

Used John Deere 7230, Premium Cab, MFWD, 16 X 16 Power Quad Plus

General

It is the intent of this specification to describe an industrial self propelled Used mower tractor. The unit shall have less than 1600 hours. The tractor model shall meet or exceed the terms of this specification.

The unit shall be complete and fully operational upon delivery to the purchasers site within 14 Days ARO.

For any offer to be considered all items must be of a standard production model and not modified for bid purposes. Please state Warranty remaining on unit _____.

	Specification Required	Comply Yes or No	Exceptions, Deviations, and Explanations List
T1.0	Engine		
T1.1	111 PTO horsepower (82 KW) @ 2300 RPM		
T1.2	131 Engine horsepower (98 KW) @ 2300 RPM		
T1.3	6 cylinder Turbo charged diesel engine		
T1.4	two (2) Valve in Head with Wet Sleeve design		
T1.5	414 CID (6.8 Liters)		
T1.6	Dual temp cooling system		
T1.7	Coolant cooled charged air cooler		
T1.8	Dry type air cleaner with safety element and pre cleaner		
T1.9	Under hood muffler with vertical exhaust		
T1.10	Engine service side shields		
T1.11	Thermostat starting aid		
T1.12	Charge Air Heater		
T1.13	Water in fuel sensor		
T1.14	Antifreeze		
T1.15	Front auxillary drive preparation		
T2.0	Transmission		
T2.1	Power Quad, 16 forward speeds, 16 reverse speeds, with left hand mechanical reverser (19 mph / 30kmh)		
T2.2	Park lock		
T2.3	Hydraulic "wet" clutch		
T3.0	Steering and Brakes		
T3.1	Hydrostatic Steering		
T3.2	Dual stage disc brakes		
T4.0	Hydraulics		
T4.1	Load sensing constant flow pressure compensated system		
T4.2	21.1 GPM pump capacity @ 2300 engine RPM		
T4.3	Dual selective control valve with couplers		
T4.4	Power beyond, allows hydraulic pump to power implements that have independent control valves		
T5.0	Power Take off Shaft		
T5.1	Independent 540/1000 RPM rear with shields		
T5.2	Hydraulic clutch		
T5.3	Neutral start		
T5.4	Seat activated PTO warning		
T6.0	Electrical		
T6.1	12 volt electrical system		
T6.2	Battery (1230 CCA, 110 Ah)		
T6.3	7 terminal ASAE outlet socket		
T6.4	key engine shutoff		
T6.5	90 amp alternator		
T6.6	one remote three point hitch switch		
T7.0	Instrumentation		
T7.1	Tachometer		

T7.2	Speedometer		
T7.3	Hour meter		
T7.4	Electronic fuel gauge		
T7.5	Oil pressure indicator light		
T7.6	Air Cleaner restriction indicator		
T7.7	Coolant temperature gauge		
T8.0	Rock Shaft and Draw Bar		
T8.1	One fender mounted 3 point hitch control		
T8.2	Rear dual cylinder rock shaft		
T8.3	Category 2 hitch		
T8.4	Left hand telescopic draft link		
T8.5	Electronic hitch and control		
T8.6	Swinging draw bar		
T8.7	Left hand stabilizer bar		
T9.0	Lights		
T9.1	Two front grille		
T9.2	Single rear work light		
T9.3	Flashing warning lights		
T9.4	Combination tail and implement		
T10.0	Rear Axle Wheels and Tires		
T10.1	Flanged axle		
T10.2	Eight position rear wheels		
T10.3	18.4 x 38 In. 149A8 R1W Radial (460/85R38 In. 149 A8 R1W Radial)		
T11.0	Front Axle Wheels and Tires		
T11.1	4WD front axle - Caster Action Mechanical		
T11.2	Tire Size - 14.9R24 126A8 R1W Radial		
T12.0	Miscellaneous		
T12.1	Hydraulic differential lock		
T12.2	SMV emblem		
T12.3	Full length structural frame		
T12.4	55 gallon fuel tank		
T12.5	Tiltable engine enclosure		
T12.6	Horn		
T13.0	Comfort Guard Cab		
T13.1	Two doors		
T13.2	Two front roof working lights		
T13.3	Air conditioning		
T13.4	Tilt steering wheel		
T13.5	Console mounted shift levers		
T13.6	Air suspension seat, 3 In. cushion, horizontal suspension, backrest adjustment, arm rests, mechanical lumbar support, side rails, swivel 15 degrees left and 15 degrees right, operator presence switch, retractable seat belt, operators		
T13.7	Radio prep package, antenna, cable, two speakers, wiring harness for speakers and radio		
T13.8	Hand and foot throttle		
T13.9	Viscous drive fan		
T13.10	Front windshield wiper		
T13.11	A post mounted cup holder		
T13.12	Telescopic rear view mirrors (2) manually adjustable		
T13.13	Cab Tilts 90° to right for service.		
T14.0	Warranty		

