

## International protects its customers

For more than 100 years, the company that has become **International Truck and Engine** has been involved with the military. What began as a company that produced equipment for farmers and truckers in 1902 adapted to produce military vehicles in 1918 for World War I. In 1941, the company shifted all product focus to military vehicles for the Allies. During World War II, International produced the M-series of military trucks that served the **U.S. Marines** and **U.S. Navy** as weapons carriers, cargo transporters, and for light artillery movement.

About three years ago, International renewed its commitment to the U.S. military by establishing a subsidiary company, **International Military and Government**.

"We've now sold both military and commercial vehicles for use in Iraq," said Luis Torres, Military Configuration Manager at International Military and Government. "And we've just finished the first phase of a military contract for cargo-type vehicles for the Afghanistan National Army through **TACOM** [Tank-automotive and Armaments Command]. We also just received another order for an armored Class 8 tractor from our 5900 product line."

The cargo trucks for Afghanistan required some modifications. "The customer needed an integral machine-gun mount for the truck—not a typical commercial accessory," said Torres. "We very quickly designed a roll-bar structure for mounting a machine gun that would protrude through the roof of the cab. We have a cross-functional, fully integrated product-development process in Fort Worth, IN, at our engineering facility, and we also do all the testing there. The team quickly came up with some concepts, did some FEA, ran confirmation tests, and submitted the proposal." That vehicle is working in Afghanistan today. International delivered 374 units in 2005 out of a total 2781 vehicles in the TACOM contract.

Crew survivability is the number one concern for military forces in today's hostile situations. International, in collaboration with Israeli specialists **RAFAEL Armament Development Authority** and **Griffin**, an armored vehicle supplier, has developed a potential solution with the launch of the International APC (Armored Personnel Carrier).

The International APC uses what the company describes as the best armoring technology available to defeat projectiles, improvised explosive devices, and rocket-propelled grenades (RPGs). The truck is outfitted with a combination of both "reactive" and "passive" hybrid armor for a high level of protection.

ERA, or explosive reactive armor, is comprised of plates containing explosives that detonate when hit by a missile or rocket, and the resulting explosion disrupts the incoming weapon. For safety reasons, the armor does not react to other heat sources or small arms fire.



*The International APC is based on the 4x4 7300 model chassis, and features reactive armor from Rafael and passive armor from Griffin.*



*The ORYX armored personnel carrier from International was developed to provide protection from mine blasts.*

Using other types of passive armor would weigh up to 10 times more to get the same level of protection, according to International.

International's heritage and expertise in designing and building trucks for heavy-duty hauling applications gives its military vehicles the capability to handle the extra mass of the armor. The APC is based on the 4x4 7300 model chassis powered by an inline six-cylinder engine delivering 280 hp (209 kW) and 800 lb-ft (1085 N·m), modified to run on JP8 fuel. It can carry an entire squad in full battle gear at speeds of at least 70 mph (115 km/h).

"We offer a vehicle with a high level of protection but at a lower acquisition cost," said Torres. "Most important is having a worldwide presence of dealers, parts service, and distribution. We can now offer parts and service at nearly every location in the world—we have dealers in Iraq and Afghanistan today. With our huge dealer network we can have parts in place prior to the Army being in a conflict. In North America alone we have 300 dealers in 900 locations."

Another ongoing collaboration with other companies is a mine-blast vehicle, the ORYX APC, which



The cargo truck design for Afghanistan was rapidly customized at International's engineering center.

provides specific personnel protection. "Using our basic truck components, we are adding an armored hull designed to survive mine blasts," said Torres.

International has also developed a medium-duty four-wheel-drive military truck called the MXT-MV, intended for border patrols, recon missions, and security details. Its strong frame design allows it to be armored and provides good towing and payload capacity for on- or off-highway applications. Even with the extra mass of the armor, the MXT has good maneuvering, hauling, and braking capability.

"Each truck or fleet of trucks is customizable for each mission," said Archie Massicotte, President, International Military

and Government. "In each step of the process—review, engineering, manufacturing, delivery, and support—International works with the customer to produce the vehicles needed to accomplish the mission."

International offers training courses and online or CD-based resources to ensure that the trucks are serviced appropriately.

International AWARE vehicle intelligence is a telematics solution that allows authorized individuals to monitor trucks in real time through a password-protected Web site. Compatible with "blue-force tracking," the GPS-based system continually tracks the truck's exact location, direction of travel, and how fast it is going. There is a "geofencing" feature that allows the command center to be notified immediately when a vehicle has left its designated area of operation.

