

Bauma 2007—the 28th such event—featured a wide range of construction and mining vehicles and related equipment. Highlights, presented here, range from personal-sized compact utility equipment to machines incorporating world-leading size and power—and a host of new and developing technologies in between.

Darlene Fritz



original equipment

JCB adds HiViz to Loadall lineup

Two new low-boom Loadalls have joined the **JCB** lineup, offering significantly improved visibility and productivity.

The two new HiViz Loadalls—models 535-125 and 535-140—offer 10% more all-round visibility compared to the models they replace. A 235-mm (9.3-in) reduction in the boom pin pivot points led to the most notable visibility improvements, which are to the rear of the vehicle.

Innovative materials and component applications in the new machines have made it possible to reduce overall boom section by 13%, and a more compact rear chassis has yielded a 90-mm (3.5-in) reduction in overhang. New axles with higher lock angles have helped to improve the turning radius by about 300 mm (11.8 in).

Both models are powered by an 85-hp (63-kW) side-mounted JCB Dieselmox engine, with a 100-hp (75-kW) engine option available. Later in 2007, a Tier 3 compliant 130-hp (97-kW) engine will also be available. Both models also get JCB's powershift transmission, which features low-effort "Plus" pattern hydraulic controls for easy machine operation.

The new models feature a roomy cab with plenty of glass and angled roof bars for good upward visibility. A new dashboard and control layout provides operators with easy-to-read instrumentation. All the previous analog dials are grouped into a single display unit, and an LCD display shows the time and trip distance to the next service. Warning lights are conveniently located so the operator only has to look in one place for machine operation information.

Impressive lift and height capabilities are available from the new telehandlers: 3.5-t (3.9-ton) lift and 12.5-m (41-ft) height for the 535-125 HiViz model, and 3.5-t (3.9-ton) lift and 14-m (46-ft) height for the 535-140 HiViz model. Like the other telescopic handlers in the Loadall lineup, the new models also feature a Q-fit carriage for rapid attachment interchange. All Loadalls can be equipped with a wide variety of attachments, from skips and crane hooks to buckets and sweeper collectors.

The two new models—like the larger 540-140 and 540-170 models—can also be supplied direct from the factory complete with all the necessary electronic controls to work with an aerial work platform. Where fitted, the machine can be operated by re-



JCB's new low-boom Loadalls, including the 535-125 shown here, feature improved visibility and a tighter turning radius as well as JCB's Dieselmox engine and powershift transmission.

mote control from the access platform, which offers working heights of 12 to 18 m (39 to 59 ft) with a 300-kg (661-lb) payload.

Last year the company passed an industry milestone as the first brand to sell 100,000 telescopic handlers. They recently added a second production line for telescopic handlers at its plant in Rocoester, UK, and expanded production to its U.S. factory in Savannah, GA.

Terex handlers enhance productivity

Terex Fuchs introduced four new material handling machines—MHL 331, MHL 335, MHL 340, and MHL 454—during Bauma 2007. All four models have been upgraded to satisfy operator needs for higher material handling productivity at lower operating costs.

Completely revised, the MHL 331 mid-range handler is powered by a 114-kW (153-hp) **Deutz** engine that complies with current emissions regulations. With a maximum weight of 23,500 kg (51,800 lb), the MHL 331 features a single-circuit hydraulic system to facilitate fast work cycles.



Upgrades to the Terex Fuchs MHL 340D include a larger undercarriage, larger stabilizer cylinders, an extended wheelbase, all-new dual-circuit hydraulic system, and new kinematics.



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New boom kinematics provide reaches of 11 and 12 m (36 and 39 ft), with dirt-resistant lift cylinders that are installed in an inverted position. The new lift and stick cylinders incorporate optimized end-of-stroke cushioning to reduce strain on the steel structure, and the newly designed undercarriage features enlarged hydraulic cylinders for enhanced stability. Accessibility has been improved with an optimized side-by-side arrangement of the oil and engine coolers.

