

## Bobcat reaches high with telescopic tool carrier

Construction contractors and rental customers can pick up and place materials as high as three stories with the V638 VersaHandler telescopic tool carrier (TTC) from **Bobcat**, a business of **Ingersoll Rand**. The 6700-lb (3040-kg) maximum load capacity V638 features a three-stage boom with a maximum lift height of nearly 39 ft (12 m).

"Unlike most machines on the market with a similar lift height, you can equip the V638 with an optional field-installed stabilizer kit," said Eric Brown, Bobcat Product Specialist. "In addition to providing increased lift capacity, it also improves side-to-side stability when lifting on uneven ground."

The TTC is equipped with numerous standard features, including road and working lights, fenders, and mirrors. It's also available with either a canopy or enclosed cab with heat and air conditioning.

Operators can shift-on-the-fly from low to high speeds with the machine's hydrostatic transmission.

They can also control travel speed at any rpm with the inching pedal. Using the first half of the stroke on the brake pedal enables operators to maintain full engine rpm while hydrostatically controlling the engine speed.

"For example, you can operate the boom at maximum engine rpm for fast cycle times, while traveling at any speed within the transmission's speed range," said Brown. "It's a real benefit when picking and placing materials, and you only need to move the machine just a little to reposition it." Because of this, the inching pedal also reduces wear on disc brakes.

Another benefit of the V638's hydrostatic transmission is a dynamic braking system, which slows the machine to a stop as soon as the operator's foot leaves the accelerator pedal. This feature of the hydrostatic transmission proves especially helpful when traveling and working on slopes.

A unitized frame provides the V638 with the



*Bobcat says it mounted the engine of the V638 on the right-hand side to provide operators better visibility to the sides and rear of the machine.*



*The V638 has a maximum load capacity of 6700 lb (3040 kg) and a maximum lift height of almost 39 ft (12 m).*

strength to lift as much as heavier machines within its class size. In addition to the frame being rigid, light, and strong, Bobcat says it doesn't flex as much as a conventional rail frame.

Operation is simplified via a single, loader-style joystick that controls lift and tilt functions, while variable-control thumbwheels on the joystick activate boom extension and auxiliary hydraulic functions. Shuttle levers control forward and reverse travel and high and low speeds, as well as turn signals, horn, and high-beam road lights. Easy-to-read sweep gauges help operators monitor hydraulic oil temperature, engine temperature, and fuel level.

Other features on the V638 include a full belly pan for machine component protection and a side-mounted engine that Bobcat says provides faster and easier access to routine maintenance items than machines with rear-mounted engines.

*Jean L. Broge*

## Cat ac end-rider lift trucks

Cat Lift Trucks' WR6000 and WR8000 electric end-rider walkie lift trucks have capacities of 6000 and 8000 lb (2720 and 3630 kg) and were engineered for long-term reliability in demanding manufacturing, industrial, and commercial applications where long runs and floor-level order-picking are a substantial part of the working day.

The walkies use an innovative three-phase ac controller precisely matched, says the company, to drive motor power requirements, resulting in increased efficiency and optimizing energy resources for longer battery shift life. Advanced regenerative braking further enhances energy efficiency and smoothes out directional changes, while greatly reducing brake pad wear, when compared to conventional designs.



Cat Lift Trucks recently introduced two new models of ac-powered end-rider walkies that have capacities of 6000 and 8000 lb (2720 and 3630 kg) for general stocking and manufacturing applications.

With a rugged torque-resistant frame and custom-fitted fork lengths, the end-rider walkies come equipped with the fork length best suited for the application—from the 36-in (914-mm) forks, commonly used for beverage handling, to the 96-in (2438-mm) "long-john" forks, designed for handling double pallets. All the forks come equipped with XAR (eXtreme Abrasion Resistant) steels from **ThyssenKrupp** in the areas where material wears most frequently, thereby maintaining the shape and integrity of the fork design for consistent performance over time.

Cat claims that "every detail of the operator's work space" was designed to reduce fatigue and improve performance, including a cushioned operator platform to reduce jolting and a handle that features a twist-grip travel control for maximum grip and speed control. The truck can also be driven

with the control handle in the vertical position to allow the operator to smoothly maneuver it through spaces where normal lift trucks are unable to operate.

Both models feature a new design that separates the hydraulic and electrical systems, keeping hydraulic fluid away from the electronics. To simplify the maintenance process, all components are immediately accessible when the cover is removed and all switches, which are rated for at least one-million cycles, are sealed against dirt and moisture.

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## Kubota unveils three new front-mount mowers

The F2880E, F2880, and F3680 mowers from **Kubota** Tractor Corp. (KTC) "appeal to a broad range of customers because they offer greater horsepower, four-wheel-drive traction, and a vast array of implement options, making them functional year-round tractors," said Tamara Youdbulis, Turf Product Manager at KTC.

