal. They

can also balance your engine retrofits or rebuilds with a municipal fleet’s idling-reduction program and a school-bus company’s exhaust retrofits, for example.

“EPA is looking to get the most bang for their buck, so any project that is going to achieve large reductions of criteria pollutants [particulate matter and oxides of nitrogen] are going to be attractive,” says David Abel, diesel specialist with the Mid-Ohio Regional Planning Commission, which has successfully applied for diesel emissions reduction grants on behalf of its members. “And, secondly, they want those emission reductions to be realized in Ohio counties that failed to meet federal air-quality standards – major metropolitan areas such as Columbus, Cleveland, Cincinnati, Akron. And then EPA is also looking to fund collaborations – multiple fleets from different areas of the state and across multiple sectors: construction, transportation, agriculture, marine, that sort of thing.”

Diesel emissions reduction grants fund



up to 100 percent of projects that include installation of verified retrofit technologies (such as diesel oxidation catalysts and particulate fil-

ters) or verified idle-reduction systems. Caterpillar’s Emissions Upgrade Groups – selections of emissions-related engine parts that, when installed by a Cat dealer, qualify an engine rebuild as an emissions retrofit and for DERA coverage of emissions-related components and labor. Certified engine repowers are funded up to 75 percent. Complete machine replacements can be funded to 25 percent. Last year one Ohio contractor, for example, was approved for about \$300,000 in funding to replace five machines – a Cat D6 dozer and four Komatsu hydraulic excavators in the PC200 to PC300 range – with new Tier 3 equipment.

The 279-horsepower engine in this 1986 Cat 615C scraper was rebuilt using Caterpillar’s EPA-verified Emissions Upgrade Group at a cost of about \$25,000. A DERA grant covered 100 percent of the emissions-related parts, and the customer paid for about \$3,000 in additional parts for the overhaul.

Contractors Who Win Grants



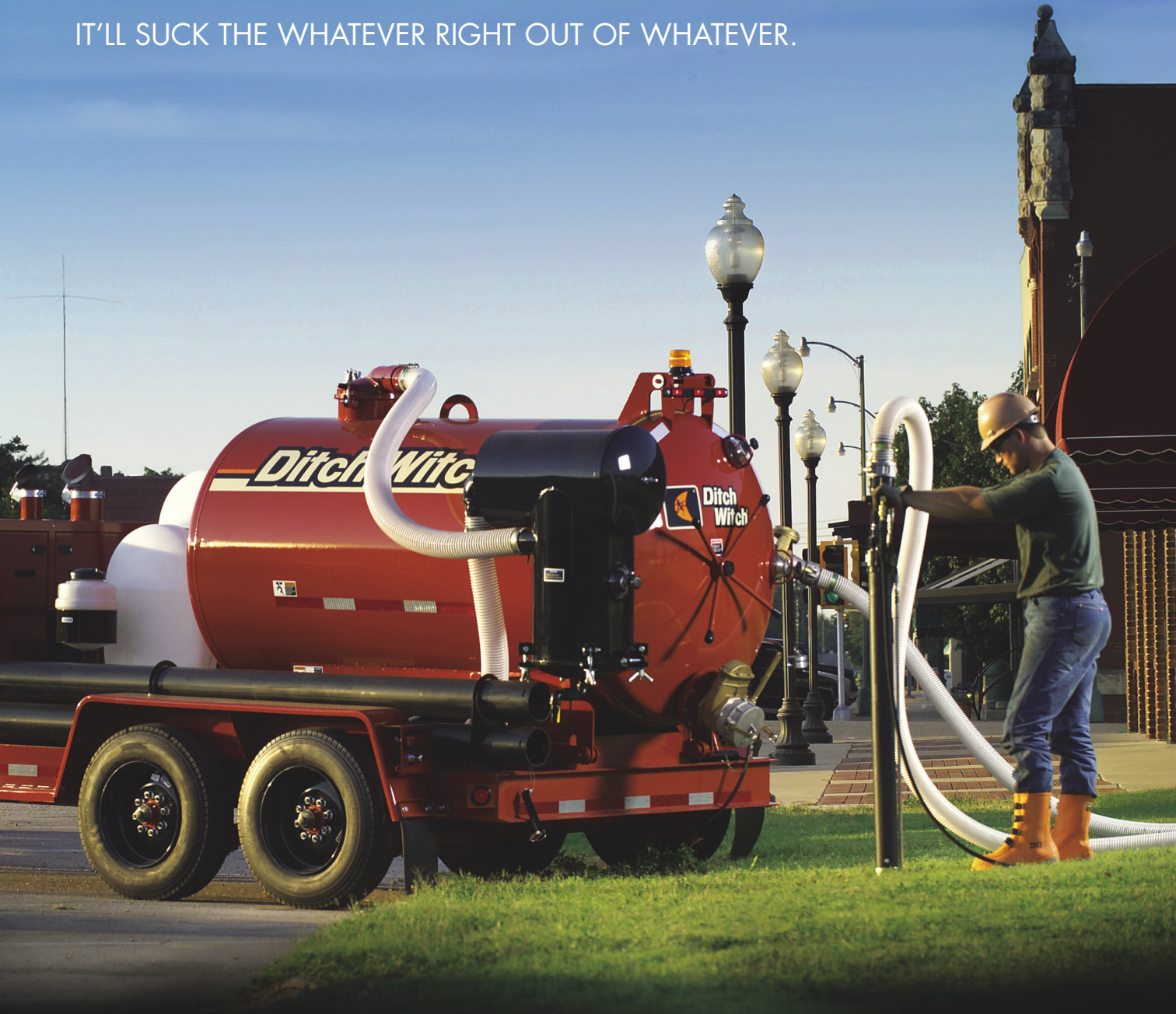
Grants Pay to Repower Two D8Ns

www.constructionequipment.com/article/CA6710175.html

Uncle Sam Pays Grace Pacific \$230,000 to Refresh its Fleet

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“We’re expecting EPA- or CARB-verified emissions retrofit technology, or certified engines,” says Marquardt. “Usually it’s retrofits, cleaner fuel, idle-reduction technology, repowers, replacements.”

For machines working in the worst non-attainment areas, it may be best to propose the steepest pollutant reductions – repowering unregulated Tier 0 machines (built before 1995 or 1996) with Tier 3 engines.

“With your larger horsepower engine you get more improvement per dollar,” says Brad Friend, product support sales rep and emissions business manager at Ohio CAT. “It seems like the proposals we’ve got approved have been for repowering Tier 0 machines with Tier 3 engines in the 300-horsepower range. It costs a lot of money to do that, but the emissions improvement is pretty significant.”

Friend has been instrumental in developing diesel-emissions proposals for state and federal grant competitions for more than three years. Only one Ohio CAT customer has applied for exhaust filters so far, but many others received grant funding for repowers.

“With a repower, the customer is able to take equipment from Tier 0 to Tier 3 emissions levels for about what it would cost to do an out-of-frame overhaul on the Tier 0 engine,” Friend says. “For customers who are planning an engine overhaul anyway, it’s a good deal.”

In nonattainment areas where air quality is not as severe as in much of Ohio, repowering with Tier 1 or Tier 2 engines delivers an attractive cost per kilogram of pollutants eliminated at a lower out-of-pocket cost to the state and the equipment owner.

Mike Lazarra, product support sales manager at Michigan Cat, has high hopes for Caterpillar’s engine upgrade groups in the current round of DERA funding despite having been successful in past grant applications with repower projects.

“The government likes a rebuild even better than a repower because there is less waste,” says Lazarra. “You’re reusing the current castings and making the engine run cleaner.”



The fact that a Tier 1 engine emits more than a Tier 2 or Tier 3 engine may not be as critical in some areas as being able to upgrade more of the engines in those areas.

Exhaust retrofits, such as a diesel particulate filters or oxidation catalysts, are also 100-percent funded in DERA grants, but offer less tangible benefits to the equipment owner. Nevertheless, Grace Pacific used part of its second major diesel-emissions grant in Hawaii to fit almost its entire gravel-hauling fleet with diesel oxidation catalysts (DOCs). Hawaii has no nonattainment areas, but ash from the active volcanoes frequently reduces air quality. Not appearing to contribute to the problem has benefits to the contractor.

“Even though the DOC is only doing 25 or 30 percent emissions reduction, it still makes a pretty significant difference in what you see coming out of the stack,” says Joseph Shacat, the company’s environmental compliance manager. “When you don’t see smoke coming out of a piece of construction equipment, you don’t really think anything of it – it’s kind of a neutral thing. But when you see that black smoke come out of a stack, it’s a negative. So we went from a negative perception to a neutral perception, which I consider to be a major improvement.”