The MHL 335, an entirely new addition, has an operating weight that ranges from 23,500 to 25,000 kg (51,800 to 55,000 lb), and a reach of 10.7, 11, or 12 m (35, 36, or 39 ft) for scrap handling or recycling applications. Although some product features of the MHL 331 are also found on the MHL 335, such as the highly efficient separated cooling system, convenient servicing platform, and single-circuit hydraulic system, the undercarriage is 2.75 m (9 ft) wide for increased stability.

Stability, steadiness, lifting capacities, and operational speed enhancements were integral to the completely revised MHL 340. Upgrades include a larger undercarriage, larger stabilizer cylinders, and an extended wheelbase. An all-new hydraulic system features two separate control circuits and dual pumps—one dedicated to joystick functions and one servicing all other functions—to allow simultaneous operation or dipperstick and grab, or dipperstick and boom.

A new boom and stick design provide improved lifting capacities and handling performance, with available reaches of 12.6 or 13.7 m (41.4 or 45 ft). Steadiness under load is enhanced by a higher operating weight of 27,500 to 29,000 kg (61,000 to 64,000 lb) and the larger undercarriage with larger outrigger cylinders and wider stabilizer support beams.

Powered by a new Tier 3-compliant diesel engine that provides 128 kW (172 hp), the MHL 340 operates at noticeably reduced noise levels. Access to the central servicing platform is provided by a folding ladder, as in the MHL 331 and 335. Maintenance hoods are designed to open wide for easy access, and critical maintenance points are within comfortable reach.

Engineered to excel at functions typical of timber handling and transport, the new MHL 454 features a boom attachment behind the pivoting center of the machine. Two loading systems are available, providing a reach of either 9.8 or 10.7 m (32 or 35 ft). The machine is powered by a Tier 3 Deutz engine that is capable of providing 176 kW (236 hp) at 1900 rpm. The undercarriage offers a combination of static and dynamic stability plus good maneuverability, and all-wheel steering enables quick and precise maneuvering in tight spots. A powerful travel motor makes it possible to attain speeds of up to 25 km/h (16 mph).

With a simple hand pump, the MHL 454's cab can be tilted forward 90° for simple and quick transport. This option allows the high-position cab, which offers a standard eye level of 3.8 m (12.5 ft), to be hauled between locations without exceeding the transport height, thus omitting complicated assembly work for machine transfer.

All four new machines feature a spacious cabin with a conveniently located new instrument console and high-resolution display. Essential operating data can be centrally monitored, and clear warning indicators ensure increased safety. Control units are designed to be accessed directly from the air-cushioned comfort seat. Joystick controls are positioned ergonomically in front of the armrest to facilitate fatigue-free operation.

Hitachi welcomes Zaxis-3 wheeled excavators

A new generation of Zaxis-3 wheeled excavators has joined the **Hitachi** family with the unveiling of the ZX140W-3, ZX170W-3, ZX190W-3, and ZX210W-3 during Bauma 2007.

Complementing Hitachi's existing lineup of Zaxis-3 crawler excavators, the new models introduce a number of features to enhance performance and safety while lowering operating costs.

EU Stage IIIA compliant engines provide the new models with better digging capabilities and faster travel speed. The DOHC four-valve diesel engines—ZX140W-3, ZX170W-3, ZX190W-3, and ZX210W-3—supply 90.2, 107, 122, and 122 kW (121, 143, 164, and 164 hp), respectively. The new engines employ electronically controlled common-rail fuel injection to boost power generation and exhaust gas recirculation to lower fuel consumption and NOx production.

Newly upgraded hydraulics, based on the HIOS III system, feature two variable displacement axial piston pumps and two hydraulic motors: one each for travel and swing. A hydraulic boosting system provides greater control over arm and boom, and increased arm roll-in speed.

Strength has been engineered into the new Zaxis-3 machines, with a reinforced frame section that features an improved structure, enhanced cross section for greater machine durability, and an integrated transmission with rear axle for better performance. A wider oscillation angle of up to 16% helps to increase the level of stability and grip on the surface.

