

CAT 150 SPECIFICATIONS

BASIC SPECIFICATIONS

- Y___ N___ Machine shall be designed and built by the manufacturer.
- Y___ N___ Base Machine Weight shall not be less than 38,191 lbs (17,323 kg). Weight shall include standard machine configuration, lubricants, coolants, full fuel tank and operator of 200 lbs (91 kg).
- Y___ N___ Machine length from the front outside edge tire to end of tow hitch shall not be less than 351 in (8,912 mm).
- Y___ N___ Machine Wheel Base (distance from front axle to mid tandem) shall not be less than 241 in (6123 mm).
- Y___ N___ A toolbox shall be provided.
- Y___ N___ Machine shall have vandal protection standard including locks for cab doors, engine side shields (4), top tank radiator access door, engine coolant surge tank, hydraulic reservoir cap, fuel tank cap and tool box.

ENGINE

- Y___ N___ Engine shall be designed and built by the manufacturer.
- Y___ N___ Engine shall be a turbo-charged, direct injection, four stroke, 6-cylinder diesel engine.
- Y___ N___ Engine shall be certified EPA Tier 4 Final and European Union Stage IV
- Y___ N___ Engine shall be electronically controlled for more efficient fuel injection and fuel burn.
- Y___ N___ Engine shall achieve rated power requirement with engine displacement not less than 9.3L (568 in³) for better performance and fuel economy.
- Y___ N___ Engine shall develop as standard a rated net flywheel power of at least 200 HP (149 kW) in 1st gear, 210 HP (156 kW) in 2nd gear, 220 HP (164 kW) in 3rd gear, 231 HP (172 kW) in 4th gear, 236 HP (176 kW) in 5th gear, 241 HP (180 kW) in 6th gear, 247 HP (184 kW) in 7th gear and 252 HP (188 kW) in 8th gear.
- Y___ N___ Engine will increase its low idle speed to 1,000 rpm when the battery voltage is below 24.5 volts for more than 5 minutes to ensure adequate system voltage and battery reliability.
- Y___ N___ Peak engine power shall not be achieved at an engine speed greater than 1800 rpm.
- Y___ N___ Rated engine power shall not be achieved at an engine speed greater than 2000 rpm.
- Y___ N___ Engine enclosure and daily service points shall be accessible from ground level and grouped on the left side of the machine.
- Y___ N___ Engine fan shall automatically adjust fan speed via a variable hydraulic fan pump to meet engine cooling requirements thus reducing demand on the engine, putting more horsepower to the ground, reducing noise, improving fuel economy, and reducing heat.
- Y___ N___ Engine shall allow for at least 1000 hours of operation between oil changes. (with SOS sampling)
- Y___ N___ Engine compartment doors shall be lockable without the use of external locks.
- Y___ N___ Engine shall automatically lower engine torque and alert the operator if critical conditions are detected.
- Y___ N___ Machine shall have a 12000 hour coolant interval from factory.
- Y___ N___ The charged air cooler (ATAAC) shall have 6 fins per inch.
- Y___ N___ Economy mode shall be able to be enabled and disabled by the operator through the onboard Message Display.
- Y___ N___ Economy mode shall be lockable via onboard programmable password protection.

POWERTRAIN/TRANSMISSION

- Y___ N___ Transmission shall be designed and built by the machine manufacturer.
- Y___ N___ Transmission shall be a direct drive, power shift, countershaft type.
- Y___ N___ Transmission shall be equipped with built-in self-diagnostic capability.
- Y___ N___ Transmission shall have no less than 8 forward speeds and 6 reverse speeds(for added safety).
- Y___ N___ Transmission shall have 5 working gears between 0-10.6 mph (0-17.1 km/h), for dirt applications.
- Y___ N___ Transmission shall be isolated/resilient mounted to reduce sound and vibration.
- Y___ N___ A controlled throttle shifting system shall be standard to smooth directional gear changes without use of the inching pedal.
- Y___ N___ Electronic Throttle Control (cruise control) shall be standard and shall be controlled by a push button.
- Y___ N___ A load compensating system for the transmission shall be standard to ensure consistent shift quality in all applications.
- Y___ N___ Automatic Differential Lock/Unlock feature shall be standard and shall not have speed, shuttle shifting or tandem spinning restrictions for engaging/disengaging. System must be load-sensing for optimal performance. .
- Y___ N___ Automatic mode shall not be overridden via manual intervention for optimal performance and to prevent unintended differential engagement
- Y___ N___ The total surface area of all the transmission clutch packs shall not be less than 1831 in² (11,812cm²).
- Y___ N___ Diameter at the output end of the transmission shaft shall be no less than 2.29 in (58.1 mm).
- Y___ N___ Machine shall be equipped with an electronic inching pedal for improved modulation and machine control.