Grace Pacific has hired consultants to help pull together its grant proposals for the better part of four years, and the company has spent about \$230,000 in government money

Select unregulated Caterpillar engines can meet Tier 1 emissions levels when specific emissions upgrade groups – including an upgraded turbocharger, fuel pump/governor, injector nozzles, cylinder packs – are used in an engine rebuild. Validation requires installation by a Cat dealer.

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upgrading its fleet with repowers and replacements, as well as retrofits.

"I think the benefits definitely outweigh the cost associated with hiring a grant writer," says Shacat. "The grant proposal might cost up to \$7,000, but then the value of the grant could be several hundred thousand dollars. If you repower and replace equipment, you're going to get better fuel consumption and more power, better productivity and less downtime. So that proposal pays for itself pretty quickly. There is some risk involved – maybe you don't get funded – but if you do, then it's definitely worthwhile."

Enthusiastic industry participation in voluntary diesel-exhaust cleanup incentives could actually forestall regulation in some states. The Associated General Contractors loudly and clearly told Congress that U.S. contractors don't want clean-diesel regulation when they, in partnership with the Clean Air Task Force, proposed Clean Construction Principals.


The Clean Construction Principals proposal includes sample contract language to be used in bid specifications of large construction projects. The language requires contractors' equipment to meet certain emissions criteria. AGC and the Clean Air Task Force intend for Clean Construction Principals to become part of the language of the highway authorization bill. The plan allows contractors to charge the cost of machine rebuilds, repowers, retrofits or replacements to the project owner in the form of change orders. That way, emissions-reduction costs are handled after the bidding and project award. The proposal suggests tapping CMAQ dollars to pay for the change orders.

Expectations for cleaning up existing diesel engines are not diminishing. Two facts confirm it: 1) worsening air quality in most populated areas; and 2) billion-dollar emissions-grant incentive programs that started under a Republi-



Two 1983 Cat 769C haul trucks with 475-hp 3408B engines were repowered with new 3408E engines, upgrading the unregulated trucks to Tier 1 emissions levels. Cost was about \$87,000 for each repower. Grant funding was not applied for, but would have covered \$65,250 of the cost to repower each truck.

can president and continued into a Democratic adminis-

tration. Equipment owners who quickly learn to earn grants will use more grant funds to modernize their fleets and prepare their businesses for survival in what will inevitably be a more incentivized or regulated clean-diesel future. 

More Online Resources



DERA RFP

www.epa.gov/air/grants/2009_10_6_final-dera.pdf

Project Narrative Sample

www.epa.gov/otaq/diesel/documents/fy09-proj-narrative.doc

EPA's Diesel Emissions Quantifier

<http://cfpub.epa.gov/quantifier/view/welcome.cfm>

Clean Air Task Force

www.catf.us/projects/diesel/

Running Green

<http://www.constructionequipment.com/green>

Navistar's 2010 Diesels Keep Their Cool

Driving a MaxxForce DT in a WorkStar vocational truck proves that cooling modules ably do their duties, at least on this chilly, rainy day

Verbal skirmishing between Navistar International and its competitors over their two paths toward meeting new exhaust emissions limits has included charges that Navistar's 2010 diesels will run hot. Not so, the company has declared, and it recently offered proof to trade-press editors. Engineers put some of us into several International trucks for a driving experience, and we saw that their '10-model MaxxForce engines were energetic but cool performers, at least under cool and wet conditions.

Higher levels of exhaust-gas recirculation — part of Navistar's Advanced EGR system for 2010 — will surely make the engines run hotter and rot their innards, said competitors, who also run EGR and will continue to, but not as much as Navistar. The company's ride-and-drive

event dismissed some of the fear over hot running, though time will tell about effects on longevity.

The Chicago-area event happened as unseasonably cold and wet weather covered much of the United States (whatever happened to Global Warming?). Under these conditions engine heat shouldn't be a problem, period. But Navistar engineers said the enhanced cooling modules in their trucks work just as well under more extreme conditions, and they promised us later experiences in hotter weather.

WorkStar and its load of concrete blocks together weigh about 30,000 pounds. It has a 14,000-pound steer axle, a 40,000-pound tandem and — oddly for this kind of truck — a highway oriented 10-speed gearbox. Engineers explained that this truck is a test bed that will get other transmissions during its life in Navistar's test fleet.





Under the hood, the midrange MaxxForce DT is hidden behind turbos, pipes, filters and a fluid bottle. Cooling module includes two-core radiator.

For now, my conclusion is that Navistar might just have something with these A-EGR diesels, and the company will be a real contender in sales wars against competitors with their selective catalytic reduction-equipped 2010 diesels. That's based on drives of two International trucks: a medium-heavy duty WorkStar with the midrange MaxxForce DT, and a ProStar tractor with a MaxxForce 13, which will be Navistar's biggest engine for a while into 2010.

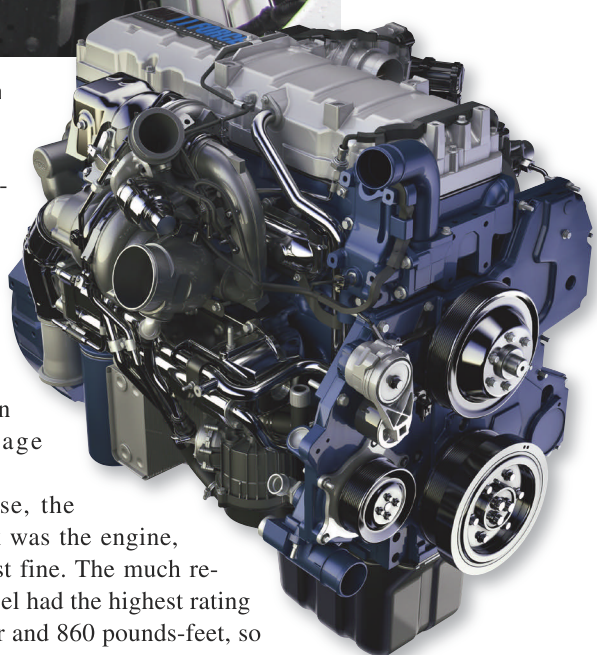
Water-temp gauges in both vehicles stayed at an almost constant 180 degrees F throughout my runs, causing me to accuse ride-along engineers of gluing the gauge's needles in place. They laughed and denied it, explaining that cooling systems are designed to extract excess heat from the engines and dissipate it into the atmosphere. And the systems also do that under hot and high-altitude conditions, though then the gauges might show 200 degrees or more. About 10 million miles of lab and road testing has been done on each engine series, which includes the smaller MaxxForce 7 V-8 and the MaxxForce 11, another big-bore engine.

Lou Maza, a senior project engineer, directed me on a 2-hour, 40-mile tour through some of Chicago's northwest suburbs in the WorkStar. This model often does construction duties, but this truck had been spec'd as a development test bed for use by Navistar engineers. That explains its highway oriented Eaton Fuller 10-speed manual transmission where an 8LL would usually be found. Maza explained that this tranny is likely to be pulled and replaced with others over the truck's life. Good rid-

dence, I'd say, because I seldom made an up- or downshift without some gear crunching and a "thunga-thunga-thunga" sound in the clutch linkage below the floor.

But, of course, the point of the truck was the engine, and it behaved just fine. The much refined 6.4-liter diesel had the highest rating of 300 horsepower and 860 pounds-feet, so it ably moved the 30,000-pound truck (16,000 pounds of chassis and 14,000 pounds of concrete blocks on a flatbed body) away from the many red lights we encountered along boulevards and semi-rural highways. At first I used a light foot and every gear beyond 3rd, which was low enough for starting on level pavement, but acceleration was way too slow. After a while I put my foot into it and skip-shifted in Low range to get us up to speed more quickly.

The engine would rev as high as I wanted, but its official redline was 2,400 rpm and I usually upshifted sooner, at 2,000 to 2,200 rpm, and cruised at 2,000 and 40 to 45 mph in 9th. At low revs the engine didn't complain, but seemed happier closer to 2,000, which was a good point from which to speed up and slow down with traffic. A few times I got it into 10th gear on highways and tollways, where



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road speed was as fast as 65 mph. Combined power and torque (“porque”?) seemed almost completely even throughout the usable rev range, with no “lighting up” at any point on the tachometer.

