FOCUS

2ND ISSUE 2009

THE 92ZV-2 IS HERE • SOCOTHERM-LABARGE • FUEL-SYSTEM CLEANLINESS • KAWASAKI IN INDIA

Sam Shelton, Editor – Kawasaki
(770) 499-7000 • SShelton@KCM-America.com

Kawasaki

One Focus. Complete Solutions.

BORN TO BE BEST

The new Kawasaki 92ZV-2 has come off the drawing board fully conceived and ready to tackle its intended applications: **load-out in quarries or sand/gravel operations, hopper feeding at asphalt and cement plants, log handling, recycling/ refuse, and fork applications for pipe and pallets. In contrast, if you've ever examined the field of six-cubic-yard wheel loaders, you'll know that most are really stretched versions of smaller models. As a result, over time, those manufacturers have had to beef-up the weaker areas to improve durability.**

THE DESIGN MANDATE

Given the extraordinarily tough applications in which these machines are used, and in order to meet Kawasaki's own demanding design standards, the 92ZV-2 was developed from the ground up. In other words, this workhorse is brand-spanking new; it is not based on a smaller model. It has its own chassis, lift arms, transmission, and linkage.

That makes the 92ZV-2 unique for this class. It was designed specifically for the heavy demands of this size wheel loader.

STANDARD FEATURES

The 92ZV-2 is powered by the Cummins QSM11 Tier III engine. It has 284 fhp (net flywheel — fan losses are deducted), 1,121 ft-lbs of peak torque, and a huge 47-percent torque rise to provide great power for digging and hill climbing. Cummins Tier III engines are simpler and easier to service than other brands. Two engine modes means the operator can select between power mode for demanding applications and a more fuel-efficient (FE) mode for lighter apps. The automatic reversible cooling fan with manual override allows the fan to reverse air flow automatically throughout the cycle to help clean debris from the radiator and cooler cores. And the innovative folding engine access panel provides exceptionally full access to the engine compartment, making service even easier.

The newly designed countershaft transmission is built by Kawasaki. It offers smooth shifting and outstanding reliability. One unique transmission feature is the AutoBrake which is similar to what can be found on our larger machines. This protects the transmission from overspeeding or improper directional shifting. It places the transmission in neutral and applies 50-percent brake pressure to reduce vehicle speed until the shift selection can be made safely. No other competitor has this patented feature.

Only Kawasaki offers dual Z-bar linkage in this size class. It delivers high breakout force to handle tough digging and provides outstanding visibility to speed cycles and increase safety. The lift arms are made of heavy alloy steel for durability and long life. Competitive models use a cheaper single-cylinder design that blocks center visibility and often provides less breakout force. There is an optional lift arm for heavier loads and higher capacities.

Unlike most of the competitive models, the 92ZV-2 has a full box-section rear chassis, not a channel or light-duty plate frame. That's because we believe in durability. We also provide heavy center pins and support structures — actually, the heaviest in this class — for outstanding center pin life. Our wheelbase is long for a smoother ride but, remarkably, our turning circle radius is the tightest in the class.

It's easy to access main components of the new 92ZV-2

Other standard features include:

- Strong front chassis to handle the heavy digging forces.
- Standard torque proportioning axles for less wheel slippage in most materials.
- In-cab adjustable boom kickouts, adjustable transmission declutch function, tilt/telescoping steering wheel, AM/FM radio with CD player, air ride seat, thermostatically controlled air conditioning.
- Many universal parts such as engine filters, flanged hoses, universal joints for easy parts availability and lower costs.
- Front shield is flat glass, mounted in rubber gaskets, for quick and easy change-out.
- Wide front fenders with mud flaps keep debris from being kicked up.
- Efficient Loading System (ELS) improves digging performance for quicker cycles.
- Low torque, wet disc brakes are easy to service and provide exceptional life and braking ability.
- Dual brake circuits for added safety.
- Efficient, low-cost, dirt-tolerant gear pumps for reliable hydraulic power.
- MODM monitoring system provides valuable operating and maintenance data.