During operation, stability can be further boosted by lock-



Hitachi's four new Zaxis-3 wheeled excavators feature upgraded hydraulics for better digging capabilities and increased productivity.

ing the front axle cylinder to fix the front axle. A brake holding system holds the lock and release of brake along with the movement of the brake pedal; pressing the pedal down once allows the operator to hold the brake until the next time the brake pedal is pressed. Digging reach can be extended with a newly redesigned optional two-piece boom that folds down to

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The Zaxis-3 wheeled excavators are powered by DOHC diesel engines that employ common-rail fuel injection and exhaust gas recirculation.



make the unit more compact and stable for transport.

With operator comfort in mind, Hitachi gave the new Zaxis-3 wheeled excavator models spacious and comfortable cabs that provide an enhanced view of the jobsite, as well as a wide-screen color LCD monitor to allow the operator to check on machine conditions, and a rearview camera to provide a view of what is behind the machine. The cab is air-conditioned, and silicone oil-filled shock absorbers help to minimize noise and vibration. The heated, fully adjustable seat features a contoured backrest and a retractable seat-belt.

The machines also include **Bridgestone** tires with an improved tread pattern, a theft deterrent device, and the requirement of a pin-code to start the machine.

Maintenance has been simplified by accessible inspection and servicing points that are within easy reach of ground level.

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Cat introduces new skid steer loaders

Four new **Caterpillar** C-Series skid steer loaders—246C, 256C, 262C, and 272C—were introduced during Bauma 2007. The new skid steers combine a high-performance powertrain with such features as electronic torque management, High Flow XPS hydraulics, and electrohydraulic joystick control of the hydrostatic drive system.

With a rated operating capacity of 3250 lb (1474 kg), the 272C with vertical lift is the largest-capacity skid steer loader Caterpillar has produced. The smaller 262C, which has an operating capacity of 2700 lb (1225 kg), also features vertical lift for enhanced truck loading capabilities. The 246C and 256C



Cat's four new skid steers are all powered by the 3.3-L turbocharged Cat 3044C DIT engine and a hydrostatic drive system.

are radial-lift machines with rated operating capacities of 2150 lb (975 kg) and 2350 lb (1066 kg), respectively.

C-Series machines deliver greater lift and tilt forces compared to equivalent B-Series models. Hydraulic cylinders are strategically placed to maximize lifting capability. The result is aggressive digging performance and solid lifting performance for enhanced productivity in all types of tasks.

All four models are powered by the 3.3-L turbocharged Cat 3044C DIT engine. At 90 net hp (67 kW), the 272C is the most powerful skid steer Caterpillar has ever offered. Both the 262C and 256C deliver 82 net hp (61 kW), and the 246C generates 73 net hp (54 kW).

High-flow, high-pressure hydraulics can now be made available with Caterpillar's optional High Flow XPS hydraulic system, which uses a load-sensing variable displacement pump to deliver a maximum of 33 gal/min (125 L/min) flow and a maximum of 4061 psi (28,000 kPa) pressure.

Power to the ground is maximized by an electronic torque management system, which helps to prevent the engine from stalling in tough digging and dozing applications. The system also allows for part-throttle operation, helping to provide smooth machine operation and reduce fuel consumption.

C-Series machines also feature increased drawbar pull compared to the B-Series. The hydrostatic drive system is engineered to provide the proper balance between power and speed for optimum machine performance when digging or dozing.