As I said, the water temperature gauge stayed right at 180 degrees F throughout the trip, and with no help from the fan. It was the same story in the ProStar sleeper-cab tractor, with its 475-horsepower, 1,700-lbs.-ft. MaxxForce 13. This one had a Fuller 13-speed, which I was able to operate easily. In 8th-High (the 13th ratio) and 65 mph, the engine loafed along at under 1,300 rpm, right where it should be for top economy, said my rider, Mike Regula, director of Navistar’s big-bore engine program.

My ProStar drive was brief, but enough to show that its cooling system kept water, and the engine, at a constant and low temperature, again aided by cool ambient temps and rain splashing on the radiator cores. The month before, the trucks’ cooling modules also worked well in high-altitude tests west of Denver, along I-70 through the Eisenhower tunnel (11,158 feet above sea level) and on Loveland Pass (11,900 feet) on a twisting stretch of U.S. 6, Regula related. Thin air up there makes engines run hotter and heat exchangers less effective, but the modules did what they are supposed to.

On both medium- and heavy-duty trucks, a 2010 module includes a large, two-core radiator, an air-to-air charge air cooler and an air conditioning condenser. Most MaxxForce diesels will be double-turbocharged, and big-bore versions will have a water-to-air cooler between the two turbos, as do current models, while midrange diesels won’t need the inter-turbo cooler. Exhaust gas on midrange models runs through a single-pass cooler before going to the intake manifold, while big-bore engines use a two-pass gas cooler.

In a morning briefing before our drives, engineers led by Ramin Younessi, group vice president for product development and strategy, explained the features of the engines themselves. A-EGR is far more than EGR because Navistar’s 2010 diesels will also have enhanced combustion-chamber design, more capable electronic controls, and very high-pressure fuel injection, he said.


There’ll be considerable weight advantages – 300 to 400 pounds because Navistar will avoid SCR and its heavy and bulky equipment, and another 500 to 600 pounds if Navistar customers who pre-



Water-temp gauge (left of the tach) on the WorkStar stayed at 180 degrees and edged just above that at the end of a suburban run, showing the MaxxForce DT was running cool.

fer big-bore diesels will buy the idea of choosing a 13-liter model instead of a 15. They’ll have to for six to eight months into the new year, because the new MaxxForce 15 won’t be ready for a while.

Competitors have been calling Navistar’s Advanced EGR rates “massive,” but they’re not, Younessi insisted. A-EGR will run no more than a 37 percent exhaust-gas rate at the intake manifold, with the other 63 percent being clean air, and the rate will average about 25 percent. Recirculated exhaust gas displaces oxygen and cools combustion, which lowers formation of NOx. Navistar’s rates are only a few percent higher than competitors’ 2010 diesels using EGR as well as SCR. Fuel economy will be as good or better than current Navistar engines, and improved aerodynamics on ProStar highway tractors will make them even more competitive, he said.

A silly question for a Navistar engineer is whether these engines will hold up in day to day service for a long time, but I asked it of Lou Maza anyway. “Absolutely,” he declared. “Sure, these are our products, but from what I’ve seen, they’re doing very well.” Testing in labs and in Navistar’s own trucks has covered many millions of miles, Younessi had said, and MaxxForce-powered vehicles will soon be in customers’ hands for their own trials. Those and experience in coming years will truly tell the tale. 

Buying File: Concrete Slipform Pavers

By MIKE ANDERSON, Senior Editor

Slipform-Paver Makers Quick to Respond

Keeping concrete pavers up and running with little downtime required between assorted tasks is more important than ever, say equipment manufacturers

Speed and the paving process may not have always been associated with one another, but let there be no doubt that the ability to change on the fly is more important than ever for paving contractors. Equipment manufacturers are taking heed.

GOMACO has introduced an independent dowel bar inserter (IDBI) attachment that will insert transverse joint dowel bars in pavements from 12 feet wide at work behind the four-track Commander III, all the way up to 50 feet wide when attached to the company's largest GP-4000 slipform paver model. Representing an evolution of the bar insertion system, the self-contained IDBI attachment is powered by its own Cat C4.4 diesel engine, requiring neither power nor hydraulics from the paver itself.

"The IDBI automatic dowel bar inserter has been a great cost-effective tool for the placement of dowel bars across a concrete slab," says Kent Godbersen, vice president, worldwide sales and marketing. "The GOMACO system has been proven around

the world for its consistency and accuracy in bar placement. This has eliminated the need for placing dowel baskets on the grade for the distance of the paving project, which can provide a tremendous advantage in bidding a project," he says. "The IDBI attachment now allows a paver to be converted to or from this application in one hour. That is a tremendous savings in assembly and set-up time.

"With the Commander III having the IDBI capability, contractors now have the ability to pave half-width with or without bar insertion. They also have the ability to pave shoulders, lane additions, ramps, variable-width paving, safety barrier and more. That is ultimate asset utilization. That is why you see a GOMACO Commander III on almost every road-building project you come across."

For equipment manufacturers, it's a matter of responding with equipment solutions that match changing job requirements, says Ron Meskis, sales manager with Guntert & Zimmerman (G&Z). "Over the past 20 years, the state DOTs have spent billions of dollars in the reconstruction of long stretches of the Interstate system originally constructed in the 1950s and '60s. Therefore, the projects were typically large in scope, and once a concrete paving contractor began paving on a project, they were typically on that project for a period of time. The need to quickly reconfigure the slipform paver and transportability from one jobsite to the next was minimal," says Meskis. "Today's market is evolving to

The larger of two concrete slipform paver models from Guntert & Zimmerman, the S1500 is likewise now available with telescopic end sections that allow 6 feet of quick width-change paving capability. This is an option on new Guntert & Zimmerman machines, but also available as a retrofit.



With a hydraulically adjustable main frame accommodating paving widths from 8 to 16 feet, the new smaller HEM 8-16 SFP concrete slipform paver from Heavy Equipment Manufacturing is designed to meet a variety of jobs, from trails and shoulders to mainline roads and canals.



smaller projects with shorter time frames for allowable road closure. This is moving equipment suppliers to innovation, which provides contractors with quicker turnaround time for changing the paver's configuration and also transport of the machine."

Among features, G&Z concrete slipform pavers feature 90-degree steering that allows, with the flick of a switch, movement from a current pour without leaving behind a large section to be poured by hand. Split guillotine side forms allow the paver to back up over previous pours to likewise cut down on handwork. Most recently, available as an option are telescopic end sections that provide the paving kit 6 feet of quick width change.

"One critical objective when G&Z undertakes a design initiative is to increase the chance for a contractor to pave every day," says Meskis. "Historically, it could take a contractor a period of days to change the pave width on a slipform paver. The new telescopic end sections streamline this change, giving the contractor the ability to change pave widths in a matter of a couple hours and with fewer personnel. This, no doubt, increases a contractor's profitability due to decreased downtime."

Choices

As part of its Power Pavers product line, Power Curbers offers the two-track SF-2700 and highway-class SF-3000 slipform paver models. Without bulky side forms, SF-2700 operators can focus their time paving rather than setting up, says Stephen Bullock, vice president, sales and marketing. Like its little brother, the 65,000-pound SF-3000 is simple to set up, and hydraulic sensors keep crews paving rather than troubleshooting electronics, he says.

"One of the biggest challenges contractors face is high-priced labor and difficulty in hiring and retaining a skilled workforce. Much of the success of the SF-2700 and SF-3000 has been because they are simple to operate and are so reliable," says Bullock. "They don't require an IT degree to run, and downtime is minimal, so expensive crews aren't standing around waiting for the slipform paver to get back up and running."

The ability to adjust has been extended to other products in the Power Curbers offering,

Cost of Ownership

Machine Weight	List Price	*Hourly Rate
28,000 - 39,999 lb.	\$260,000	\$122.47
40,000 - 54,000 lb.	\$286,927	\$147.65
55,000 - 96,999 lb.	\$425,383	\$248.66
97,000 lb. and up	\$578,125	\$326.00

* Hourly rate is the monthly ownership costs divided by 176, plus operating costs. Unit prices used in this calculation are diesel fuel at \$2.60 per gallon, mechanic's wage at \$46.29 per hour, and money costs at 4.875 percent.