Options include:

- Limited Slip Differentials for more traction for more extreme environments.
- K-LEVER joystick steering for reduced operator fatigue.
- F-R directional switch by hydraulic controls for faster cycling.
- Back-up camera for excellent rear visibility.
- Ride control for smoother, faster cycles with less spillage.

SIMPLICITY

The 92ZV-2, like other Kawasaki loaders, is among the simplest in the industry. Many manufacturers have added a wide range of complex and "sophisticated" designs to provide a specific benefit. Unfortunately the limited benefit often doesn't justify the complexity of the system. Operational costs and the potential for downtime usually go up, often disproportional to the benefit provided.

We believe it keeping it simple. We focus on three major functions/benefits: performance/productivity, reliability/durability, and economy/cost of operation. And we believe you feel these are important issues too. So if a feature improves any of these basic issues, it's worth the investment. If it adds more complexity than the benefit provides, the feature is not worth it and we don't put it in. We also continue to use a maximum amount of metal in key areas like hoods, fenders, and cabs. Many competitors are moving to plastic or composites.

Maneuverable, yet strong. Quick, but powerful. Simple, but best in class. Easy to operate and economical to maintain. That's the 92ZV-2. That's the Kawasaki difference.

For more information, visit your local Kawasaki dealer or go online to www.kawasakiloaders.com/92ZV.

BRIEF SPECS

Bucket Capacity: 6.0 cubic yards
Material Density: 2,800 cubic yards
Payload: 16,800 pounds
Gross Horsepower: 300
Flywheel Horsepower: 284 with fan
Peak Torque: 1121 ft-lbs @ 1400 rpm
Breakout Force: 50,900 pounds
Full Turn Tipping Load: 37,325 pounds
Operating Weight: 58,025 pounds
Dump Height: 10' 8"
Reach at Max Height: 4' 2.3"
Wheelbase: 11' 7.75"
Turning Circle: 47'

BALANCING ACT

COATED PIPE PRESENTS CHALLENGES

What do you get when two giants in the oil and gas pipe-coating business put their heads together to target the Gulf of Mexico deep-water market? One joint venture, two highly busy yards, a state-of-the-art coating plant, and a baker's dozen of Kawasaki wheel loaders — all located in Channelview and nearby Sheldon, suburbs of Houston, Texas.

It is a great strategic match. Socotherm Americas SA, a subsidiary of Italy-based Socotherm, is a leading company in the field of steel pipe anti-corrosion coating and thermal insulation — primarily for underwater use. LaBarge Coating, a spin-off from US-based LaBarge Pipe and Steel, is well-known for its anti-corrosion coatings for pipe being buried or exposed to hostile environments. The joint venture, aptly named Socotherm-LaBarge, opened the new coating plant with its accompanying yard in early 2008 and has been off and running ever since.

BALANCING ACT

Oil and gas pipeline jobs are usually huge, requiring hundreds of miles of steel pipe. Pipe comes in a variety of diameters — 12 inches to 42 inches are typical. Lengths are usually 40 feet. When the pipe is double jointed (two lengths externally and internally welded together) and then coated, the resulting pipe is 80 feet long, can weigh up to 40,000 pounds, and requires a real balancing act to handle.

To give you an idea of scale, one of the company's latest jobs had them offloading 34,000 40-foot pipes, double-jointing and coating them all, and then loading the resultant 17,000 80-foot joints onto 40 railcars bound for Louisiana and north Texas for the Mid-Continent Express pipeline project.

While offloading and loading of rail cars is usually handled by Pettibones and a crane or two, the company's fleet of Kawasaki wheel loaders does the rest. Ranging in size from the 80 all the way up to the 115, the 13 wheel loaders often run 20 to 24 hours a day.

Ken Sheffield is the yard supervisor at the Sheldon location, which receives the raw

The 80-foot double-jointed pipes can weigh up to 40,000 pounds a piece. About 8,000 of the pounds are centered in the forks. The rest hangs off each side.

steel pipe by rail, truck, and barge. His yard runs the various 90s the company owns.