AWARE technology provides integration with truck and body equipment, and it can monitor a number of critical functions of the truck and relay information back to an operations center. For example, the truck can be configured to send an immediate alert to the command center if the truck's body-mounted weapons station or gun turret is fired.

Maintenance managers can also better maintain fleets of equipment through regular monitoring of actual usage. "Total hours of equipment engaged," "engine at high idle," and "auxiliary equipment used" are just some of the types of categories that can be tracked to catch problems earlier or improve efficiency.

David Alexander

## LeTourneau releases the Pit Bulls

LeTourneau has launched its new Pit Bull 950 wheeled-loader and -dozer models, incorporating the independent all-wheel electric drive proven in its line of giant loaders.

As with the other members of LeTourneau's 50 Series family, the Pit Bull L-950 and D-950 are propelled by an electric traction motor at each wheel, independently powered by a diesel-driven generator. Compared with conventional mechanical drive, the system improves traction, minimizes wheel slip, reduces fuel consumption, and saves brake wear with dynamic braking. Diesel-electric drive eliminates shifting for the operator and the added complexity and maintenance demands of transmissions and differentials.

LeTourneau has developed a switched reluctance (SR) drive system for the new Pit Bull L-950 model loader and D-950 wheeled dozer, and the technology will also be available on the larger L-1350 model. Based on a motor concept that has been around since the early 1800s, LeTourneau's SR drive has proven reliable in over three years of intensive testing.

The heart of the technology is the SR traction motor, which can continuously sustain its rated power output. The motor's virtually flat torque curve delivers consistent power at all operating speeds.

The maintenance benefits of the SR motor begin with its simple design. It has no brushes to chip, burn, monitor, or replace; no commutator to grind or undercut; and a rotor LeTourneau engineers call "virtually indestructible." The motor requires no time-consuming inspections. Routine maintenance is limited to replacing two bearings every 20,000 to 30,000 h. The SR motor's compact size—about two-thirds that of a comparably rated dc motor—enhances loader serviceability through increased access to nearby components.



The Pit Bull L-950 rubber-tired wheel loader from LeTourneau features switched-reluctance drive motors on each wheel.

SR uses no magnets, so it costs less to produce. Designs that use dc drive require a large number of magnets, and to be effective the magnets must be very high grade.

The SR rotor is made from steel, is a very simple design compared to the more complex ac induction and dc magnet systems, and is more efficient than competitive systems in low-speed torque generation. The SR rotor generates no internal heat. Other systems build up heat, and when contained within a housing, cooling becomes a major issue.

In addition to the electric drive, the L-950 and D-950 include LINCS, the LeTourneau integrated network control system. Also found in the company's largest loaders, LINCS digi-

The LeTourneau D-950 rubber-tired dozer is powered by a 1050-hp (783-kW) diesel engine and features a 35-yd<sup>3</sup> (26.8-m<sup>3</sup>) rock blade as standard equipment.



tally regulates and monitors all hydraulic, electric, engine, and drive functions, connecting a master control module inside the cab with multiple remote modules close to the components they control. To simplify trouble-shooting, the remote modules are self-programming and interchangeable.

## Pulling power from Bell

According to the company, when **Bell Equipment** introduced its 4206D wheel-driven tractor, pull-scraper manufacturers had to toughen up their equipment to handle the pulling power. Bell has now gone the next step, to accommodate even tougher terrains and more difficult conditions, with the introduction of the new Model 4206D/T. This rubber-track-driven model converts the output of its Tier II compliant, 422-hp (315-kW), 1486-lb-ft (2015-N-m), **Mercedes-Benz** diesel engine into 65,000 lb (289 kN) of drawbar pull, sufficient to pull up to three, fully loaded, 18-yd<sup>3</sup> (14-m<sup>3</sup>) pull scrapers in tandem over rough terrain.

Following in the footprint of Bell's field-proven wheeled version, the 4206D/T features four **ATI** rubber-track drive modules that provide extra traction over a wide range of landscapes and applications. Each 6000-lb (2720-kg) module includes a 36-in (915-mm) wide, continuous rubber track that minimizes surface damage while providing flotation over adverse conditions. Traction is enhanced by the track design while rubberized idlers and bogies provide a cushioned ride.