An optional performance package includes a speed-sensitive ride control system and a two-speed travel system. Ride control cushions the load being carried for a smoother ride on

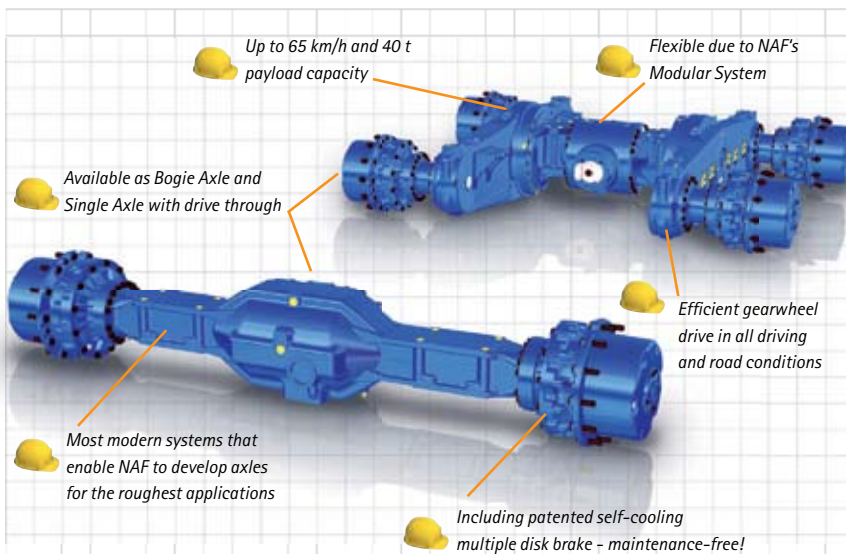


The C-Series skid steers use an electronic torque management system to maximize power to the ground; the system also enables part-throttle operation and helps to prevent the engine from stalling in tough digging and dozing applications.

uneven surfaces. The system allows higher speed operation and ensures better load retention for increased productivity and improved operator comfort. The two-speed travel system provides a top speed of 11.9 mph (19.2 km/h) in the three smaller loaders and a top speed of 10.0 mph (16.1 km/h) in the 272C. Faster travel is especially useful when moving around large job sites.

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which can provide more precise control in demanding and delicate tasks. AMICS also enables the operator to select from 10 work speed settings, which is useful for operations that require precise control at relatively slow and constant speeds.

Designed for easy entry and exit, the C-Series machines incorporate a large doorway and low threshold to provide a large opening. Tilt cylinders, now located under the lift arms, do not interfere with access. The cab is wide and spacious with plenty of leg room. The cab is an industry-first sealed and pressurized unit that provides a clean and quiet working environment. Ventilation air is filtered to keep dust out and clean air

in. Optional high-efficiency air conditioning and heating provide greater comfort when operating in extreme temperatures.

An optional air ride seat, which is similar to seats used in large Cat machines, is an industry first in skid steer loaders. Seat-mounted, independently adjustable joystick controls allow a wide range of positions to suit the operator. The C-Series hydrostatic drive control system is electrohydraulic, which provides a feedback system for enhanced machine control and performance. The system adjusts to deliver straight-line tracking through the entire speed range.

Komatsu expands dozer options

Bauma 2007 saw the introduction of **Komatsu's** new 13,000-kg (28,700-lb) D51EX/PX-22 bulldozer. The new machine features a powerful engine with high fuel efficiency, operator comfort, and low noise levels.

Featuring an innovative new super-slant nose design, the D51EX/PX-22 is the first bulldozer offering complete visibility of the full width of the blade's topside and the backside of the cutting edges from the cab. This unique feature allows the operator a clear view of the working area close to the blade, enabling faster, safer operation in applications that demand good visibility.

The D51EX/PX-22 is powered by a Komatsu ECOT3 high-pressure common-rail engine that is fully compliant with EU Stage IIIA emissions regulations. The dozer also includes a next-generation hydrostatic drive that delivers strong traction even



An innovative new super-slant nose design makes the D51EX/PX-22 the first bulldozer offering complete visibility of the blade's full topside and the backside of the cutting edges from the cab.

during sharp turns under full load. The ECOT3 engine and hydrostatic drive are complemented by an electronically controlled CLSS hydraulic system and Komatsu's proven Komtrax satellite tracking system, which is standard.

A newly designed undercarriage with special oscillation bar delivers a smooth drive and high grading performance. In addition, Komatsu-Topcon machine control systems are available as a factory-installed option for enhanced grading precision.