"Our Hyster and Taylor lifts are used for general yard maintenance. But the Kawasakis are used in heavy production because they are so versatile. They've got some safety features I really like. And because you can roll the pipe way back on the Wicker forks, they are safer to run with, you can maintain maximum height, and we have a lot less dropped pipe. The clamps on the Wicker, plus the stability and lifting capacity of the Kawasakis, help keep everything under control."

PIPE MANIA

Houston, being a port city, can be tough to find good wheel loader operators because there are so many pipe yards around. An operator may claim to be able to handle pipe, but the reality may prove otherwise. Running a loader with a heavy 80-foot pipe 16 feet in the air through a busy yard is not the same as handling a loader with a bucket filled with dirt at a construction site. So at the combination coating plant and yard in Channelview, Socotherm-LaBarge tests their potential operators first, before turning them loose. That's because if a pipe is scraped, dropped, or damaged while being handled, it has to be repaired and recoated — easily costing the company thousands of dollars per pipe. And when the pipe comes from the customer's own inventory, it gets even more expensive.

Brian Belgeri is the purchasing manager of the Channelview facility. "We took over this property not too long ago and had to clear and prep the property quickly. One of the things we had to do was move the solid concrete slabs left over from the trucking company we purchased the land from. That's when the 115s arrived. Although they were purchased to handle the largest and heaviest of the coated pipes once the coating plant was opened, it turned out they were ideal for moving those solid concrete slabs. The 115s are very stable and our operators love the joy stick."

Steve Green, Hi-Way Equipment, and Brian Belgeri, Socotherm-LaBarge

RUNNING IN CIRCLES

"For awhile, things were so hectic I had to chase down the loaders just to get them through routine maintenance," says Mark Yager, Equipment Manager. "It's tough out here — very dusty. But we've had no problem with overheating. Houston is also known for its heat. So we've got heat, dust, and running 24/7 — a good formula for a breakdown. But we haven't had any."

There are several reasons why the company has so many wheel loaders, as opposed to more Pettibones or forklifts. One, because wheel loaders are articulated, they can get into the pipe stacks easily. Two, they don't tear up the yard and leave ruts like forklifts will. And three, a wheel loader is much faster than a Pettibone.

TERP — TEXAS EMISSIONS REDUCTION PROGRAM

Texas companies like Hi-Way Equipment must charge their customers a TERP tax because the state imposes a surcharge on the sale, use, lease, or rental of off-road, heavy-duty diesel equipment, which is based on the sale, lease, or rental amount.

THE GOALS OF THE TERP ARE TO:

- ***Assure that the air in Texas is safe to breathe and meets minimum federal standards established under the Federal Clean Air Act (42 U.S.C. section 7407).***
- ***Develop multi-pollutant approaches to solving the state's environmental problems.***
- ***Adequately fund research and development that will make the state a leader in new technologies that can solve its environmental problems while creating new business and industry in the state.***

TERP covers a variety of programs. One is a grant program called ERIG — Emissions Reduction Incentive Grant. The grants offset the costs associated with reducing NOx emissions from high-emitting internal combustion engines — primarily older diesel on-road and off-road equipment. Companies located in designated TERP zones can apply for state grant money to help repower or replace their equipment fleet. The older the fleet, the more money a company is eligible to receive. Companies are held accountable, so if the number of hours a piece of equipment is slated to run is actually less than projected, part of the grant has to be returned.

Grants are only for replacing like equipment — for example, wheel loader with wheel loader, not fork lift with wheel loader. Machines that have been replaced must be rendered unusable, typically by knocking a hole in the engine block. The rest of it can be used for parts.

Grant applications are taken in rounds. For more information, go to www.tceq.state.tx.us/implementation/air/terp/index.html

"So we've got heat, dust, and running 24/7 — a good formula for a breakdown. But we haven't had any."

— Mark Yager, Equipment Manager, Socotherm-LaBarge

The state-of-the-art coating plant turns raw pipe into pipe suitable for the harshest environments.