Source: EquipmentWatch.com, phone 800/669-3282

Buying File: Concrete Slipform Pavers



Shown here working with a GHP-2800 concrete slipform paver, the new GOMACO IDBI attachment independently inserts transverse joint dowel bars, powered by its own Cat C4.4 diesel engine. Designed in-house, the GOMACO G+ control system on the attachment features the same graphical design as the innovative G22 digital controller for full-sized machines.

says Bullock. From its roots as strictly a curb-and-gutter machine, the Power Curber 5700 has evolved into the 5700-C, “a-one-machine-does-it-all” slipform paver handling sidewalk, V-ditch and barrier wall. For the 25th anniversary of the 5700 Series in 2010, Power Curbers is introducing the optional Max Package, which outfits the 5700-C with larger crawlers, all-crawler steering, and a repositionable right post for pouring large variable barrier up to 8 feet high and for paving to a width of 12 feet.

“Today, curb contractors are being forced to do a little of everything – rehab, commercial parking lots, DOT, government projects. Some are venturing into barrier wall and other concrete applications for the first time,” says Bullock. “Specifically, we’ve seen more projects requiring large profiles like variable barrier wall, wide V-ditches, and other structures involved in infrastructure. This is our response.” Available immediately, the 5700-C-Max will be on display at World of Concrete

2010, being held Feb. 2-5 at the Las Vegas Convention Center.

Among the half-dozen manufacturers traditionally serving the concrete slipform paver market in North America, Terex Roadbuilding offers four base models according to Spec-Check.com, but did not have product updates to report at this time. The aforementioned GOMACO, G&Z and Power Pavers did report, along with Heavy Equipment Manufacturing (HEM) and RexCon. At the same time, Wirtgen Group announced it will begin introducing to North America its concrete pavers long established in Europe, starting with two compact models oriented to the curb-and-gutter market (see Buying File Gallery, Page 42).

With concrete contractors continuing to not only drop many hundreds of thousands of dollars for their pavers, but also eager to open their minds to new uses of that equipment, the market breeds industry optimism, according to GOMACO.

Concrete Slipform Paver Specifications (by paving width)

Model	Maximum Paving Width*	Standard Paving Width	Maximum Paving Depth	Engine Make / Model	Gross Engine Output (hp)	Max. Paving Speed (fpm)	Operating Weight (lb.)
HEM 8-16	16' 0"	8' 0"	16"	Cat n/a	179	n/a	33,100
GOMACO Commander III-4T	20' 0"	12' 0"	n/a	John Deere 6068HF285	185	37	48,500
GOMACO GT-6300-4T Slipform	20' 0"	16' 6"	n/a	Cummins 6BT5.9	155	28	36,900
Terex Roadbuilding SF2204B HVW	20' 0"	8' 4"	n/a	Cat 3126B DITA ATAAC	250	22	55,000
HEM 12-27	27' 0"	12' 0"	20"	Cat n/a	240	n/a	59,100
GOMACO GHP-2800-2T	32' 0"	24' 0"	n/a	Cat C-9	335	122	70,000
GOMACO GHP-2800-4T	32' 0"	24' 0"	n/a	Cat C-9	335	73	82,000
GOMACO GP-2600-2T	32' 0"	24' 0"	n/a	Cat C-9	275	n/a	65,000
GOMACO GP-2600-4T	32' 0"	24' 0"	n/a	Cat C-9	275	n/a	79,000
Power Pavers SF-2700	32' 0"	27' 0"	16"	Cummins QSB5.9	215	18	48,000
Power Pavers SF-3000	32' 0"	27' 0"	20"	Cummins 6CTAA8.3	250	30	65,000
RexCon T&C I	34' 0"	12' 0"	20"	Cat C9 ACERT	325	12	60,000
Terex Roadbuilding SF3502C	34' 0"	24' 0"	18"	Cat C9 ACERT	350	35	73,000
Terex Roadbuilding SF3504C	34' 0"	24' 0"	18"	Cat C9 ACERT	350	30	99,000
Guntert & Zimmerman S850 Quadra	34' 6"	12' 0"	18"	Cat C9 ACERT	350	16	90,200
HEM 14-37	37' 0"	14' 0"	20"	Cat n/a	325	n/a	82,850
Guntert & Zimmerman S1000	44' 0"	18' 0"	24"	Cat C9 ACERT	350	16	95,500
Terex Roadbuilding SF6004	44' 0"	12' 0"	18"	Cat C-15 DITA ATAAC	425	30	115,000
GOMACO GP-4000-2T	50' 0"	24' 0"	n/a	Cat C13	440	20	88,000
GOMACO GP-4000-4T	50' 0"	24' 0"	19"	Cat C13	440	20	115,000
Guntert & Zimmerman S1500	56' 0"	12' 0"	24"	Cat C-12	425	16	106,500

* Equipped with paving extensions

Source: Spec-Check.com Xpanded Specs (as of November / 09)

"Concrete contractors are the most innovative people in the world," says Godbersen. "They are willing to try new applications, take on new challenges, and adapt to unique job-site conditions and requirements. They are now asking more questions about pervious and roller-compacted concrete, white-topping and bridge deck finishing. If there is an upside to a down market, it is our opportunity to investigate and invest, even more, in innovations which will allow contractors to do their job more efficiently and more cost-effectively. I think everyone who attends World of Concrete or BAUMA this year will be pleasantly surprised at all of the new paving concepts that we have in our booth.

"Have contractors' needs changed? No, not really," he says. "They want a dependable company that has traditionally provided equipment with versatility, quality, safety, and return on their investment. What we are seeing is contractors looking for new markets and new ways

to keep their crews and equipment busy."

In this area, the proof is in the mix, says Godbersen. "I think that 3D or stringless paving is a good example. GOMACO was the only one working in partnership with several vendors on stringless paving for many years. As a matter of fact, this is our 10th anniversary of the first road, as well as the first curb-and-gutter in the world, paved without a stringline. Today, we are paving airports, highways, tunnels, safety barriers and other applications all around the world without stringline.

"This has been possible because of partnerships with contractors who have been willing to try stringless, and many of whom achieved results that far exceeded their expectations," he says. "Everyone anxiously awaited this technology, and today it is not only possible, but a very common option that is chosen for our paving products."

The road to economic recovery is, indeed, paved. 

Gallery of Concrete Slipform Pavers



GOMACO

New Dowel-Bar Insertion System For Concrete Pavers

The newest revolution to the concrete paving industry from GOMACO is an independently powered IDBI attachment that will insert transverse joint dowel bars in pavements from 12 feet wide at work behind the four-track Commander III (shown here slipforming barrier) all the way up to 50 feet wide behind the GP-4000, the largest of the company's four slipform pavers. The attachment is powered by its own 91-horsepower Cat C4.4 diesel engine; no power or hydraulics is required from the paver itself. A CAN cable connects the IDBI's controls to the paver's controllers, allowing the two systems to communicate.

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POWER CURBERS

Popular Machine Suits Residential Rehab Projects

The most popular of the Power Paver concrete models from Power Curbers, the two-track SF-2700 model is designed to pave widths ranging from 12 to 27 feet, and is particularly suited for residential rehab work with its side clearance of only 22 inches and low profile. Additionally, the SF-2700 can pave up to 32 feet with extensions. With a paving depth of 16 inches, it can be used for airport work. The SF-3000 (shown here) is the heavy-duty, high-production Power Paver model for work on highways and airports. Side forms hydraulically widen and raise 3 inches each to allow the operator to back over the previous day's pour.

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HEAVY EQUIPMENT MANUFACTURING

New Model Designed for Variety of Jobs

The newest addition to the Heavy Equipment Manufacturing concrete slipform paver product line, the HEM 8-16 SFP has a hydraulically adjustable main frame for paving widths of 8 to 16 feet, and can pave up to 24 feet while still remaining at 2,250 pounds per lineal foot of slab width. The HEM 8-16 SFP (shown here) can complete a wide range of concrete paving jobs, from barrier walls and trails to canals and mainline roads, the company says. An automatic dowel bar inserter and a four-track option is available on all three of the HEM slipform paver models, including the larger HEM 12-27 SFP and HEM 14-37 SFP.

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GUNTERT & ZIMMERMAN

Telescopic End Sections Now Available

Available either as options on new Guntert & Zimmerman concrete slipform pavers or as retrofits on machines already on the job, new telescopic end sections allow the paving kit to telescope in and out for 6 feet of quick width-change capability. Among other features of the S850 (shown here) and S1500 slipform paver models: 90-degree steering allows the unit, with the flick of a switch, to be moved from a current pour without leaving a large section to be poured by hand; split guillotine side forms allow the paver to back up over previous pours to likewise cut down on handwork; and a rigid paving kit produces a high-quality slab.