Y___ N___ Machine shall be equipped with electronic over-speed protection to prevent the engine and transmission from over speeding, as a standard feature.

STEERING & IMPLEMENT CONTROLS

Y___ N___ Steering wheel shall not be required to operate machine.

Y___ N___ Joystick Steering capabilities shall be ISO 5010:1992.

Y___ N___ Machine shall employ a friction pack style steering mechanism, utilizing the follow steer concept.

Y___ N___ Machine, Drawbar, Circle, and Moldboard shall be control shall be achieved via a right hand multifunction, 3-axis, joystick, including moldboard slide and tip, drabar center shift through a 4 way hat switch and circle turn by a left or right twist intuitively.

Y___ N___ Blade lift cylinders shall be individually controlled by the multifunction, 3 axis joysticks; Lift and drop of cylinders shall be achieved by the forward and back motion of the respective joystick. Forward(left joystick) lowers left lift cylinder, back(left joystick)raises the left lift cylinder, forward(right joystick) lowers the right right lift cylinder, back(right joystick) raises the right lift cylinder.

Y___ N___ Secondary steering shall have a primary and secondary power supply in the event the primary source is lost.

Y___ N___ Manual Differential Lock/Unlock shall be operator controlled, via a push-button, located on a single, 3-axis, multi-function, right-hand joystick control.

Y___ N___ The machine shall have two redundant articulation sensors.

Y___ N___ Machine shall have auto articultion available to allow the the operator to automatically articulate with a steering input. The rear wheels will will automatically follow the front wheel. The system is activated by a three position switch: Off, On- forward and reverse, or On - forward only. The system improved maneuverability and performance in tight work space or for easy turn arounds.

BRAKES

Y___ N___ Machine shall have primary and secondary service brakes.

Y___ N___ Entire braking system shall meet all requirements of ISO 3450: 1996.

Y___ N___ Two separate left and right hydraulic brake accumulators shall be standard for safety.

Y___ N___ Parking brake shall be multi-disc, oil-cooled, spring-applied, hydraulically released, sealed, adjustment-free, and integrated into the transmission. Park brake shall not be externally located.

Y___ N___ Parking brake shall be serviceable without removing the transmission.

Y___ N___ Brakes shall be continuously pressurized, filtered, oil cooled.

Y___ N___ Service brakes shall provide a minimum of 620 in² (4,003 cm²) of friction material surface area at each of the four tandem wheels to eliminate braking loads on the power train.

HYDRAULIC SYSTEM

Y___ N___ A standard triple-redundant hydraulic relief system shall protect machine hydraulic components.

Y___ N___ Hydraulic implement pump shall produce between 0 and 55.0 gal/min (210 L/min) of oil flow at 1,800 RPM.

Y___ N___ Hydraulics system shall be a closed center, load sensing type with a variable displacement, axial piston-type pump.

Y___ N___ Hydraulic system shall be fully sealed, using Duo-cone and O-ring face seals to prevent leaks,contamination, and spillage.

Y___ N___ The hydraulic tank shall have a baffling system to reduce potential pump cavitation.

Y___ N___ The maximum hydraulic system pressure shall be no more than 3,500 psi (24,150 kPa).

Y___ N___ Implement valves shall be electro-hydraulic, designed and built by the machine manufacturer.

Y___ N___ Implement valves shall be proportional priority pressure compensating for consistent response when multi-functioning any combination of implement controls and independent of engine speed.

Y___ N___ Implement pump shall be solely dedicated to implement controls and not shared with any other components.

Y___ N___ Lock valves shall be integrated into the main implement valve to prevent cylinder drift.

Y___ N___ The hydraulic stand-by pressure shall be no more than 885 psi (6100 kPa) at 1,800 RPM.