Providing comfort and protection, the D51EX/PX-22 features a spacious ROPS/FOPS cab that is located close to the center of gravity for minimal machine movement. Komatsu's exclusive cab damper suspension helps to isolate the operator from vibration for greater comfort and a noise level at the operator's ear of just 76 dB.

Komatsu also introduced two upgraded crawler dozers, D61EX-15 and D61PX-15 in standard (EX) and low ground pressure (PX) models designed to offer maximum weight distribution/flotation options.

Komatsu's SAA6D107E-1 engine with air-to-air after-cooler powers the new D61 dozers. The 8.3-L six-cylinder turbocharged and direct-fuel-injected diesel delivers 155 hp (116 kW) at 1800 rpm.

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Torqflow transmission—a water-cooled, three-element, single-stage/single-phase torque converter and hydraulically actuated multi-disc planetary gear—is controlled by a new adaptive powertrain electronic control system. Based on measured travel parameters, the controller automatically adjusts clutch engagement through the electronic control modulation valve to provide smooth no-shock clutch engagement.



Komatsu's new D61 dozers feature a hydrostatic steering system, electronic control modulation valve, adaptive transmission, and a palm command control system.

Steering control is provided by a hydrostatic steering system powered by an independent hydraulic

pump with engine power transmitted to both tracks. Independent hydraulic flow enables smooth power turns and counter rotation for a tight turning radius—5.9 ft (1.8 m) for D61EX-15 and 7.3 ft (2.2 m) for D61PX-15.

Hexagonally shaped space and large, tinted glass windows highlight the redesigned dozer cab. Additional features include internal air pressure and new cab damper mounts to suppress noise and vibration. An ergonomically designed palm command control system (PCCS) includes PCCS travel joystick with transmission gear shifting, and a blade-control joystick with a

proportional pressure control valve for fine control of machine operations. A fuel control dial allows the operator to control engine revolutions.

Wet, multiple-disc braking system eliminates adjustments, and track life is improved through increased bushing diameter, larger link height, and a lubricated track for minimized wear.

The D61EX-15 comes standard with a 4.5-yd³ (3.4-m³) power angle tilt blade, while the D61PX-15 comes standard with a 5.0-yd³ (3.8-m³) power angle tilt blade.

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Unimog adds new compact model

As part of the wide range of **DaimlerChrysler** commercial and off-road vehicles on display during Bauma 2007, the company featured its Unimog series, including the professional implement carriers (U300, U400, and U500); the extreme off-roader Unimog with off-road chassis (U3000, U4000, and U5000); and the newest addition, the compact Unimog (U20).

Previously built at the former Unimog factory in Gaggenau, all three Unimog series are now produced at the **Mercedes-Benz** truck plant in Wörth, Germany.

Professional implement carrier Unimogs—U300, U400, and U500—have a gross vehicle weight of between 7500 and 16,000 kg (16,500 and 35,300 lb), with a choice of two



Based on the classic Unimog chassis and powertrain, the U20 features BlueTec diesel technology and a shortened wheelbase of 2700 mm (106 in).

wheelbase lengths and two engine outputs. Technical highlights in this family include permanent all-wheel drive; portal axles with high ground clearance and coil springs; single tires; front, rear, and center differential locks; transmissions with up to 24 speeds; and electropneumatic "Electronic Quick Reverse." The newest features include BlueTec diesel technology, and new OM 904 LA and OM 906 LA four- and six-cylinder inline engines that comply with the Euro 4 emissions standard. These engines span the output range from 115 kW (154 hp) in the U300 to 210 kW (282 hp) in the most-powerful U500 model.

Off-roader Unimogs—U3000, U4000, and U5000—are designed specifically for applications on rough terrain or in the services of international security. All models are available in 3250- and 3850-mm (128- and 152-in) wheelbase variants. Engines feature BlueTec diesel technology and comply fully



Designed for rough terrain, off-road Unimogs are available in 3250- and 3850-mm (128- and 152-in) wheelbase variants.