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WIRTGEN

North American Debut for Product Line

In what is a new product line offering to North America, Wirtgen will introduce two concrete paver models at World of Concrete 2010 in February, although the initial models will serve smaller, specialized jobs. The SP 15 (shown here) and SP 25 will be followed in ensuing years by the larger SP 500, SP 850, SP 1500 and SP 1600. All are being modified to meet the demands of the North American contractor, says Wirtgen, which has offered concrete pavers overseas for decades. With maximum paving widths of 6 and 12 feet, respectively, the SP 15 and SP 25 are "true multi-purpose machines" that lay curb and gutter, barrier, sidewalk, V-ditch, special applications and slabs. Both can be configured on site for left- or right-side pouring.

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REXCON

Company Covers Town & Country

A "power widening frame" not only makes the Town & Country 1 slipform paver (shown here) adjustable for jobs of various widths up to an optional maximum of 34 feet, but also easy to set up and tear down for mobilization, says RexCon. Telescopic main frame extensions are widened by a hydraulic motor driving the front and rear extension jack screws through a shaft. Both extend the same distance together – avoiding the threat to "skew" the end of the machine and cause damage. Other machine features include a power elevation system, telescopic auger strike-off assembly and hydraulically operated edge wings.

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What Metrics to Manage?

Utilization, downtime and cost per hour are my top three



Andrew Agoos

has spent more than 40 years in the equipment, service and maintenance side of heavy equipment. He has held senior management positions with Neff Rentals, Hubbard Construction Co., Austin Industries, and Caterpillar. He has strong opinions about equipment management: Some are based on facts; some are intuitive; some are anecdotal. He doesn't ask that you agree with him.

No matter what your company size, if you plan to make good, factual equipment decisions, you'll need these metrics.

If you manage equipment, no matter what your company title, you have metrics that you consider the most important. My top three are utilization, downtime and cost per hour. For the most part, I don't care how you define them or measure them; as long as you stay with whatever method you choose. Let's start with utilization.

Utilization (not availability):

Knowing utilization allows good management comparisons. For example, if you have a fleet of 20 similar-size wheel loaders, you can compare Brand A units to Brand B units of the same age. If Brand A utilization is significantly higher than Brand B utilization, then look into why. Is it used differently? Is it perceived by your field people as better designed for your work?

Utilization is also important because it tells me if I really need to own this machine. Utilization of on-road trucks is probably targeted to be around 95 percent. Most earthmoving equipment in southern states will be about 65 percent, and specialty machines such as soil stabilizers and pile hammers may be as low as 15 percent and still justify ownership.

Utilization is simply the time a machine works divided by the time it is required to work. Do not confuse utilization with availability. Availability is the time a machine is required and able to work divided by the time it is required to work. Availability is more complicated because it involves on-shift downtime, off-shift downtime, scheduled downtime (for example, PMs or track work), failures due to accidents or vandalism, standby time, and others. Your field people, the actual users, will probably want to know what standby time (some call this idle time) is recorded to account for weather, absent operators, or occasions when the machine is not needed.

Downtime (the inverse of uptime):

If you consistently measure downtime in

the same manner, you can see differences when you change brands, oils, maintenance practices, extend life cycles, or any other significant variable. If you track on-shift downtime (let's call it Code Blue), you'll be able to spot problem machines or problem operations and do something about it during its life. And as equipment managers, that's what we are trying to do. My guess is that less than 10 percent of general contractors track downtime, and that's unfortunate.


Code Blue is what we all want to avoid. Planned downtime is not usually a problem. Daily fueling and maintenance should be planned events. On most of my jobs, we usually fuel and complete daily maintenance for critical machines before or after the work shift. For example, we can fuel, lube, and inspect the large excavators between 6 a.m. and 7 a.m. The fleet work begins at 7:00, and the articulated dump trucks, tractors, and compactors will be fueled and maintained throughout the day.

Cost per hour (for normal wear):

Cost-per-hour information allows you to compare Brand A to Brand B, compare operators (where assigned), compare Construction Division A to Division B, and better decide when to retire key fleet pieces.

This is the easiest metric to capture, but one of the most useful. I recommend you track and carefully trend normal wear operating costs excluding fuel and operators compensation. If you do include fuel, the data has to be accurate because the cost of fuel is so high. It's also better if you can separate and distinguish costs of undercarriage, tires, and ground engaging components because they are typically large buckets of costs.

Larger contractors tend to collect all three of these metrics. But no matter what your company size, if you plan to stay in business and make good, factual equipment decisions, you'll need some combination or all of these.

Think about it. 



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Komatsu Hybrid Excavator 'Swings' into Action

The Hybrid PC200LC-8, which is making its way into U.S. hands, sips fuel and cuts down on emissions

Hybrid technology is all the rage these days. Carmakers continue to add hybrid vehicles to their product line-ups, and in the last few years, construction-equipment manufacturers also have entered the game. Volvo, for instance, will soon bring a hybrid wheel loader to the market, and Doosan and Kobelco both are developing a hybrid excavator.

In North America, the first equipment manufacturer to get out of the gate with a large hybrid excavator is Komatsu, which has begun putting its Hybrid PC200LC-8 into the hands of U.S. suppliers. Komatsu began selling the hybrid excavator to Japanese construction companies in mid-2008 and to Chinese companies in August 2009.

Taking a cue from hybrid cars, which produce energy from the friction of braking, the Hybrid PC200LC-8 generates electricity each time the operator brings the upper structure to a stop. AC energy created by the stopping force of the swing motor is sent through an inverter to convert it to DC energy, and then stored in a capacitor.

Unlike hybrid cars that use a battery to store and discharge electricity gradually, Komatsu's hybrid excavator employs a capacitor instead because quick bursts of energy required by large equipment such as excavators. When the capacitor receives DC energy from the inverter, it discharges the energy immediately to assist the swing arm or the engine.

"With a capacitor, we can store energy and have instantaneous energy available," says Komatsu project manager Sean Maloon, "whereas a battery would have to wait for a chemical reaction for it to work."

Also powering the excavator is a generator motor located in between the engine and the hydraulic pump. The generator charges the capacitor when the swing arm is not in use, and it receives energy from the capacitor to help drive the engine.

In terms of performance, the 138-horsepower Hybrid PC200LC-8 is virtually indistinguishable from its non-hybrid brother, Maloon says. Both the hybrid and conventional versions of the PC200LC-8 have an operating weight range of 43,643 and 47,260 pounds. Both excavators also have a digging arm force of 27,780 pounds, swing torque of 49,907 foot-pounds, and digging depth of 21 feet 9 inches. Boom, stick and bucket cycle times remain unchanged.

The differences come into play when measuring fuel use



Komatsu's hybrid excavator uses the stopping force of the swing arm to produce energy. That energy is stored in a capacitor and then discharged immediately to help power the swing arm, engine, and other machine components.

and emissions. According to Komatsu, the hybrid consumes 25 to 41 percent less fuel than its non-hybrid counterpart. It also produces less carbon-dioxide emissions; in a typical hour of operation, the hybrid excavator emits 22 pounds less CO₂.

The hybrid system is not solely responsible for the reduction in fuel consumption. While the conventional PC200LC-8 runs on a 6-cylinder engine, the hybrid is powered by a 4-cylinder engine. As a result, the hybrid excavator runs at lower idle.

"We lower the cylinder output and the engine rpm, and we use the generator motor and the stored energy in the capacitor to assist this 4-cylinder engine to act like a 6-cylinder engine," Maloon says. "Less cylinders mean we burn less fuel."

Because the excavator produces energy via the swing motor, operators will see more fuel savings the more they use the swing function, Maloon says.

"Fuel consumption is far less than a standard machine when you are loading a truck or digging a ditch — doing a lot of swinging applications," Maloon says. "If you are not doing a lot of swing applications, then you're not going to be save as much fuel."

The cab hosts just a couple of minor changes. The LCD monitor, for example, now displays a readout and status of the hybrid system. Also, just below the monitor sits a red button, which, if engaged, shuts off swing-arm operation in the event that the hybrid system malfunctions.

Watch the Hybrid PC200LC-8 at work at <http://www.constructionequipment.com/digest>.

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By TOM BERG, Truck Editor

Coronado SD Is Freightliner's New Heavy Vocational Truck

Class 8 model can be ordered with big-bore Detroit and Cummins diesels rated up to 600 horsepower

Freightliner Truck's next-generation heavy vocational model is the Coronado SD, a severe-duty version of the Coronado highway tractor with stronger components designed specifically for hauling heavy loads on- and off-highway.