Y___ N___ A sight gauge will be provided for checking hydraulic reservoir fluid.

Y___ N___ Hydraulic oil change service interval shall be no less than 6000 hours with oil sampling

Y___ N___ Hydraulic system shall have a separate oil tank solely dedicated to the implement pump.

Y___ N___ Hydraulic filter will have 1000 hour change filter interval.

FRONT AXLE AND TANDEM

Y___ N___ Front axle oscillation shall be no less than 32 degrees total, per side 16 degrees up and 16 degrees down.

Y___ N___ Front axle shall be an arched design for maximum ground clearance.

Y___ N___ Front spindle shall be heat induction hardened.

- Y___ N___ Front wheel spindle bearings shall be a double-tapered design with the larger diameter bearing mounted closest to the centerline of the front tire.
- Y___ N___ Front wheel spindle maintenance intervals shall be no less than 2000 hrs.
- Y___ N___ Front wheel steering angle shall be no less than 50.0 degrees left or right.
- Y___ N___ Maximum front wheel lean shall be no less than 18 degrees left or right.
- Y___ N___ Machine turning radius shall not exceed 25 ft. 7 in. (7.8 m) using front steering, full articulation and unlocked differential.
- Y___ N___ Tandem drive chain pitch shall not be less than 2.0 in (50.8 mm).
- Y___ N___ Tandems shall be capable of oscillating 15 degrees front tandem up and 25 degrees front tandem down, with full machine articulation and having no interference between tandem wheel and machine structure.
- Y___ N___ Electronic and mechanical steering stops located at each wheel and steering cylinder relief valves shall be present to prevent steering system damage during normal operation.
- Y___ N___ Steering tie rod ends shall be heat induction hardened.

TIRES AND RIMS

- Y___ N___ A 10 in by 24 in size 3-piece tire rim shall be standard to provide mounting for 14.00-R24 Michelin or Bridgestone tires

OPERATORS STATION

- Y___ N___ A 42,075 BTU/h (12.3 kW) heater shall have an integral pressurizer and four-speed fan along with A/C.
- Y___ N___ Cab shall have angled floor design allowing direct visibility to moldboard.
- Y___ N___ Seat shall be a cloth-covered suspension seat with 3 in (76 mm) retractable seat belts, with adjustments for fore-aft position, seat height, seat back angle, thigh support, and lumbar support.
- Y___ N___ An enclosed cab with ROPS (Rollover Protective Structure) according to ISO 3471: 1986-1997 shall be provided.
- Y___ N___ Cab shall have fixed front window of laminated glass with intermittent wiper.
- Y___ N___ Radio arrangement will include 24V to 12V converter, two speakers, antenna and wiring.
- Y___ N___ An instrument cluster shall be provided that includes a speedometer, tachometer, coolant temperature, fuel and articulation angle gauge.
- Y___ N___ Operator cab fresh air-filter shall be accessible for clean out and replacement, from outside of the cab at ground level.
- Y___ N___ A real-time information system shall monitor all system data and alert the operator of any faults through a digital text display. This performance and diagnostic information system shall be programmable for multiple languages .
- Y___ N___ Wipers shall be provided on side and rear windows.
- Y___ N___ An electronic message system shall provide real-time machine performance and diagnostic data.
- Y___ N___ The forward visibility shall be continuous and unobstructed glass from roofline to floor providing visibility of the blade, heel and toe, back of the cutting edge, and front tires.
- Y___ N___ Cab shall have cup holder, personal cooler holder/storage compartment for operator's manual, with a molded floor mat.
- Y___ N___ Window washer fluid bottle refill spout shall be located external of the cab.
- Y___ N___ DEF gauge must be visible to the operator at all times.

CIRCLE & MOLDBOARD

- Y___ N___ Drawbar, circle, and moldboard shall be controlled with a maximum of two multifunction, 3-axis joysticks, as standard.
- Y___ N___ Drawbar wear strips shall be replaceable drop-in inserts made from nylon composite material, replaceable and adjustable from the top of the drawbar plate via removable cover plates.
- Y___ N___ The drawbar shall feature welded protective wear plates to prevent lift group contact with the primary drawbar structure.
- Y___ N___ A 14 ft (4267 mm) long, 24 in (610 mm) high and no less than 7/8 in (22 mm) thick moldboard shall be included.
- Y___ N___ Moldboard wear strips shall be adjusted with lock screws, providing shim-less adjustment capability both vertical & horizontal.
- Y___ N___ The moldboard shall be pre-stressed during manufacturing for superior strength and durability.
- Y___ N___ Moldboard slide rails shall be constructed of a heat-treated, high carbon steel and have replaceable bronze alloy wear inserts on top and bottom.