All three models feature liquid-cooled Kubota diesel engines. The two-wheel-drive F2880E and four-wheel-drive F2880 produce 28 hp (21 kW), while the four-wheel-drive F3680 engine produces 36 hp (27 kW). Both engines are designed to produce higher torque rise to ensure faster, smoother recovery under sudden loading. The engines also feature an improved combustion system to make them more environmen-

tally friendly and economical. Each model features a 16.1-gal fuel tank to increase the time between refueling.

Traveling speed is now 12.5 mph (20 km/h)—up from 10.6 mph (17 km/h) on previous models—due to what KTC describes as a "powerful hydrostatic transmission that provides quicker response for tough mowing jobs." The single-speed pedal enables the operator to easily change directions from forward to reverse, keeping the operator's hands free for steering and implement control.

The F2880 and F3680 include Kubota's Auto-Assist four-wheel-drive system, which automatically engages four-wheel drive when additional traction is needed. When traction is regained, the system automatically reverts to two-wheel drive to prevent turf damage. It functions in both forward and reverse modes. To increase hillside stability and reduce ground compaction, four-wheel-drive models also feature wider Ultra-Trak tires.

Lift capacity has been increased 40% over previous designs, giving the F-series the versatility to handle an array of optional Kubota implements, including a grass catcher, snow blower, rotary sweeper, debris blower, and front blade.

Mower options for the three mowers include high-capacity 60- and 72-in (1524- and 1829-mm) side discharge decks that can cut up to 5 in (127 mm) in 0.75-in (19-mm) increments. Besides the standard cut deck, the mowers can be used in a fine-cut mode (optional baffle kit) that produces smaller clippings, leaving a more manicured finish, and in a mulch-cut mode (optional kit) that produces an even finer cut and sends most of the mulch back onto the turf. Kubota also offers 60- and 72-in (1524- and 1829-mm) rear discharge decks, available with optional mulching kits. All mower decks feature a full 90° tilt-up feature, and the larger 72-in (1829-mm) decks include a lift-assist mechanism to simplify deck access for cleaning and maintenance.

Kubota engineered the F-series with a larger operator platform for more legroom. A high-back suspension seat has adjustments for weight control, lumbar support, back angle, and arm rests for a custom fit for the operator. The high/low speed lever, deck lifting lever, and PTO start/stop lever have been lengthened and placed at the side of the seat, while tilt wheel and power steering reduces operator fatigue. F-series mowers are also equipped with a halogen headlight.

A quick-release, full-open engine hood includes an integrated, easy-to-clean radiator screen. The air cleaner features a dual-element design in which only the outer filter needs to be replaced, while the inner filter can be cleaned with an air hose. The F3680 is also equipped with a choke indicator that turns red when the filter needs cleaning or replacement.

Accessories and options for the F-series include a deluxe hard cab with heater option, cruise control, working lights, turn assist brakes, an electric fuel gauge, and a toolbox beneath the operator's seat.

In other KTC news, the company recently approved the use of B5 biodiesel fuels in specified Kubota diesel-powered products.

Jean L. Broge



*Kubota's new 36-hp (27-kW) F3680 front-mount mower with Auto-Assist four-wheel drive has a liquid-cooled Kubota diesel engine and a hydrostatic transmission.*



*The 28-hp (21-kW) F2880 has 40% more lift capacity for front-mounted implements than previous models.*

## BAE Systems gets on FCS platform

The Non-Line-of-Sight (NLOS) Cannon by **BAE Systems** is one of eight and the lead Manned Ground Vehicle (MGV) of the **Boeing/SAIC**-led Future Combat Systems (FCS) Program. FCS, the **U.S. Army's** foremost modernization program, is an integrated family of air systems and both manned and unmanned ground systems connected by a robust network. The recently unveiled NLOS Cannon Firing Platform is the first step toward development of vehicle prototypes scheduled to begin testing in 2008. Test data will support obtaining a safety release, which will allow soldiers to begin testing the NLOS Cannon prototypes.



*The NLOS Cannon Firing Platform is shown undergoing integration at BAE Systems' facility in Minneapolis.*

Featuring a 38-caliber, fully automated 155-mm howitzer integrated onto a tracked chassis, the Firing Platform was developed at BAE Systems' Minneapolis System Integration Facility and will soon be shipped to Army test facilities, where it will begin qualification of its ultra-lightweight cannon and breech.

The howitzer is integrated with a fully automated ammunition handling system. The platform, which was designed in partnership with **General Dynamics Land Systems**, is made of a combination of high-strength steel and aluminum and incorporates a cannon assembly that is 1200 lb (544 kg) lighter than the M777 cannon

used on the NLOS Cannon Concept Technology Demonstrator previously developed and tested by BAE Systems.