The Coronado SD, replacing the FLD-SD that went out of production in December, is a traditionally styled Class 8 model that can be ordered with big-bore Detroit and Cummins diesels rated up to 600 horsepower, forward- or setback steer axles rated up to 20,000 pounds, rear tandems up to 70,000 pounds, and lift axles rated at up to 20,000 pounds.

The reinforced fiberglass hood features impact-resistant fender edges, a stainless-steel grille, and projector-beam headlamps that use common, easily replaceable bulbs. Dual chrome steel intakes feed intake air to a single air filter under the hood. Optional pre-cleaners create a vortex effect to spin dust and heavy water particles out of the air before it reaches the filter. Combined dust-holding capacity is equal to or better than traditional twin external cleaners, executives said.

The cab consists of an outer door frame and belt rail made from aluminum and combined with a steel inner reinforcement, resulting in sturdiness and light weight. It opens 70 degrees for easy entry and exit, Freightliner executives said. Doors and windows are sealed tightly against noise and moisture. The cab uses noise-absorbent panels in the floor, front wall, sides and back panel.

The interior features a new "intricate" dash with controls and switches located within easy reach, and gauges that are well-lit and easily seen. All switches and instruments are backlit by LED lights for non-glare nighttime viewing, and extra-large panels provide greater flexibility and convenience in gauge combinations, allowing for the installation of radios and navigation systems. The dashboard has mini-



Coronado SD can be ordered as a tractor or straight truck. It will use EPA-'10 diesels from Detroit and Cummins with exhaust systems that allow for easy mounting of dump beds and other bodies.

mal joints to prevent rattles and squeaks, making it one of the quietest dashboards Freightliner engineers have ever designed.

Detroit Diesel's DD13, DD15 and DD16 and Cummins' ISX meet the upcoming EPA 2010 exhaust emissions standards. Detroit Diesel engines are equipped with BlueTec exhaust after-treatment equipment that deliver a fuel economy improvement of up to 5 percent compared to EPA 2007 engines. A variety of exhaust configurations, including a compact 1-Box design, can be ordered. The 1-Box has low back pressure and allows for a clean back-of-cab for close mounting of dump beds and other bodies.

The Coronado SD will be available as a straight truck or tractor. Freightliner dealers have detailed specifications, availability and pricing. More information can be found at <http://www.freightlinertrucks.com/trucks/find-by-model/coronado-sd/>. In addition, look for a Hands-on Trucking feature story on the Coronado SD in our April issue.

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By MIKE ANDERSON, Senior Editor

Compact Wheel Loader Stands a Little Taller

Caterpillar fills gap between 906H and 908H compact wheel loaders by incorporating some of each in the new 907H model

For compact-equipment operators, a few inches can make the difference in machine selection. With a cab height of 8 feet 1 inch, for instance, the 70-horsepower Caterpillar 906H wheel loader puts a standard 1.2-cubic-yard loading tool into places where even slightly larger carriers dare not trek. By comparison, the 79-horsepower 908H, with a standard 1.4-cubic-yard bucket, stands tall with 7 additional inches of cab height.

Along comes the 907H to, says Caterpillar, meet the needs of equipment users whose needs fall somewhere in between. “It’s a bit of a hybrid,” says Todd Lynnes, Caterpillar customer product solutions manager for all compact loaders. “Essentially, if you look at the design of that machine, it’s got the front end of a 906 frame and the rear of a 908 frame, with the same horsepower as a 906. It gives us a little bit higher cab.”

The profile of the 906, allowing the machine to fit in containers and the back of trucks, “was a key design element for that size of wheel loader,” explains Lynnes. “But what we found is there are also applications where operators don’t have that specific requirement and would like to sit up a little higher

and have better visibility to the forks and other attachments. Well, the cab height on the 907 is 5 inches taller.”

Benefits to the 907H over the 906H include a larger fuel tank, at a capacity of 20.6 gallons compared to 13.7. “Guys who once again don’t have that height limitation are going to have extended work periods,” says Lynnes. The 3-percent gains in operating weight and bucket capacity translate into an 8-percent gain in tipping load, he says.

The 907H, which was previously available in Europe, offers many of the features and options as the 906H and 908H models. Standard features include parallel-lift Z-bar loader linkage, two-speed hydrostatic drive, differential locks in both axles,

Basic Specs: Caterpillar 907H

Operating Weight	12,809 lb.
Bucket Capacity*	1.3 cu. yd.
Cab Height	8' 6"
Wheelbase	85"
Engine Model	Cat C3.4
Net Power	70 hp
Fuel Tank Capacity	20.6 gal.

* When equipped with general-purpose bucket



As with the 906H and 908H wheel loaders, the new 70-horsepower Caterpillar 907H has a skid-steer-loader-type coupler allowing the use of the hydro-mechanical work tools customers already use on their skid steer and compact track loaders.

and a hydraulically actuated skid-steer-loader-type coupler that allows the use of many of the hydro-mechanical work tools that customers currently own for skid steer, multi-terrain and compact track loaders. Trenchers and stump grinders are among those attachments.

An optional high-flow system, providing 33 gallons per minute of flow, handles more demanding tools such as cold planers and snow blowers. Other options include ride control to cushion boom-cylinder movement during load-and-carry applications, a wiring harness that permits fourth-function control, a machine creeper feature to allow consistent ground speed during full-out tool use, and a high-speed road gear for travel up to 22 miles per hour.

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Astec Launches Concrete Business With Continuous-Mix Mill

Twin-shaft mixer can be configured to make conventional and low-slump mixes

Astec officially entered the concrete business in December 2008 with formation of its Concrete Products Group around modular applications of its twin-shaft mixer, a plant capable of producing low-slump and conventional concrete in a continuous process.

Astec's concrete heritage is surprisingly deep. In the 1970s, Barber Greene adapted some of its twin-shaft asphalt mixers for customers specifically to mix cement-treated base (CTB). Those Barber Greene operations were purchased by Astec. In the early 1980s, customers asked the group to develop a similar plant around a twin-shaft mixer to produce the stiff permeable-concrete mix for the Disney's Epcot-Center parking lot in the Orlando swamplands. Shortly afterward, the same plant was used to produce the concrete that paved The Port of Los Angeles.

Astec's version of the concrete plant produced in a continuous process.

"From that point forward, Astec continued to build on order that CTB plant to meet customers' needs," says Jim Johnson, director of sales for Astec's Concrete Products Group. He says the twin-shaft mixer became the machine of choice for mixing stiff roller-compacted concrete.

As world competition for concrete recently has driven up the material's price, contractors began to ask Astec for a twin-shaft, continuous-process mixer that can make conventional concrete as well as stiffer roller-compacted and permeable concrete mixes.

"They can't afford to have a tilt-drum mixer for conventional concrete and a twin-shaft mixer for roller compacted concrete," says Johnson.

Astec's modular systems design offers the mixer, weigh bridge, self-erecting silo, aggregate bins, screen decks and

other pieces to configure complete plants for Portland cement concrete, cement treated base, or roller compacted concrete.

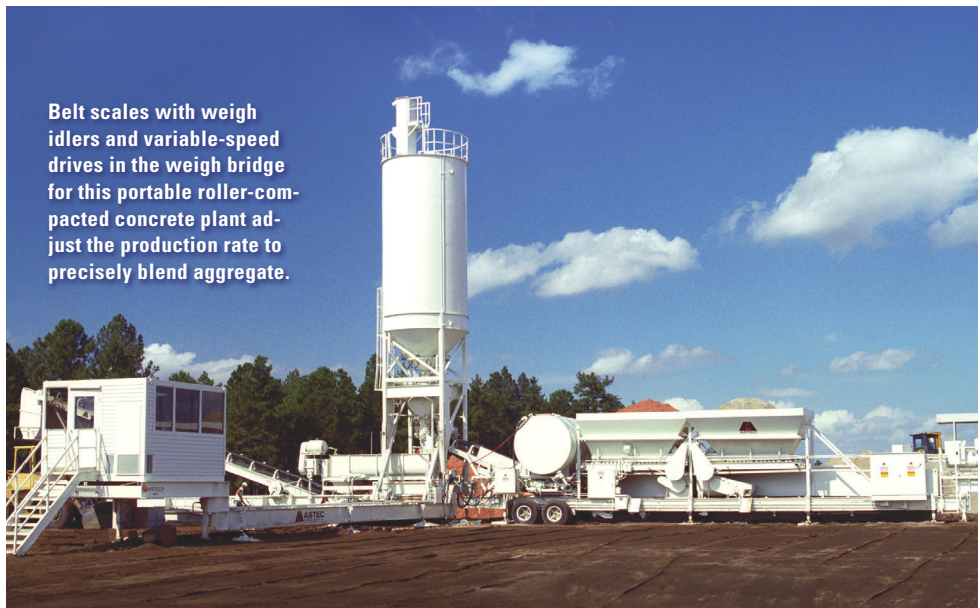
The continuous process makes use of Astec's experience with using belt scales and variable-frequency conveyor drives and control systems. The smaller twin-shaft mixer only holds 2 to 4 yards, compared to traditional batch plants that can mix up to 10 yards at a time. If the plant must be shut down, there is less waste in the mixer.