Most of the time operators are assigned a specific loader, which engenders pride and a sense of accountability.

Extreme care has to taken with handling the coated pipe. Damage can occur simply by the way the forks grab them.

Early on, in their pre-wheel loader days, they realized they needed to pick up the pace of yard action. The company was contemplating buying more Pettibones. But on the advice of their local Pettibone/Kawasaki dealer, Hi-Way Equipment, they were encouraged to try a wheel loader instead. So they demo'ed a Kawasaki 90ZV at the Sheldon Yard. Much to their amazement, they discovered the wheel loader could do 54 trucks a day. Their Pettibone could only manage 27. Given the wheel loader was less expensive but was twice as productive, the company was sold. They bought the demo unit on the spot, plus one more. The two 115s were next, followed by a slew of loaders sized in between. The loaders use a variety of fork configurations, including Wicker. The four Pettibones, the newest pushing 17 years' old, have been relegated to loading gondola railcars.

STEALING THE SHOW

"We've had some other vendors come by to try to get our 115 business," relates Belgeri. "We asked one of them to do a side by side test, and after they looked at the specs, they declined. They said they couldn't even come close. That was the first time I've ever had a salesman say that to me. The 115 blew it out of the water. ***We also reviewed Deere and Cat. None could compete with the lifting capacity.*** We've been very happy with Kawasaki. We have no complaints at all."

Socotherm-LaBarge is serviced by Hi-Way Equipment, Houston, Texas.

FOCUS ON TIER III ENGINE MAINTENANCE

FUEL SYSTEM CLEANLINESS IS CRITICAL

Before we get too far into this topic, this is probably the point at which you hand the magazine over to your Equipment Manager, Service Manager, or Service Technician, or at the least, share this vital technical information with them.

While Tier III Engines have proven to be quite reliable and relatively low maintenance, there are a few key maintenance practices that will extend the life of your engine and allow it to run at maximum efficiency. Fuel System cleanliness is critical.

Today's low-emission engines require more attention to cleanliness than the engines of years past. Diesel fuel-injection systems can only work as designed when the fuel pressure is at a high level. Many of the systems work at a pressure of over 25,000 psi. If the pressures are not this high, the systems simply cannot keep the burn pattern in a controlled state to maintain low emissions levels and not contaminate the environment. To achieve these pressures, the fuel systems tolerances between components have been tightened. So contaminants must be controlled to keep these parts working. Further, not maintaining the fuel systems may result in damage to the engine not covered by warranty, or may void the engine warranty entirely.

Regular maintenance procedures evolve to prevent contamination. In the past, many users would pre-fill the fuel filters to avoid hard starting after a fuel-filter change. Unfortunately, the fuel used to pre-fill the filter is too contaminated and was not being filtered before reaching critical fuel system parts. Today the filter must be kept clean and installed without pre-filling. Refer to your equipment manual for proper procedures, or use an electric fuel pump to fill the filter with filtered fuel.

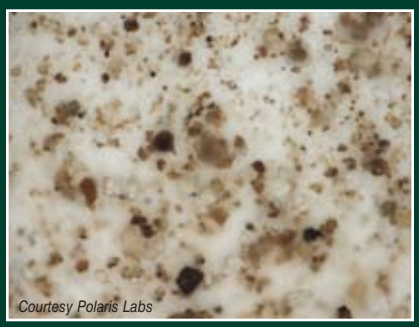
While fuel system maintenance in the past may have been conducted by your favorite or on-site mechanic, today's engines require a trained and qualified service technician. What should you expect when trained technician provides fuel-system maintenance?

First, provide a sterile work environment, free of airborne contaminants. The internal drillings of a modern injector are often extremely small and very susceptible to plugging from contamination. Plugging of an injector on Tier III / IV diesel engines' fuel systems can cause a continuous fueling event (or dribbling) that may result in engine damage, and emission troubles.

The silver, sliver-like particle measures about 200 microns and is evidence of sliding wear — particles have been magnified 100x.