The cannon assembly is integrated onto a lightweight surrogate chassis that provides performance similar to the full prototype vehicle chassis. The NLOS Cannon prototypes will incorporate lightweight band track, a two-person crew station, and a hybrid-electric propulsion system that maximizes power and fuel efficiency. The crew station will provide a real-time digital operating environment to ensure maximum situational aware-

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The Firing Platform features an ultra-lightweight, 38-caliber 155-mm howitzer integrated with a fully automated ammunition handling system.

ness, as well as protection in nuclear, biological, and chemical environments.

Much of the advanced technology being developed for the NLOS Cannon is being incorporated into the design and development of other vehicles in the MGV family, such as the NLOS Mortar. The NLOS Mortar is being designed by BAE Systems to have an estimated 80% commonality with the NLOS Cannon chassis and mission equipment to reduce maintenance and logistics. A NLOS Mortar Firing Platform is expected to be delivered for testing and qualification in spring 2007. All the MGVs will incorporate active and passive protection systems to enhance crew and platform survivability.

In late October, BAE Systems successfully fired the first round from the platform. The company was to continue single-round firing tests with the Firing Platform for several weeks followed by rate-of-fire testing to demonstrate the effectiveness of the NLOS Cannon's automation system, which will give soldiers the capability to fire a four-round Multiple Round Simultaneous Impact mission with the push of a button.

Jean L. Broge

## Toro adds to compact loader line

The new Dingo TX 525 wide track compact utility loader from **Toro** features a 25-hp (19-kW) **Kubota** diesel engine. Compared to other Dingo models, the TX 525 diesel unit offers extra torque, longer engine life, and increased hydraulic flow for enhanced performance of ground-engaging attachments. The model is compatible with Toro's 35-plus compact utility loader attachments, making it suitable for applications such as installing irrigation systems, preparing seedbeds, material hauling and handling, constructing decks and fences, tree planting, demolishing structures, and pond building.

One particular attachment that Toro recently introduced is the TX Platform, a ride-on attachment for tracked Dingo compact utility loaders such as the TX 420, TX 425 wide track, and TX 525 wide track. The TX Platform pivots up and down to float with uneven terrain, providing a stable and level platform for the operator. A rubber pad at its hinge point reduces the transmission of machine vibration to the user. The 94-lb



The TX Platform attachment offered for three of Toro's Dingo models is expected to decrease operator fatigue, especially during applications that require extensive hauling for long distances.



Toro claims that its new diesel-powered Dingo TX 525 wide track loader provides the highest power-to-weight ratio and the lightest footprint in the compact utility loader market.

(43-kg) platform is also accompanied by a handlebar, or what Toro refers to as a "loader control reference bar," that can be mounted to the dash for added operator safety.

The TX 525 wide track model's auxiliary hydraulics features four independent hydraulic pumps that deliver 16.9 gal/min (64 L/min) of flow to each track, 13.8 gal/min (52 L/min) to the auxiliary, and 6 gal/min (23 L/min) to the loader arm. Toro claims the TX 525 "delivers hydraulic performance beyond its category." In addition to the added power it delivers, the TX 525 represents a convenient choice for operators who currently use all diesel-powered equipment and prefer to expand their fleet with the same fueled machine.

With a mass of 2127 lb (965 kg) with a standard bucket, the TX 525 wide track has a rated operating capacity of 553 lb (250 kg), or 35% of tip capacity. Its overall length of 92 in (2336 mm) with bucket and width of 40.5 in (1029 mm) make it compact enough to work in tight spots and easily pass through a 42-in (1067-mm) gate. Also, the 9.5-in (241-mm) wide tracks on the unit distribute the weight to 3.5 psi (24 kPa) for improved flotation in soft ground conditions.

Jean L. Broge

## Antonio Carraro introduces multi-function tractor

The 82-hp (61-kW) HTX 9400 from **Antonio Carraro** features a hydrostatic transmission with an infinite range of speeds in both forward and reverse, and maximum operative practicality when executing rapid forward and backward movements. It also features a new electronic system that enables the opti-



The hydrostatic transmission on the new HTX 9400 tractor from Antonio Carraro offers an infinite range of speeds in both drive directions.



Various functions available to the operator with the new electronics include Eco-Power, Constant Speed Drive, and Check Control.

zation of the operator's activity with a control console that can be periodically set with work parameters such as forward speeds, engine revolutions, and PTO rpm. The new electronics essentially offer the possibility of modulating the tractor's power regardless of its load.