Unlike other towing devices, the new Bell tractor is designed especially for pull-scraping applications in the construction environment. The control panel and hydraulics are fully adjustable to suit various scraping conditions, which precisely address the correct throttle, gearing, and power requirements. Range-hold switching prevents auto-upshifting and gear hunting during hill-climbing operations.

An interaxle lock provides even traction to both axles, while the controlled traction differentials distribute balanced torque in proportion to the traction demand of the individual wheels/tracks over extreme terrain and slippery material.

The ergonomic cab is designed to provide the operator with comfort and good visibility. A nitrogen-over-oil-struts suspension system provides cushioned ride quality. Other amenities include a tilt and telescoping steering wheel, adjustable air suspension seat, HVAC climate control system, cooled/heated lunchbox, and six onboard computers helping to control driver functions.

A dash-mounted display gives the operator constant real-time feedback. LINCOS also provides built-in diagnostics, can store more than a month's worth of data, and enables remote monitoring and data downloading when equipped with the optional RF modem. LINCOS provides information to the operator, maintenance personnel, and mine management, including bucket weights, cycle times, preventative-maintenance information, and self-diagnostics.

Pit Bull operator amenities include twin joysticks, an eight-way adjustable air-ride seat, and a rubber-mounted, fully insulated cab equipped with a filtered and pressurized air supply as well as automatic climate regulation. The machines also offer reduced downtime with the self-purging KLENZ air-filtration system, self-lubricating ball-and-socket joints, and an emphasis on modular components.

Both vehicles are powered by a 1050-hp (783-kW) diesel engine supplied by either **Detroit Diesel** or **Caterpillar**. Steering is controlled by articulating the front and rear frames with hydraulic cylinders. The individual wheel motors allow for full differential action.

David Alexander



The Bell 4206D/T delivers pulling power with a light footprint.

Bell tested the compatibility of its 4206D construction tractor and ATI's rubber track module system at the **Southwest Research Institute** in San Antonio, TX. Four ATI rubber track modules were installed on a Bell 4206D construction tractor, and then technicians attached a 24,000-lb (10,900-kg) pull-pan scraper and put the machine through a series of tests. Engineers monitored the machine at each step in the process and recorded structural data as the tractor made its way around a designated course.

To further test upper constraints, the technicians added vehicles to the load. The train of additional equipment included three agricultural tractors with a total combined mass of over 114,500 lb (51,950 kg). With the weight of the Bell tractor and the pull-pan scraper factored in, technicians created a total horizontal load of over 200,000 lb (90,700 kg). With all pull factors combined, the Bell tractor and ATI module combination generated over 60,000 lb (267 kN) of drawbar pull during the test. The tests showed no indications of slippage or overstress of the track modules.

David Alexander

## Takeuchi's new hydraulic excavator

New features of **Takeuchi's** TB1140 15-ton (13.6-t) excavator include a two-speed travel system with automatic shift down, primary and secondary auxiliary hydraulic circuits featuring thumb-operated proportional controls, air conditioning, off-set swing boom, and heavy-duty dozer blade as standard equipment. An ergonomic, ten-way adjustable suspension seat and sliding operator's station are also standard.

The TB1140 has an operating mass of 31,370 lb (14,230 kg) and a digging depth of 18 ft (5.5 m). Bucket breakout force is 22,190 lb (98.7 kN). The excavator arm reach at ground level is 28.1 ft (8.6 m), and it has a dump height of 20.4 ft (6.2 m).

Power comes from an **EPA** exhaust-compliant **Isuzu** turbo-diesel engine that generates 83.4 hp (62.2 kW). The TB1140 features a new two-speed travel system that intelligently monitors ground conditions and automatically shifts from high to low speed when additional track power is required. When the additional power is no longer needed, the TB1140 drive system immediately returns to high speed for increased jobsite mobility. For greater control, the drive system features both servo-assist hand- and foot-operated travel controls.

Operator features include electrohydraulic proportional controls for the auxiliary hydraulics (primary and secondary) to provide flexibility and control. Operators now have the option of using either electrohydraulic push buttons or thumb-actuated proportional controls on the primary auxiliary hydraulic circuit to control the main attachment from the left joystick. A secondary set of auxiliary lines is also plumbed to the dipper arm and is controlled using thumb-actuated proportional controls on the right joystick.