- Y___ N___ Circle shall be a single piece, rolled-ring forging with raised wear surfaces on the top and bottom.
- Y___ N___ Circle shall be rotated by a hydraulically driven motor (pinion gear) with a minimum circle pinion torque capability of 44253 ft-lb (60,000 N-m).
- Y___ N___ Circle teeth contact surfaces shall be induction-hardened on the front 240 degrees of the circle.
- Y___ N___ Blade lift and center shift cylinders shall have replaceable bronze-alloy wear inserts in the ball sockets with removable shims to insure the ability to remove free play throughout the useful wear insert life.
- Y___ N___ All 7 Link Bar positions have replaceable bushings.
- Y___ N___ Linkbar pin shall be separate from pin pulling mechanism for easier service and lower O&O costs.
- Y___ N___ There shall be 3 sideshift anchor positions shall be provided for extended reach capability as standard.
- Y___ N___ Pinion Gear shall be separate from the Pinion Shaft to allow for a quick and easy serviceable design.
- Y___ N___ Circle outside diameter shall be no less than 60.2 in (1530 mm).
- Y___ N___ Throat clearance with standard moldboard shall be at least 153 mm.
- Y___ N___ A Circle Saver (Pinon grease system) for easier maintenance shall be available from the factory.

ELECTRICAL

- Y___ N___ Machine shall have a 145 amp-hour, 1125 CCA heavy-duty battery.
- Y___ N___ Machine shall have a minimum 150-amp alternator at 24 volts provided which is brushless for increased life and durability.
- Y___ N___ Six 3 x 3 in (76 x 76 mm) halogen mounted cab lights shall be provided.
- Y___ N___ A 24 V to 12 V converter with 10-amp capacity shall be provided.
- Y___ N___ LED white reversing lamps and LED stop lamps shall be provided.
- Y___ N___ Electrical system shall have a master disconnect switch with a removable key (in addition to the ignition switch), accessible from the ground level.
- Y___ N___ Power must remain available upon key off to purge DEF system lines and protect components.

SERVICEABILITY

- Y___ N___ Machine shall have a lockable swing-out cooling fan housing featuring a latch-style mechanism (shall not be of a bolted design), allowing easy access to cores. Ability to open/close shall be ground level accessible, eliminating need to climb on machine.
- Y___ N___ The dip stick for checking transmission fluid shall be at ground level.
- Y___ N___ Hydraulic tank site gauge shall be readable from the ground.
- Y___ N___ Ability for ground level fueling shall be provided.
- Y___ N___ A two-way communication tool shall give service technicians easy access to stored diagnostic data and allow configuration of machine parameters.
- Y___ N___ Machine shall provide 3 points of contact on all areas of the machine, for mounting and dismounting.
- Y___ N___ The articulation joint shall have mechanical locking device to prevent frame articulation while servicing or transporting machine.
- Y___ N___ Sampling ports shall be accessible from the tandem level and provide access to the engine, hydraulic, coolant, and fuel ports.
- Y___ N___ Engine primary and final fuel filters shall have 1000 hour service replacement interval with fluid sampling.
- Y___ N___ Engine shall have primary fuel filter with fuel water separator and electronic sensor, quick release dual stage filter and primer pump.
- Y___ N___ Engine oil filter shall be a 1000 hour change interval, cartridge style filter
- Y___ N___ Engine primary and final fuel filters shall have 1000 hour service replacement interval.
- Y___ N___ Engine shall have primary fuel filter with water in filter (wif) sensor, quick release dual stage filter and primer pump.
- Y___ N___ Cartridge style filters (engine oil filter, fuel filters) shall have ability to drain filter canisters prior to removal for cleaner and easier filter changes.
- Y___ N___ Transmission filter restriction indicator shall be displayed in the cab.
- Y___ N___ Lock out Tag out capabilities shall be provided standard and increase the safety levels during down time. This ensures that an energy isolating device and the machine which are being worked on and cannot be operated
- Y___ N___ DEF tank fill shall be located on the same side of the fuel tank fill, and be easily accessible from ground level.