Available functions include an Eco-Power system that allows the tractor to be used with the minimum number of engine revolutions, therefore adjusting at will the speed ramps; the Constant Speed Drive sets the forward speed and keeps the PTO's rpm constant; and the Check Control renews the checkup

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A new electronic system in the HTX 9400 was introduced to increase operator productivity.

of all the tractor's functions every time the tractor is turned on and signals any anomaly. The HTX's hydraulic system offers 70 L/min (18 gal/min) with an oil tank capacity of 40 L.

Operator-selected initial settings remain constant until the end of the activity, so that the operator needs to do nothing other than drive the tractor and concentrate on the route to be taken. The possibility of selecting a constant speed is a fundamental function when carrying out operations related to material distribution such as manure, sandblasting, coring, and treatments in general.

Applications for the machine include civil maintenance,

snow clearance, street clearance, and turf maintenance of large parks and sports grounds. Attachments compatible with the HTX include a sand spreader, sowing machine, leaf blower, shovel, rear excavator, and forklift for material transfer.

An option for the HTX is the air-conditioned StarLight cab, which Carraro says is "completely soundproofed" as well as "spacious and comfortable with a 360° visibility guaranteed." The maximum speed of 40 km/h (25 mph) contributes to savings in both operational and transfer times. The HTX comes in three versions: City, Mountains, and Multi-Utility.

Jean L. Broge

## Massey Ferguson plows options on tractor

Massey Ferguson's (MF) 3600 Series is a totally new line of utility-size tractors that include three models, the 3625 at 55 PTO hp (41 kW), the 3635 at 65 PTO hp (48 kW), and the

3645 at 75 PTO hp (56 kW).

Optional enclosed cab models feature a flat deck design, high visibility glass with curved rear windows, doors on both sides of the cab, and front and rear work lights. MF claims the cabs were designed for operator comfort, with roomy interior, multiple HVAC vents, sun visor, left and right exterior mirrors, and radio antenna and speakers already wired-in. The operator seat is adjustable; an air-ride suspension seat is available as an upgrade. Cab models also feature a tilt and telescoping steering column, which is available as an option on open station or "footstep" models.

The 3600 Series tractors are powered by turbocharged three-cylinder **SisuDiesel** engines, built in Finland. The 3.3-L engines are designed for high-torque power application and long-running dependability. The 3645 tractor engine also comes with an air aftercooler that boosts power output from the engine.

Tractors come with either an 8F/8R synchro shuttle transmission that features single-lever forward and reverse operation, plus on-the-go shifting by just depressing the clutch, or an optional factory-installed 12F/12R power shuttle transmission with four synchronized gears and three speed ranges. The



The 3600 Series tractors from Massey Ferguson are powered by three-cylinder 3.3-L SisuDiesel engines.

12F/12R power shuttle includes eight working speeds and four transport speeds, with a declutch button on the gearshift that lets the operator shift gears without depressing the foot clutch. The operator can activate the differential lock quickly with an electrohydraulic push button on the control panel.

Buyers also can choose between two-wheel drive with adjustable front axle, or four-wheel drive that features an electrohydraulic button on the console to engage front-wheel drive on-the-go. All 3600 Series tractors come with independent 540 rpm PTO or an optional two-speed 540/540 Economy PTO, which saves fuel by lowering engine rpm for light-duty PTO applications.

The tractors come with MF's proven hydraulic system, including a 6.6-gal/min (25-L/min) steering pump and a 15.8-gal/min (60-L/min) auxiliary pump for remote power. Two remote valves are standard, with a third remote as an option. The three-remote valve option has one three-position valve and two four-position valves. A factory-installed loader joystick is another option, and comes with the required mid-mount valve and couplers. Custom-matched front loaders are available for each tractor, configured for MF's Quick-Attach System.



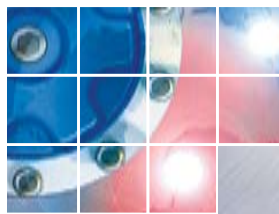
*The hydraulics on the 3600 tractors feature an open center system that is capable of supplying 15.8 gal/min (60 L/min) to the rear remotes.*

Category I and II three-point hitch comes as standard, with lift capacity more than 2.5 ton (2.3 t) at the ball ends. An optional three-point hitch comes with extendable lower links. The easy to operate three-point hitch system gives the operator precision control of draft, implement position, and rate-of-drop.

Servicing these new tractors is easy with the ground-level fuel tank and one-piece flip-up hood, for convenient access to the battery, radiator, air cleaner, and oil and fuel filters. Cab models have a roof hatch for easy access to the air-conditioning system and dual element cab air filters.

A folding ROPS (rollover protective structure) for open platform tractors makes working in low-clearance areas easier. ROPS then can be placed into the upright position for operator safety. Tire options include agricultural, turf, or industrial tires, and all models have a standard seven-pin outlet for trailer lights.

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