The black particles measure about 15-20 microns — the lighter-colored, fibrous-looking particles are about 30-40 microns (magnified 500x)

The black particles measure about 30-40 microns (magnified 100x).



The black particles measure about 15 microns — the lighter-colored ones are about 5-10 microns (magnified 500x).

Micropatch photographs — digital images of the residue left behind after filtering a fuel sample through a 0.8 micron absolute filter. As a point of reference, a cross section of a human hair measures about 40 microns in size.

Sample Fuel Contaminant Images courtesy Polaris Labs

Tier III fuel injection systems operate at very high pressures. High pressure fuel can convert simple particles of dirt and rust into a highly abrasive contaminant that can damage the high pressure pumping components and fuel injectors. Many modern injectors are nonserviceable, with the exception of a few parts, and some injectors are completely nonserviceable.

Secondly, use electrical contact cleaner or a spray parts cleaner rather than compressed air, to wash dirt and debris away from fuel system fittings. Diesel fuel on exposed fuel system parts attracts airborne containments. Usually the fitting, even with the most minimal amount of collected fuel at the fitting area, will have a dirt and dust residue at the fitting where the work is being done.

The word micron is the abbreviation for a micrometer, or one millionth of a meter. The micron rating is the size of the smallest particles that will be captured by the filter media. To put it in perspective, a human hair is 0.003 mm [3/1000 in] in diameter. One micron measures 0.00004 mm [4/100,000 in].

There are many engines that require secondary fuel filtration at the 3-micron level. The contaminants needing to be removed are far smaller than can be seen with the human eye, a magnifying glass, or even a low-powered microscope.

The tools used for fuel system troubleshooting and repair are often overlooked as a potential source of contamination. Like fuel-system parts, if service tools are coated with oil or fuel they are much like a magnet for airborne contaminants. Be sure fuel-system tools are clean before use, especially if they are shared tools.

Keeping a fuel system clean is easier than cleaning up and repairing a contaminated system. Once a fuel system is contaminated, it is nearly impossible to know if you have successfully removed contaminants. To assist in avoiding entry of contaminants, cap and plug fuel lines, fittings, and ports whenever the fuel system is opened, even if the repair is only going to take a short time to complete. Airborne contaminants can come from the next bay, from bumping the engine housing, or from dirty clothing.

Carefully adhering to these steps will extend the life of the diesel engine in your Kawasaki loader, resulting in a cleaner, clearer, environment for many generations to come.

FOCUS ON DOZCO IN INDIA

India, well known for its richness in cultural diversity is also rich in its diverse mineral reserves. In fact, this ancient land is a major producer of iron ore, copper, gold, lead, bauxite, zinc, uranium as well as coal. Of the 89 minerals produced in India, 4 are fuel minerals, 11 metallic, 52 non-metallic, and the balance classified as minor minerals.

India's government is capitalizing on this astounding mineral diversity by working it into their long-term national goal. They are increasing production capacity of basic materials like steel and other metals and minerals. In addition, they are augmenting infrastructure projects by constructing additional facilities and encouraging development in telecommunications, power stations, ports, highways, and roads. The goal is not only to sustain, but effectively grow, with this industrial development. As a result, construction projects are multiplying and India's growth initiatives are highly regarded.

In addition to its mineral wealth, India also has a long coastline. Approximately 90% of sea-borne trade is carried via a number of major ports. With trade on the rise, India's port and bulk handling needs are booming.

Taking into consideration the growth in mining, construction, and bulk handling, many with time-sensitive datelines, India's need for efficient construction equipment is great. Responding to the need, in March 2008, Kawasaki teamed with DOZCO (INDIA) PVT. LTD., a well-established importer and distributor for HEMM (Heavy Earth Moving Machinery) and its Spares, as the national distributor bringing Kawasaki's line of versatile wheel loaders to India.