T14.1	24 months or 2000 hours which ever comes first		
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General (T4 3OS-SB)

It is the purpose of the following specifications to describe a used extreme duty hydraulic driven boom mower. Mowing is forward and right of the right rear tire and extended by means of an articulated two section boom with hydraulic break away. This unit shall be constructed to interchange with any of the following: 50" Rotary Cutting Head, 60" Rotary Cutting Head, 63" Flail cutting head, 50" Flail Cutting Head, 48" Saw Blade, 50" WetCut Sprayer, Boom Snow Blower, 22" Rotary Ditcher, 60" Side Rotary Mower or 75" Side Flail Mower. The unit will be the manufacture's current production model with a minimum of (1) one year previous production, meeting or exceeding the terms of these specifications. Unit's shall be manufacturer's heaviest duty model available. The vendor shall guarantee that a stock of component parts be available at a location convenient to the user. For any offer to be considered, all items must be of a standard production model, not modified for bid purposes. It is a requirement of this bid that vendor submit the pertinent information requested in each section marked "(VENDOR REQUIREMENT)". **In the event the requested material and responses are not supplied, by the vendor, the bid submitted will be considered non-responsive and will automatically be rejected.**

Boom Mower

Line Number	SPECIFICATIONS REQUIRED	COMPLY YES / NO	EXCEPTIONS, DEVIATIONS, and ANSWERS
B1.0	<u>SAFETY AND TESTING</u>		
B1.1	Shall meet the following industry standards: SAE: J232, J284, J990, J1065. ANSI/ASAE- 201.4, S203.13, S205.2, S279.12, S350, EP363.1, S483, S493. ASTM: A370. (VENDOR REQUIREMENT)Submit compliance report signed by a registered Professional Engineer(PE).		
B1.2	Unit shall be equipped with a 7 second brake valve on the cutting assembly.		
B1.3	Electric Solenoid control transport lock to be integrated into the mower control box.		

B2.0	<u>MAIN FRAME</u>		
B2.1	Main Frame shall be constructed of fabricated 80,000 PSI steel, bolted directly to each side of tractor frame. An underbelly frame member, running under engine, shall be welded, box frame constructed, of not less than 3/4" top and bottom material, with 5/8" sides, and connect the mainframe to each side of tractor(specifically excluding frames over hood designs). An integral swing cylinder mast shall be supplied as a welded assembly with the main frame.		
B2.2	Main Frame shall be constructed of fabricated 80,000 PSI steel, bolted directly to each side of tractor frame. An integral swing cylinder mast shall be supplied as a welded assembly with the main frame.		
B2.3	Main Frame shall position horizontal inner boom pin at a distance of 50" from the ground. (VENDOR REQUIREMENT)Submit the actual distance from inner boom connecting pin (pin center)to the ground.		
B2.4	Main Frame shall provide a minimum of 12" of ground clearance at a distance of not more than 26" from tractor center line. (VENDOR REQUIREMENT)Submit actual distance from mainframe to ground and from tractor center line to the lowest part of the mower frame or mower mounting component.		