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with the EU's Euro 4 directive. For markets outside the EU, engines are available in the Euro 3 version. The Euro 4 four-cylinder turbodiesel versions of the OM 904 LA and 924 LA engines have an output spectrum that ranges from 115 kW (154 hp) with 610 N·m (450 lb·ft) up to 160 kW (215 hp) with 810 N·m (597 lb·ft).

With a gross vehicle mass of 7500 or 8500 kg (16,500 or 18,700 lb), the new, compact Unimog U20 is a blend of proven Unimog technology, low vehicle weight, and good maneuverability. Although it is based on a classic Unimog chassis and powertrain, the U20's wheelbase has been shortened to 2700 mm (106 in). Power is provided by the Mercedes-Benz OM 904 LA four-cylinder 4.25-L turbodiesel engine with an output of 110 kW (148 hp). The BlueTec powerplant meets the requirements of the EU's Euro 4 emissions standard and is matched with a UG 100/8 eight-speed manual transmission that can also be ordered with an additional eight working gears. Unlike the U300, the new Unimog U20 features an all-steel cab and a cab-over-engine design. Wide-opening doors provide easy access to the cab, which has space for up to three people.

Volvo's L350F wheel loader is big on power

A new flagship wheel loader has joined the **Volvo Construction Equipment** line-up, bringing an 18% increase in productivity and 46% better fuel economy compared to its predecessor. The new L350F—the largest wheel loader the company has ever produced—combines a new Volvo engine with stronger hydraulics, new Volvo transmission with lock-up, and new axles.

The L350F is powered by Volvo's Tier 3/Stage IIIA-certified D16E turbocharged diesel engine, which delivers 397 kW (532 hp) and 2550 N·m (1880 lb-ft) at relatively low engine speeds of 1700 to 1800 rpm for better fuel economy, lower noise, and reduced emissions. The engine is cooled with a hydrostatically driven variable-speed cooling fan.

To assist with emissions control, the engine uses the V-ACT (Volvo advanced combustion technology) system, which features an advanced fuel-injection system, air-management system, enhanced engine management, and I-EGR recirculation technology that feeds a controlled amount of exhaust gas back into the cylinder during the inlet stroke via a patented double-rock-er device on the exhaust rocker arm.

Load-sensing hydraulics feature Volvo hoses and



Volvo's new flagship wheel loader features the company's advanced combustion technology as well as load-sensing hydraulics and steering, an updated transmission, and an upgraded operator cab.

two variable-displacement piston pumps. When flow is not required in the hydraulic system, all engine power is diverted to the drivetrain for smoother operation, lower fuel consumption, and more precise control of the machine and its load.

The load-sensing steering system features end-stroke damping to eliminate frame shocks from quick turns and help reduce operator fatigue. The L350F can also be fitted with the optional Comfort Drive Control (CDC) system, which allows the loader to be operated using fingertip controls fitted to the seat armrest.

Automatic lock up in third and fourth gears locks the pump and turbine rotors together on the torque converter through a direct drive clutch. It is applied automatically when the control unit registers a pre-set output speed. The updated HTE400 transmission also features an automatic power shifting system that allows a selection of gear shifting programs to suit the application as well as the operator's work style.

Stability has been engineered into the L350F's sturdy frame, which features new heavy-duty axles—fixed in front and oscillating at rear—with fully floating shafts, planetary-type heavy-duty hub reduction, and greased-for-life bearings in the rear axle trunnion. Stopping power is provided by outboard-mounted wet-disc brakes with oil cooling. Powered by a hydraulic dual-circuit brake system, the parking brake automatically applies when the engine is switched off or brake pressure is too low.

Volvo redesigned the L350F operator cab, creating the pressurized Volvo Care Cab with rollover protection (ROP) and climate control. All air is double filtered, and viscous cab mounts and an air-suspended seat help to protect the interior from noise, dust, and vibrations. Visibility has been enhanced and halogen lighting added in both front and rear. The operator's seat, armrest, and steering column are all adjustable, and large storage compartments are available for stowage of personal possessions.