The operator compartment also features an auto idle system that, once engaged, will automatically idle the engine after 5 s of inaction, then throttle up to the pre-set engine speed as soon as the operator moves the control levers again. A deceleration button—allowing operators to move between a pre-set engine speed and idle—is also standard on the right joystick. Combining these features with an electronic throttle with three pre-set engine speeds and arrow buttons that vary the throttle up or down from the pre-sets, the TB1140 gives the operator



The Takeuchi TB1140 excavator has an operating mass of 31,370 lb (14,230 kg), and is powered by an Isuzu turbo-diesel engine that generates 83.4 hp (62.2 kW).

many options for fingertip control.

Serviceability on the TB1140 is helped by features such as the electronic engine monitoring system, emergency engine shut-down system for low oil pressure, automatic return-to-idle system for high coolant temperature, and three full opening engine compartment panels for easy access. Other standard features include an independent boom swing with 77° left and 53° right rotation, 360° cab swing at 13.2 revolutions per minute, and a control pattern selector valve for **ISO** or **SAE** pattern joystick settings.

The Takeuchi TB1140 excavator is available on steel or rubber tracks and can be converted from one to the other with minimal changes to the undercarriage.

David Alexander

## Link-Belt delivers more lift

**Link-Belt** has launched the RTC-8065 Series II telescopic rough-terrain crane, which has a new operator's station and a fully rigged transport, with a working mass of less than 90,000 lb (40,825 kg). This version of the crane, unveiled earlier last year at a 60-ton (54-t) base rating, has been upgraded to a 65-ton (59-t) base rating.

The galvanneal operator's cab with curved front window glass provides good visibility at high boom angles. Galvannealed steel is heat-treated after coating to produce a zinc-iron alloy that allows bending and forming operations without impairing corrosion resistance.

Lift-up armrests and a wide sliding door allow easy access to the cab. For operator productivity and comfort, the six-way adjustable seat matches up to the controls. All gauges and switches are in the operator's forward line of sight and are backlit for low-light operation. The optional air conditioner integrates into the heating and ventilation system, which has directional vents in the front of the cab.



The RTC-8065 Series II telescopic rough-terrain crane from Link-Belt has been upgraded to a 65-ton (59-t) base rating.

The RTC-8065 Series II features the new Link-Belt-designed, 38- to 115-ft (11.6- to 35-m) four-section full power formed boom. Teflon pucks automatically lubricate the boom sections requiring no boom grease. Available as an option, a 35- to 58-ft (10.7- to 17.7-m) bi-folding fly attachment extends maximum tip height to 180 ft (54.9 m). Two optional lattice fly inserts extend the tip height to over 211 ft (64.3 m). The fly options have four offset positions of 2°, 15°, 30°, and 45°.

Powering the RTC-8065 Series II is the 225-hp (168-kW) **Caterpillar 3126B** engine. A direct-mount **Dana Spicer** power-shift transmission delivers power to the wheels, with six forward and six reverse speeds. A switch in the operator's cab controls the four steering modes: independent front, combination, crab, and independent rear.

According to the company, the RTC-8065's automotive-style, four-link suspension is a first in rough terrain cranes. The fully independent rear suspension reduces bouncing and improves handling both on and off the road. Link-Belt's patented "Hydro-gas Ride" suspension is available as an option, with a charged accumulator that serves as a shock absorber for improved carrier stability.

There are six access points on the RTC-8065 Series II. Each point features oversized, integrated steps and handholds for easy access to the carrier's expansive flat deck and operator's cab. For engine access and serviceability, there are large swing-out engine doors.

Winches deliver 17,180 lb (76 kN) of line pull and nearly 460 ft/min (140 m/min) of line speed. Spooled onto the winch drum is a durable 0.75-in (19-mm) diameter wire rope. Rotation-resistant rope is available as an option.

David Alexander


## Cat and Mitsubishi go for walkies

**Mitsubishi Caterpillar Forklift America (MCFA)** was formed by two major companies: **Mitsubishi Heavy Industries (MHI)** and **Caterpillar Industrial (CII)**. MHI brought manufacturing and engineering prowess and a well-known brand name to the table. CII offered product-support knowledge, a strong dealer network, and its own worldwide brand identity. The latest MCFA product is a range of electric walkies featuring ac drive motors.

The new electric walkie line is available in models with load capaci-

ties of 3000, 4500, and 6000 lb (1360, 2040, and 2720 kg), marketed in slightly different versions by **Mitsubishi Forklift Trucks** and **Cat Lift Trucks**. With a short head length, each walkie provides functionality, efficiency, and versatility. Each model has the ability to operate with the handle in a fully vertical position using a crawl speed button, allowing for optimum turning capability in tight spaces, and making right-angle stacking and pin-wheeling easy in a trailer.