B2.5	Axel braces shall be connected to the main frame with a square tube assembly, of not less than 1/4 wall, 4" x 4" A500, tubing, bolted to main frame and to the bottom of the tractors rear axel housing extending to the rear of the tractor and will provide a solid mounting structure for boom stow system. (VENDOR REQUIREMENT) Vendor shall submit a description of how load from boom stow system is transmitted to mainframe of mower.		
B2.6	Base shall have integral boom swivel attachment fork and constructed of 3/4" and 1" thick 100,000 PSI steel. (VENDOR REQUIREMENT) Submit material and thickness of fork.		

B3.0	BOOM SWIVEL BRACKET		
B3.1	Swivel shall be a welded box construction, with a double section swivel cylinder tang, and a vertical bearing boss of not less than 3 1/2" diameter, with a 7/16" wall thickness. A high-strength bearing, steel backed, porous bronze inner structure, acetal resin overlay, with grease pockets built in shall support a 2 1/2" vertical pin. Pin shall be constructed of 4140 cold drawn steel, prehardened(heat treated), to a minimum yield of 105,000 PSI, pin shall be zinc plated. (VENDOR REQUIREMENT) Submit manufacturer of bearing, model and size.		
B3.2	Swivel shall connect to inner boom cylinder with a greaseless spherical bearing. (VENDOR REQUIREMENT) Submit type of bearing and size.		
B3.3	Swivel shall be supported by a greaseless thrust washer to eliminate galling between swivel bracket and boom mounting bracket. (VENDOR REQUIREMENT) Submit ID and OD dimensions and thickness.		
B3.4	Hydraulic Hoses shall be routed thru hose clamp/guides with hose guards to prevent chaffing.		
B3.5	Horizontal swing cylinder shall have an internal cushion device to limit flow when boom is operated to the forward boom position.		

B4.0	PRIMARY BOOM		
B4.1	Primary boom shall be a 8" x 6" structural tube of not less than 100,000 PSI Domex® steel and have two inner, one piece, reinforced cylinder attaching ribs with the end welds strategically welded around end of rib to the boom upper surface. Inner reinforcement shall be 1/4", 100,000 PSI Domex® steel anchor plates, saddle mounted to the top and sides of boom. Top anchor plate shall be structurally welded to main tube and have 4, 5/8" x 3 3/4" core welds on each side connecting top anchor plate to inner primary boom tube. Inner end of Primary boom shall have a 1 1/2" diameter 105,000 PSI yield, hardened, nitride surface pin, with a high-strength bearing, steel backed, porous bronze inner structure, acetal resin overlay, with grease pockets built in. (VENDOR REQUIREMENT) Submit a complete description of boom, materials, and boom reinforcements.		

B4.3	Pressure and return lines shall be preformed steel tubes, or hoses, with hoses at pivot points and mounted to back of boom. (Specifically excluding hoses and tubing inside or front of booms)		
B4.4	Top mounted double acting lift cylinder shall have a nitrogen accumulator.		
B4.5	Cylinder end attach points shall have replaceable bearings. Primary boom lift cylinder shall not be less than 5" in diameter and 25" of stroke. Secondary lift cylinder shall not be less than 4 1/2" diameter and have 26 1/2" of stroke. Both cylinders shall be equipped with spherical bearings located at each end of the cylinders. Cylinders shall be welded, double acting and mounted to top of boom.		

B5.0	<u>SECONDARY BOOM</u>		
B5.1	Secondary boom shall be constructed of with a minimum of, 100,000 PSI yield Domex® steel, with a 6" x 4" tube, reinforced at all stress points, including both top and sides of secondary boom, with 100,000 PSI Domex® steel. Cylinder anchor, for head roll, shall be 2, 3/8" A514 steel ears integrally welded to secondary boom.		
B5.2	Pressure and return lines are preformed steel tubes and hoses mounted to rear of boom.		
B5.3	Deck roll cylinder shall be 4" diameter and have a stroke of not less than 15". Cylinder shall be welded, double acting and mounted to top of boom.		
B5.4	Outer end of secondary boom shall be boxed reinforced to mounting boss. Boss shall be 2 1/4" diameter A513, DOM tubing integrally welded into box section. The connecting pin shall be 1 1/2" diameter and shall be supported by replaceable, steel backed bearings, of porous bronze inner structure, and acetal resin overlay with grease pockets built in.		