SAFETY AND ENVIRONMENTAL

- Y___ N___ A circle drive slip clutch shall be provided to reduce horizontal moldboard impact damage.
- Y___ N___ An external emergency kill switch shall be available for ground level engine shut down.
- Y___ N___ Secondary, electric steering pump shall be provided as a backup to the primary implement hydraulic pump.

- Y___ N___ Operator not present monitoring system will lockout implements, shall not allow gear shift out of neutral, and lock parking brake if system detects operator not present for increased safety.
- Y___ N___ Hydraulic implement lockout shall be achieved by actuating a single electrical switch within the operator station.
- Y___ N___ Machine shall have laminated glass for the front windows and doors, to protect the operator from shattered glass.
- Y___ N___ Machine shall provide dual exits allowing for emergency egress should one side become obstructed.
- Y___ N___ Electrical system shall have a master disconnect switch with a removable key and lock for added safety.(in addition to the ignition switch).
- Y___ N___ Machine shall have a steering software system shall automatically reduce steering sensitivity as the ground speed increases.
- Y___ N___ Machine shall have back-up lights and sounding alarm when reverse gears are selected.
- Y___ N___ Cooling fan shall have both a shroud and rear grill for protection during service.
- Y___ N___ Machine shall allow cab interior and exterior lights to remain on separate from ignition switch, for safe exit of the machine during night operation.

SAFETY AND ENVIRONMENTAL-OPTIONAL ATTACHMENTS

- Y___ N___ A guard shall be available to protect the machine's transmission from debris.
- Y___ N___ Rear vision camera with integrated display and wiring shall be included
- Y___ N___ Outside mounted mirrors shall be included.

OPTIONAL ATTACHMENTS

- Y___ N___ A Rome Sloper shall be included.
- Y___ N___ Internal Service Lights.
- Y___ N___ Technology to send location, utilization, health and productivity to remote locations
- Y___ N___ Front Headlights and Rooding Lights Included

ADDITIONAL

- Y___ N___ 5 year 7,500 Hour Premier/Full Warranty with all Scheduled oil Sampling Kits and diagnosis included and NO travel/mileage/deductible charges for warranty repairs
- Y___ N___ Service and Parts Center within a 50 Mile Radius of Clinch County Public Works Department
- Y___ N___ Operators Manual as well as Parts and Service CD.
- Y___ N___ Includes machine delivered to Clinch County Public Works

JOHN DEERE 770G SPECIFICATIONS

- Y___ N___ Tier 4 Final Turbo Diesel Engine with 190 Horsepower minimum with Reversing Engine Fan
- Y___ N___ Powershift Transmission with minimum 8 gears forward and 6 gears reverse with Auto Diff Lock
- Y___ N___ Minimum 14 foot Moldboard and Blade and equipped with Bolt on Cutting Edges and End Bits
- Y___ N___ 24 Volt Electrical System with minimum 130 AMP Alternator
- Y___ N___ Grading, Rooding and Hazzard Lights and Top Mounted Beacon
- Y___ N___ Joystick Controls
- Y___ N___ ROPS/FOPS Cab with Air Conditioner, Heater, Front/Rear Wipers and Washers, Air Suspension Seat, Cab Air Precleaner, Rear Window Defrost, Engine Decelerator, 12/24 Volt Converter, Front Lower Window Wipers and Washers, AM/FM Radio with Weatherband
- Y___ N___ 17.5 Radial Tires on Multi Piece Rims
- Y___ N___ Front Mounted Push Block/Counterweight
- Y___ N___ Minimum Operating Weight 42,000 lbs without sloper
- Y___ N___ Rear Camera, Vandal Protection, Fluid Sampling Ports and Full Bottom Guarding
- Y___ N___ 5 year 7,500 Hour Premier/Full Warranty with all Scheduled oil Sampling Kits and diagnosis included and NO travel/mileage/deductible charges for warranty repairs
- Y___ N___ Service and Parts Center within a 50 Mile Radius of Clinch County Public Works Department
- Y___ N___ Operators Manual as well as Parts and Service CD.
- Y___ N___ Includes machine delivered to Clinch County Public Works