Each model is fully equipped with a low-mounted control handle constructed of a high-impact resistant material, which increases leverage and the distance between the operator and the tractor, resulting in reduced steer effort and maximum op-




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Versions of a jointly developed new line of electric walkies are available from Mitsubishi Forklift Trucks and Cat Lift Trucks.

erating clearance. For added reliability, each model is equipped with long-life **Bayer** Vulkollan load wheels and drive tires that are designed to reduce cracking and damage from heat build-up.

The new electric walkies are designed for efficiency and equipped with advanced regenerative braking, which recovers energy pulled from the battery while plugging (using the opposite travel direction to slow or stop the unit), when the travel

control is returned to neutral (coasting), and when the handle is released (braking). The feature provides additional value by reducing wear on the brake pad, resulting in lower maintenance costs. For added safety, each unit has an electromagnetic brake with a roll-back protection feature that engages the brake and holds the unit on gradients until travel is requested, regardless of handle position.

The walkies endured a comprehensive testing program that included individual component, chassis, and customer application tests. Results have proven long term reliability and a service interval rating of up to 500 h, which is significantly higher than previous series. Unlike some other designs, the new walkie

trucks feature a welded solid-steel bar construction and durable side rails.

Additional features include sealed switches on the control handle, all rated for at least one million cycles, and a smart reverse direction switch that reduces the risk of unintentional reverse movement.

David Alexander

## Clean cabs from Massey Ferguson

**Massey Ferguson** has introduced three new specialty tractors equipped with pressurized cabs and air-filtration systems designed to supply clean air in the cabin. The system seals out pesticide particles and other contaminants to protect operators during specialty applications such as orchard spraying.

Massey Ferguson's air-filtration system is part of a managed program of occupational health and safety; 5400SA series cab HVAC systems meet or exceed the requirements of **ASAE** S525.1.2 Engineering Standards for Agricultural Cabs.

Incoming cab air passes through the main filter system, and then moves through a recirculation system that includes another filter, a three-speed blower, and an evaporator/heater assembly. A separate blower pressurizes the cab to keep out wind-blown contaminants. A pressure gauge in the cab roof provides constant monitoring of cabin pressure and indicates

when filter service is needed. The cab pressurization system keeps outside air from entering in wind speeds of up to 22 mph (35 km/h).

According to the company, the system filters out 99% of all particles larger than 3 micron. The recirculating air system then removes 95% of the remaining particles. The air in the cabin is changed every 36 s.

Massey Ferguson's 5400SA tractors and cabs are specially designed for close-quarter work such as spraying fruit tree rows in mature orchards. Narrow body styling, wrap-around fuel tank guards, narrow fenders, and horizontal exhaust provide easy maneuverability while minimizing damage to tree branches. Cabs are tapered to fit between tree rows, yet have 52.8 ft<sup>2</sup> (4.9 m<sup>2</sup>) of tinted window glass for good visibility.

Rearview mirrors are mounted inside the cab. A low overall tractor height of 94.1 in (2.39 m) allows easy maneuverability in confined areas.

All three models of the 5400SA tractor are powered by four-cylinder diesel engines that develop 90, 95, and 105 hp (67, 71, and 78 kW) PTO, respectively, and are available in two- or four-wheel drive. A single right-hand control lets the operator quickly shift through 16F/16R gears, and with the touch of a button on the gear lever, engage the Speedshift feature for smoother gear changes under load.

The Category II three-point hitch with electronic linkage control gives the operator precise control of mounted implements. The 26-gal/min (98-L/min) hydraulic flow system provides capacity for remote equipment control and operation. The standard 540/1000 rpm independent PTO permits quick changes for a wide range of applications.

David Alexander



Massey Ferguson's new 5400SA tractors feature special cab styling for better maneuvering through mature fruit orchards, plus an advanced air-filtration and pressurized-cab air system that keeps interior air clean for the operator.

# Performance is tracked at Challenger

More power, greater comfort, and new engines highlight the updated **Challenger** track tractors. Ranging from 225 to 265 hp (168 to 198 kW) PTO, the three new MT700B tractors feature the new **Caterpillar** C9 ACERT Tier 3 diesel engine, which uses better control of the combustion process to meet emissions standards without sacrificing power or reliability. Power is higher on every model compared to the previous MT700 Series. All five models in the MT800B Series, including a new MT875B model rated at 570 hp (425 kW) gross, feature upgraded engines.