Johnson claims the twin-shaft mixer incorporates water and cement in high-slump mixes thoroughly enough that the amount of cement in the mix can be reduced without fear of falling short of compressive-strength specifications.

Single-mixer plants are available with capacities from 80 to 350 cubic yards, and dual-mixer arrangements are available. Portable plants transport in three or four loads.

Continuous-blending dry concrete plants, aggregates from individual bins are placed on the fully shrouded conveyor in layers, allowing dry cement to be spread in between. At discharge, a water distribution system delivers a continuous curtain of water, sprayed around the falling aggregates to wet the materials uniformly.

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Belt scales with weigh idlers and variable-speed drives in the weigh bridge for this portable roller-compacted concrete plant adjust the production rate to precisely blend aggregate.



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Market Watch Lite

By KATIE WEILER, Managing Editor

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▶ Caterpillar

An integrated remote control system is available for Cat D10T, D11T and D11T CD track-type tractors. According to Cat, equipment owners can work in hazardous environments, meet regulatory requirements, and reduce liability — all while protecting operators. The basic system includes a primary transceiver and antenna; remote-control ECM; relay block from which auxiliary functions are controlled; in-cab emergency shut-down switch; in-cab remote control mode indicator; and an on-cab beacon that indicates when the machine is under remote control. Visit ConstructionEquipment.com/info and enter 176



◀ Komatsu

Komatsu designed its Parallel Link Undercarriage System (PLUS) with sealed and lubricated, rotating bushings to wear all components evenly without requiring a bushing turn. Komatsu testing and field trials suggest

that it can last up to twice as long as conventional undercarriage. A taller, hardened link provides longer wear life. Segmented sprockets are designed to shed material, which minimizes packing. Carrier rollers have a larger diameter to increase wear life, and track rollers with larger flanges and roller guards that contact the link instead of the pins help maintain track alignment.

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◀ Hilti

Hilti says its TE 1000-AVR 26-pound electric breaker has the lowest vibration in its class, while its 1,600-watt motor delivers power to produce in uses from demolishing concrete slabs to digging clay. An active cooling system reduces wear and tear, the three-chamber sealing helps keep dust out of the tool, and the brushless SR motor eliminates the need to replace carbon brushes. The unit's Power Reduction Switch softens impacts by 30 percent.

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▶ Hobart

The Hobart AirForce 500i and 700i portable plasma cutters are capable of cutting 3/8-inch and 5/8-inch mild steel, respectively, and are said to sever 5/8-inch and 7/8-inch steel. The 500i connects to 115- or 230-VAC power receptacles; and the 700i is powered by 230-VAC. Features include ergonomic trigger safety, efficient air consumption, and economically priced torch consumables, the company says.

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▶ Topcon

Topcon's new slope sensor for graders and dozers is a simple drop-in replacement for existing sensors. It is backward-compatible to Topcon's Systems Four and Five machine-control systems. The maker says cross-slope performance is improved in a wide temperature range, and claims the LED status lights make trouble-shooting easier and faster.

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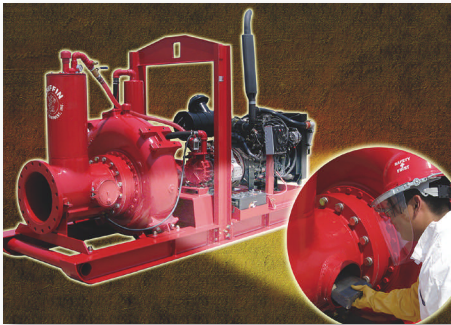
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- ⇒ What money has been spent and what will be available.
- ⇒ How to explain the importance of emissions reduction to your management team.

Market Watch Lite

► Kasi

The addition of two heating elements to the Patriot infrared heating chamber increases heat transfer uniformity and reduces exposure time while providing true seamless asphalt repair, says Kasi. The Patriot chamber now has eight infrared elements that can heat asphalt in about five minutes. The infrared restoration process fuses and compacts the old asphalt with the new, allowing a road to be opened to traffic immediately after repair.

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◀ Griffin

Non-Clog pumps from Griffin can pump more than 17,000 gpm, and they can pass a solid measure just over 4 inches. A side clean-out port allows the simple removal of large debris in the water without separating the pump from the suction pipe. The Non-Clog pumps develop discharge heads of 240 feet or more.

The pumps are available in vacuum-assist, diaphragm prime or compressor prime, and they can be powered by electric or diesel.

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► Panasonic

Panasonic's Toughbook 30 laptop and 19 convertible tablet, as well as its ultra-mobile Toughbook U1 handheld, were the first rugged mobile devices to pass 20 critical MIL-STD-810G (Military Standard) tests applicable to mobile computers, as well as IP65 ingress protection and ASTM D4169-04 vehicle vibration tests. Testing was conducted and certified by an internationally respected third-party laboratory.

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► Caterpillar

Cat rounds out its 20- to 400-kW line of mobile, diesel generator sets with the XQ175, rated at 175 kW. The new genset is driven by the Tier3 Cat C6.6 engine with ACERT technology. The generator is capable of switching between 480/277-V or 208/120-V, three-phase operation through a voltage changeover board that has fewer moving parts than the traditional voltage-selector switch.

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◀ Hilti

Built for transferring height, setting slope or leveling in both indoor and outdoor conditions, Hilti's PRE 3 rotating laser features an operating range of up to 1,300 feet in diameter. The large laser-receiving window with digital measurement quickly localizes the laser beam, saving time on the job while providing reliable readings. The device outputs an automatic shock warning and shuts down in the event of excessive vibration.

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Continental

The HTR2 all-position wide-base tire for construction vehicles offers 20 percent more wear volume than the original HTR, thanks to a wider tread pattern and an increase in tread depth (now 22/32 inches). The tread compound is cut- and chip-resistant, which allows for higher tread endurance and optimal performance, and this compound also is 5 percent less rolling resistant than the original HTR, resulting in greater fuel efficiency.

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Bobcat

Bobcat now builds a disc harrow and 60- and 72-inch soil conditioners for Category 1 three-point hitch on Bobcat CT225 to CT450 compact tractors and the Toolcat 5610 utility vehicle. Four gangs of five 18-inch discs are adjustable to provide different cutting depths for cultivating soil and chopping debris. Discs on the two front gangs are notched for better penetration.



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Timberline

A wireless option for its Power-Rotating Tree Shears allows operators to remotely activate the tree shear's electric diverter and alternate between shearing and hydraulic rotation. Because the wireless

technology is incorporated into the shear rather than the machine, tree shears can be mounted on a variety of construction equipment while maintaining its remote-control capability.

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Titan Trailers

Titan's V-18 aluminum V-Floor unloading system, lighter than the company's original V-Floor model, is constructed with 18 aluminum slats, compared with the original V-Floor's 9



slats, and provides resistance to leaks and heat thanks to a floor-seal-free sub-deck. The V-18 system is intended for materials that may be too demanding on a standard slat but do not require the ruggedness of a steel V-Floor slat.

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Market Watch Lite

▶ Roadtec

A new grade and slope control automation system designed for cold planers, Smooth-Mill is available as an option on Roadtec RX-500, RX-700 and RX-900 milling machines. Using MOBA components, the system automatically adjusts the depth of cut based on pre-set requirements. It features two dual control boxes for ground personnel, each capable of controlling both sides of the cold planer, as well as a separate control box for the machine operator/driver.