DOZCO (INDIA) PVT. LTD. is a venture started in 1983 by the determined and visionary Bangur brothers. From the beginning they have served the mining and infrastructure/construction sectors. The company has a large branch/warehouse network with 16 strategically located offices throughout the country. Additional locations are being planned. The large network ensures high customer accessibility and prompt service. The technical and knowledgeable team of over 400, combined with a loyal client base and a commendable market presence in the mining and infrastructure industry, makes DOZCO a vibrant group in the sector and the ideal national distributor for Kawasaki.

Since the ceremonial launching of Kawasaki wheel loaders at the end of June 2008, DOZCO has been quite successful in selling Kawasaki. Buyers represent a wide cross-section of industries. Interestingly, the 90ZIV–2 is the most popular size so far in the Indian market.

Bothra Shipping, a prominent player in bulk handling at Vishakhapatnam port and incidentally the first customer through DOZCO, now owns six 90ZIV–2 Kawasaki wheel loaders. AMR Construction, engaged in mining at one of the largest coal fields in the Singareni Collieries, started working with the 95ZV and is looking forward to building a fleet of Kawasaki wheel loaders. In another breakthrough in the coal-mining sector, DOZCO has ordered five Kawasaki 90ZIV–2s for Eastern Mineral Trading Industries (EMTA), a giant contract miner for various State Electricity Boards for use in thermal power generation.

Barbil in Eastern India (Orissa) is a mining hub for iron ore and other minerals. DOZCO Rental, a group company of DOZCO, made the Kawasaki presence felt by deploying two 90ZIV–2 models to Thriveni Earthmovers, for their mine works. Several mining companies in the area are in the pipeline to purchase Kawasaki wheel loaders.

Block handling, necessary for transporting heavy marble or granite blocks, is another wheel-loader application. In Udaipur and adjacent areas in Central India, Green Marbles India, a quarry owner and a major manufacturer/exporter, is using a 95ZV model.

Indian companies are looking for state-of-the-art technological and user-friendly features that can improve productivity, reduce maintenance costs, and lower operational costs through fuel efficiency. Companies are also looking for ease of operation and the ability to work longer periods under rough and severe conditions.

The unique characteristics of Kawasaki wheel loaders are drawing the attention of the valued customers all over India. No wonder DOZCO is successfully penetrating the country's loader market traditionally dominated by CAT, Volvo, Komatsu, and the like.

DOZCO and Kawasaki are confident Kawasaki will become the preferred wheel loader in India in the near future.

KAWASAKI KEEPS IT SIMPLE.

In a world of increasing demands, tighter deadlines, shrinking budgets and complicated contracts, the choice in wheel loaders is simple: Kawasaki.

A FULL-LINE OF RUGGED, RELIABLE, EFFICIENT MACHINES.

- 13 models
- 96 HP – 720 HP
- 1.8 cu. yd. – 13 cu. yd.

EASY TO OPERATE.

Increased efficiency and productivity come from innovative high-tech features that allow the operator to customize and adapt to the environment and the application…from the comfort of the redesigned cab.

- Adjustable Declutch
- ELS — Efficient Loading System
- Idle Management System
- Variable Boom Kickout
- Power Mode Switch
- Ride Control

EASY TO MAINTAIN.

Even basic servicing is easier than ever, with extended greasing and oil change intervals. Not to mention:

- MODM (Machine Operation Diagnostic Module) provides essential operations and diagnostic information in an easy-to-read LED display.
- K-LINK II monitors and transmits digitally the location, hours, system alarm sensors, engine and machine performance data.
- KLEW provides fast and easy access to a total oil analysis and early warning program.

EASY TO DO BUSINESS WITH.

No run-arounds. No layers and layers of management. No distractions from competing product lines. Wheel loaders are our only business. Got a question? We'll get you an answer. Need a part? It's on its way. Quickly.

- Creative Solutions, Fast Response.
- Focused Resources, Experienced Specialists.
- Flexible Warranty Programs
- Rebuild Center

Kawasaki Construction Machinery Corp. of America
2140 Barrett Park Drive • Suite 101
Kennesaw, Georgia 30144
Tel: (770) 499-7000
Fax: (770) 421-6842
www.kawasakiloaders.com

KCMA Corporation
One Focus. Complete Solutions.