The L350F can be specified with boom options, including a long boom that gives additional dump height. The available boom suspension system features heavy-duty shock absorbers that reduce bucket spillage and allow faster, more comfortable work cycles, resulting in a productivity increase of up to 20%.



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Bomag expands roller lines, adds GPS

At Bauma 2007, **Bomag** showcased BW 236 DI-4 BVC, an impressive new 36,000-kg (79,000-lb) single-drum roller—the heaviest and most powerful single-drum roller ever built, according to the company.

Working at a frequency of 27 Hz, the exciter system produces a maximum amplitude of 4.44 mm (0.175 in). Compared with Bomag's next-largest single-drum roller, the BW 226 DI-4 BVC, which has a service weight of 26,000 kg (57,000 lb), the maximum compaction amplitude has been increased by about 50%. The new machine's 1000-kN (225,000-lb) centrifugal forces are twice as high as those of the BW 226 DI-4 BVC.



According to Bomag, its new 36,000-kg (79,000-lb) single-drum roller—the heaviest and most powerful single-drum roller ever—can result in construction cost savings of 20 to 40% for large-scale construction projects.

To build a single-drum roller of this size, Bomag completely redesigned the frame structure, drive technology, and particularly the exciter system. The BW 236 DI-4 BVC has a drum axle load of 27,000 kg (60,000 lb) and wheel axle load of 9000 kg (20,000 lb). With a working width of 2400 mm (94.5 in), the result is a static linear load of 112 kg/cm (632 lb/in).

These machines are used in earthwork and dam construction to compact lifts of up to 3 m (9.8 ft) and to subsequently compact existing subsoil to a depth of up to 4.5 m (14.8 ft) in order to reclaim development areas. To accommodate inconsistent or challenging surface conditions, Bomag's proven VARIOCONTROL system progressively regulates the compaction amplitude. Based on soil conditions, VARIOCONTROL adjusts the amplitude to between 0 and maximum until the preset soil stiffness target value is reached. This continuous adjustment prevents over-compaction of the soil and excessive strain on the machine, despite the enormous forces generated in the material and machine.

Bomag's newest single-drum roller, which uses a polygonal drum, preserves the line's reputation for high compaction performance, good traction, and low running and maintenance costs. With 36,000 kg (79,000 lb) in controlled vibration, the compaction zone has an impact as far down as 4.5 m (14.8 ft). Like the other rollers in Bomag's single-drum line, the BW



Compact, user-friendly, and highly maneuverable, Bomag's new 7000-kg (15,000-lb) pivot-steered tandem roller was developed specifically for small- to medium-sized construction sites.

236 DI-4 BVC employs a continuously changing directed force applied by plate and wedge segments, which results in the greatest possible vibration depths.

According to Bomag, the new BW 236 DI-4 BVC can result in construction cost savings of 20 to 40% on large-scale construction projects due to the machine's considerably higher depth effect and compaction power. The BW 236 DI-4 BVC can help to reduce the total amount of material that must be shifted, which results in less need for other bulldozers and graders because the new single-drum roller can compact thicker lifts.

Bomag also introduced a new 7000-kg (15,000-lb) pivot-steered tandem roller during Bauma, further expanding the lower end of its tandem vibratory roller product line. Bomag developed the compact, user-friendly, and highly maneuverable new tandem roller specifically for small- to medium-sized construction sites, urban road construction, and the construction of agricultural roads.

The new tandem roller, which can be operated in reverse as well as forward, incorporates specially developed drum drives, robust reduction gears, and integral hydraulic motors. The operator platform features a new cockpit and newly styled cabin that is both compact and logically arranged. A small steering wheel is integrated into the armrest for sensitive and precise steering, and all elements are within sight and easy reach of the operator.