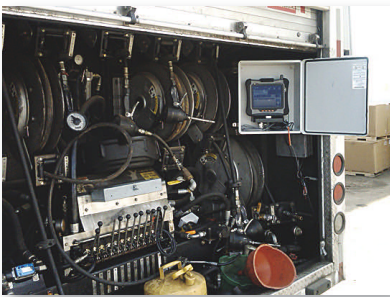
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▶ Innovative Electronics

As an alternative to the traditional hard-wiring of towed vehicles, the Innovator brake control from Innovative Electronics mounts directly on electric brake trailers, offering wireless operation and the flexibility for the trailer to be pulled by any vehicle with towing capabilities. The brake control unit mounts either to the existing jack plate or directly to the frame of any one-, two- or three-axle trailer, says Innovative.

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▶ Dexter + Chaney

Designed to simplify heavy equipment servicing, Spectrum Equipment Service System electronically collects asset-management data including equipment hours and fuel usage, eliminating the hassle and potential mistakes of having personnel climb onto equipment to read the hour meter and jot down readings. The system is comprised of a monitor attached to the piece of equipment,

a fuel controller, and a Field Master touch screen device mounted in the service truck.

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▶ Express Blower

Equipped with Express Blower's material feed system featuring a solid belt floor and electronically controlled auger system, the TM-70 pneumatic blower is a fully self-contained, steel-framed aluminum box designed to work with a variety of tractor configurations to spread mulch, compost and other materials. The standard version is powered by a Cat C-7 engine generating 275 horsepower, but also available are the TM-70MD with a 300-hp C-7 engine and the TM-70HD with a 335-hp C-9 engine.

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▶ Enerco

Heatstar product line by Enerco is designed to leverage a high-static pressure fan that directs clean air through up to 100 feet of connectible ducts for heating enclosed building construction sites and other large temporary indoor spaces. For on-site mobility, each of the four oil-fired models ranging from 110,000 to 400,000 BTUs per hour has heavy-duty lift handles and 10-inch pneumatic tires. The fifth model generates 380,000 BTUs per hour and is able to run on either propane or natural gas.

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Glacier Computer

Glacier designed the T400 tablet for use in field-service, warehouse, freight and manufacturing applications. The rugged tablet features a bright 10.4-inch display and touch screen. The T400 weighs less than 3 pounds and allows the battery to be replaced without shutting down the computer. It comes with a 1.6 GHz Atom processor, up to 2 GB of DRAM, onboard camera and numerous programmable function buttons.

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Case

Case offers the Klac Quick Coupler for seven of its compact and minimum swing radius excavators — CX17B, CX27B, CX31B, CX36B, CX50B, CX75 and CX80. The mechanical quick coupler features automatic locking that is visible from the cab, as well as a secondary safety locking mechanism. It supports a full range of attachments, from buckets to hydraulic hammers.

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Fleetwest

Part of Fleetwest's Load'N'Go line of fully removable full-size utility bodies, the Powerbody is a transferable, steel service body fitted with a generator, compressor, and optional welder which fits Ford, Dodge, and GM 1-ton pickups. It includes a control panel in the side compartment for easy access and a 1,000-pound slide-out parts drawer. Models are designed for long- and short-bed pickup trucks.

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Enerco

Heatstar HD forced-air heater line is designed for rugged on-site use, featuring heavy-duty high-output fans, 10-inch pneumatic tires, and large capacity fuel tanks. Offered in sizes from 50,000 to more than 610,000 BTUs, the forced-air heater line comprises seven heaters consisting of two compact units, three wheeled units, and two large direct-fired heaters with the power to heat up to 114,000 square feet.

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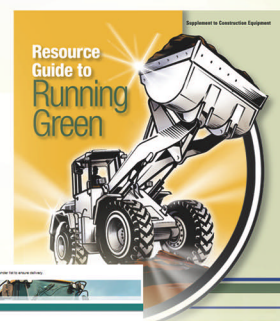


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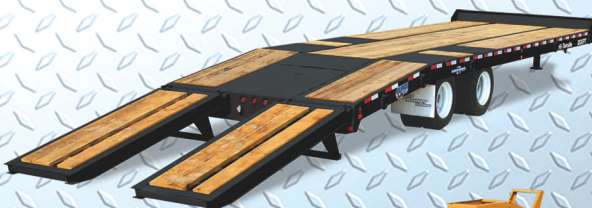
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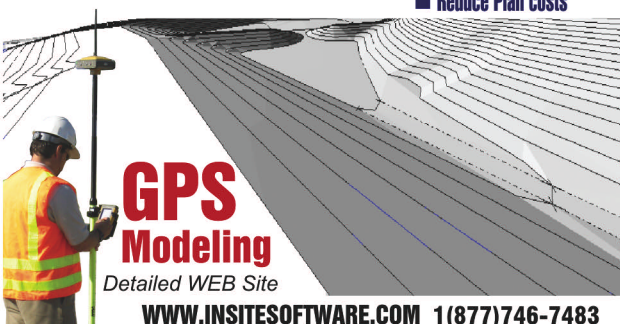
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Reed Business Information, 2000 Clearwater Dr., Oak Brook, IL 60523; Fax: 630/288-8185

General Manager –
Construction Media
Dean Horowitz, 630/288-8180
dhorowitz@reedbusiness.com

Group Director – Sales/
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Tony Mancini, 610/688-5553
armancini@reedbusiness.com

Director – E-media Solutions
Shannon Wasiolek, 630/288-7963
shannon.wasiolek@reedbusiness.com

Midwest Region

Director – Midwest Region
Rick Blesi, 630/288-8140
rblesi@reedbusiness.com

Key Accounts – Integrated Sales
Mary Adee, 630/288-8134
madee@reedbusiness.com
States: AR, IA, IN, KS, LA, MO, ND,
NE, OK, SD, WI

Key Accounts – Integrated Sales
Tim Gillerlain, 630/288-8168
tim.gillerlain@reedbusiness.com
States: IL, KY, MN, OH, TN, WV

Eastern Region

Director – Eastern Region
Dan Colunio, 781/734-8360
dcolunio@reedbusiness.com

Key Accounts – Integrated Sales
Adam Grubb, 317/913-1608
adam.grubb@reedbusiness.com
States: CT, MA, ME, NH, NJ, NY, PA, RI, VT,
Eastern Canada

Key Accounts – Integrated Sales
John Huff, 630/288-8189
john.huff@reedbusiness.com
States: AL, DC, DE, FL, GA, MD, MS, NC, SC, VA

Western Region

Director – Western Region
Jeff Elliott, 616/846-4633
jelliott@reedbusiness.com

Key Accounts – Integrated Sales
Mike Ostrowski, 630/288-8139
michael.ostrowski@reedbusiness.com
States: AK, CA, HI, OR, WA, Western Canada

Key Accounts – Integrated Sales
Brian Grohe, 630/288-8159
brian.grohe@reedbusiness.com
States: AZ, CO, ID, MT, NM, NV, TX, UT, WY

Product Specialists – Integrated Sales

Rob Bertrand, 630/288-8615
rob.bertrand@reedbusiness.com

Brian Grohe, 630/288-8159
brian.grohe@reedbusiness.com

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High-Speed Grading With a Dozer?

Equipment operator Spartakoos Valverdi didn't think it was possible, but he does now after spending a couple of days on a John Deere 750J crawler dozer equipped with Topcon's 3D-MC² machine control system.

The 3D-MC² uses GPS in addition to new sensor technology — a combination of inertial sensors and gyros — that calculates and updates such information as blade tilt, machine position in every direction, and instant change in direction, at a rate 10 times quicker. The result is what Topcon has touted as an increase of 200 percent or more in smooth grading speed for dozers.

Video of 3D-MC² at ConstructionEquipment.com/Digest.

Komatsu's Hybrid Excavator Swings into Action

Komatsu's hybrid excavator — recently launched in the United States — uses the stopping force of the machine's swing arm to produce energy. That energy is stored in a capacitor and then discharged immediately to help power the swing arm and engine.

More Emissions Regulation On the Way

EPA will expand the number of designated nonattainment areas next year, meaning more counties will be deemed "unclean," opening the door for stricter emissions controls on equipment operating within them.

Listen to John Deere's Joe Mastanduno discuss the revised non-attainment zones and what regions might be next.



Latest Big Iron Blog Posts

- Larry Stewart: Operators of off-road diesel equipment will exceed the ambitious emissions targets set by the California Air Resources Board.
- Rod Sutton: Dealers are cutting back on the very things that their customers demand: high levels of service and support, and parts availability.

More Digital *Digest*

How Will Contractors and Equipment Suppliers Do in 2010?

Cat Demos Remote Control Dozer System 

A Look at New Machines Unveiled at ICUEE 2009 

Trimble Creates a Community for Contractors 



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