The MT700B series of track tractors from Challenger feature Caterpillar engines that meet Tier 3 emissions regulations.



Challenger has calculated that compared to wheeled tractors, less slippage with the Mobil-trac system on tractors such as its MT800B series will equate to significant fuel savings.

protective structure) built into the cab roof, and a new semi-active operator's seat that allows for continuous real-time automatic damping based on terrain inputs.

And a fuel-economy advantage is also built into these tractors, according to Challenger.

"With wheel tractors, a certain amount of wheel slippage is necessary to protect the drivetrain and prevent compaction,"

Like all the other models in the MT800B Series, the MT875B will be available in both agricultural and special application versions to handle the needs of large-acreage farmers, as well as industrial and scraper operators.

The MT700B Series has a programmable transmission for starting in any gear between one and seven and selected Power Management mode, both which can be retained after shut down. The Tractor Management Center (TMC) display includes a real-time track tension monitor that detects and displays the pressure exerted on each track belt. The upper alarm limit has been reduced to warn the operator of potential belt damage due to stretching.

A new belt option was added for operation on compacted and unbroken soils, such as those encountered in a scraper application. The new belts have tread bars designed for less flexing and irregular wear, and the belts are thicker due to two additional layers of rubber on the inner belt surface to reduce debris damage.

A number of cab improvements have been made, including a sound level reduction, a FOPS (falling object

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Engine Power			
Challenger Model	Cat Engine	PTO Power at 2100 rpm hp (kW)	Gross Power at 1800 rpm hp (kW)
MT745B	C9	225 (168)	269 (201)
MT755B	C9	245 (183)	301 (224)
MT765B	C9	265 (198)	320 (239)
MT835B	C15	290 (216)	350 (261)
MT845B	C15	335 (250)	400 (298)
MT855B	C15	385 (287)	460 (343)
MT865B	C18	425 (317)	510 (380)
MT875B	C18	425 (317)*	570 (425)

\* Estimated drawbar power—PTO power not available

said Tony Kosolofski, Marketing Specialist and Sales Engineer for Challenger track tractors. "Wheel tractors typically exhibit slippage of 8 to 12%. The number varies with the application, the tires, and the soil type. In contrast, operators typically experience slippage in the range of 3% or less with the Challenger Mobil-trac system. That means that 5 to 9% of the drawbar power on a comparable wheel tractor is lost to slippage."

Peak power on the new Cat engines occurs at around 1800 rpm, which means operators can often gear up and throttle back on loads that do not require PTO operation. In the meantime, the TMC allows the operator to achieve a pre-set ground speed by automatically varying the engine speed. Another fuel-saving option from the TMC is maximum output mode, which automatically shifts to keep the engine in the peak power range.

David Alexander

## Manitou's telescopic range expands

Manitou has introduced the MT 6034 telescopic handler with a maximum operating capacity of 6000 lb (2720 kg). The MT 6034 can handle 4000 lb (1815 kg) at its 34.25-ft (10.44-m) maximum lift height, and up to 900 lb (410 kg) at its maximum forward reach of 23.25 ft (7.09 m). Maximum travel speed is 20 mph (32 km/h), and full-time four-wheel drive is standard.

A welded box-section boom provides stiffness and strength, while its frame features reinforced C-channels. Stopping power comes from internal wet disc brakes, for longer life, and a neg-



The MT 6034 telescopic handler from Manitou is powered by a Deere turbocharged diesel engine and has a maximum operating capacity of 6000 lb (2720 kg).

ative (spring-applied, hydraulically released) parking brake system. The negative parking brake applies automatically when the engine is shut off or is activated manually by pressing a rocker switch.

Controls are designed to be easy-to-reach for operator accuracy and efficiency. The view from the cab is a full 360°. For applications that require operator protection from the weather, an optional enclosed cab with front and rear windows and a heater/defroster is available. Other options include a suspension seat, a transmission declutch feature, a work light package, and a Work Platform System that allows the use of **ANSI/ASME B56.6**-compliant work platforms.

The new addition to the MT Series is available with a choice of **Deere 4045T** turbocharged, direct-injection, four-cylinder diesel engines delivering either 99 or 115 hp (74 or 86 kW) at 2500 rpm. Other standard features include a three-speed forward/reverse powershift transmission, three steering modes (front-wheel, all-wheel, and crab), and a quick-attach mounting system that reduces the number of times the operator has to leave the cab.

David Alexander

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