For automatic compaction control, the roller can be equipped with ASPHALT MANAGER on the front drum. This system can be linked to GPS, another new technology the company introduced during Bauma 2007. Combined with measurement technology, GPS will make it possible to control and document compaction over an entire construction area, with an accuracy of a few centimeters.

Vermeer re-powers S600TX compact utility loader

Equipped with a new **Kubota** D1105 liquid-cooled diesel engine, **Vermeer's** S600TX compact utility loader was ready for action at Bauma 2007. The new engine delivers an additional 11 lb-ft (15 N·m) vs. the previous engine, and with 26.3 hp (19.6 kW) at 3000 rpm, 7% more power than the previous engine. An air-cooled **Kohler** Command Pro gasoline engine that generates 25 hp (18.6 kW) is also available.

An automatic high-temperature shutdown feature helps prevent potential damage to the engine in the event of overheating. The engine also features a larger displacement, which helps to improve overall start-up power in colder temperatures. A coolant recovery bottle, centrally located in the engine compartment, allows the operator to visually see if the radiator is low on coolant.

Rated operating capacity for the S600TX is 500 lb (227 kg). With a standard bucket, the ride-on track unit is 93 in (2362 mm) long, 42 in (1067 mm) wide, and has a ground clearance of 4.5 in (114 mm). Available track options are 7 and 9 in (178 and 229 mm) wide, which result in ground pressures of 5.5 and 4 psi (0.38 and 0.28 bar), respectively. The spring-cushioned operator platform is 14.5 in (368 mm) high to provide ample ground clearance to back up over curbs when necessary and good operator visibility.



The Vermeer S600TX compact ride-on utility loader features a new Kubota engine that delivers 7% more horsepower and 11 lb-ft (15 N·m) more torque than the previous engine.

Ergonomically designed joystick controls allow the operator to maintain balance while operating the S600TX, even on uneven terrain.

Liebherr introduces world's tallest telescoping crane

With its gigantic 100-m (328-ft) telescopic boom, **Liebherr's** new LTM 11200-9.1 all-terrain crane attracted the attention of many Bauma visitors.

Capable of lifting up to 1,200,000 kg (2,646,000 lb), the crane carrier is powered by an eight-cylinder Liebherr water-cooled diesel that is Tier 3/Stage III compliant and can output 500 kW (671 hp) at 1900 rpm. A **ZF** automatic transmission with torque converter and interarder fitted directly to the gear unit provides 12F/2R gears. The crane rides on a Liebherr-manufactured, torsionally rigid steel frame.

All nine heavy-duty crane-truck axles have hydropneumatic suspension and automatic leveling system, and loads are equalized between axle pairs. Axles 1, 2, 4, and 5 are planetary, axles 2 and 4 have longitudinal differential lock, and axles 4 and 5 have transverse differential lock. The active, speed-dependent rear-axle steering, developed by Liebherr, is integrated into the nine-axle chassis.

The crane itself is powered by a six-cylinder Liebherr water-cooled diesel engine that can produce 270 kW (362 hp) at 1800 rpm. Crane drive is diesel-hydraulic, and electronic control is provided by a LICCON system.

At 16 m (52 ft) longer than the previous record-holder, which was also a Liebherr crane, the new crane's 100-m (328-ft) eight-part boom consists of a base section and seven telescopic parts. The crane uses the rapid-action **TELEMATIK** telescoping system to automatically position and lock the boom to its extended lengths. A four-part "short" telescopic boom can be used instead when the four inner telescopic parts are extended.

Numerous lattice extensions are also available, including a luffing fly jib that can be extended to 126 m (413 ft) and



Liebherr's new nine-axle LTM 11200-9.1 all-terrain crane has a 1,200,000-kg (2,646,000-lb) load capacity and a 100-m (328-ft) boom, making it the world's strongest telescopic crane with the world's longest reach.

reaches lifting heights of up to 170 m (558 ft). A Y-shaped guying system on the telescopic boom, which can be used on either the four- or eight-part boom, offers significant increases in load capacity.