B6.0	<u>CUTTER HEAD ATTACHMENT</u>		
B6.1	Cutter head shall be connected to deck roll cylinder with an H type rotating device attached to head clamp with 1 1/2" diameter pins supported with replaceable steel backed bearings, of porous bronze inner structure, and acetal resin overlay with grease pockets built in .		
B6.2	Cutter head clamp shall be a box section welded assembly constructed of not less than 1/4", A572 Grade 50 steel, pin bosses shall be 2 1/4" outside diameter, A513DOM steel, with a pin diameter of not less than 1 1/2" diameter. Clamp shall attach to a 4" square tube integrally welded to cutter head. (VENDOR REQUIREMENT) Vendor shall describe how boom attaches to cutter head.		

B7.0 HYDRAULICS

B7.1	Pump shall be direct drive from the tractor front crankshaft adapter. Front drive shall have a steel adaptor mounted to the tractors crankshaft pulley with bolts through steel bushings, mounted into rubber bushings. (rubber mounted engine design shall have a double u-joint pump drive shaft in lieu of rubber bushing design) (VENDOR REQUIREMENT) Submit a complete description of shaft attachment and number of u-joints if supplied.		
B7.2	Pump driveshaft rated not less than 122 HP.		
B7.3	Reservoir shall be internally treated against corrosion with industry approved chemical agent at time of manufacture. Reservoir shall have a in tank filter rated at 75 GPM, 10 micron, 200 beta, element with bypass, restriction gauge, minimum (1) one PSI pressure at suction outlet and have ball valve at suction line. Tank pressurized to 3 PSI. (VENDOR REQUIREMENT) Submit material used to treat reservoir. Type, design and micron size of filter element.		
B7.4	Reservoir shall be mounted in tractors left hand rear wheel well. Reservoir shall have sufficient clearance for proper cooling and shall be a minimum 37 gallons of oil in an operating condition. Reservoir shall have a minimum of not less than 5" clearance (oil cold) from top of reservoir for expansion. Hydraulic fluid level and temperature gauge to be built-in reservoir.		
B7.5	Hydraulic pressure connections shall meet SAE O-ring and JIC standards.		
B7.6	Pump shall be front mount, cast steel housing, steel gears, rated at 3500 PSI, 45 GPM and 96 HP input. (specifically excluding piston type pumps and cast aluminum housing pumps)		
B7.7	Suction hose shall be unrestricted (Specifically excluding suction filters and screens)		
B7.8	Hydraulic oil shall meet a cleanliness standard of ISO 46 rating, and the ISO Code 16/14/11 or better. (VENDOR REQUIREMENT) Submit report of oil sample.		
B7.9	Hydraulic hoses and tubes shall be cleaned with pneumatic, triple projectile cleaning, and shall maintain a JDS-G169, class 5.6. ISO cleanliness rating. (VENDOR REQUIREMENT) Submit method of cleaning and standard met.		
B7.10	Motor shall have cast steel housing with steel gears.		
B7.11	Mower control valve shall be an electrically controlled, pilot operated. Logic elements shall be used to control pressures and ramp up and down speed to prevent excessive pressure spikes to system. Valve shall stop mower from turning in the off position and will not cause a restriction to generate drift while in the off position.		
B7.12	Mower control valve shall stop cutter assembly in maximum of 7 seconds from full RPM. (VENDOR REQUIREMENT) State time to stop from full RPM.		

B8.0 JOY-STICK CONTROL LIFT VALVE

B8.1	Joy-Stick Valve Option: Shall be an electro-hydraulic, load sensing valve. Valve shall have interchangeable spools and shall have a manual over-ride for each section, and 12 volt electrical actuation.		
B8.2	Valve(Joy-Stick) shall have load-independent flow control, oil flow to individual function is independent of the load pressure of the function. Valve shall have built in pressure relief in pump side module(PVP), with system capabilities of pressures of not less than 4,350 psi continuous, and 4,640 psi intermittent. PVP shall have a pressure gauge connection for service and have an open center option for fixed displacement pumps.		
B8.3	Valve (Joy-Stick) body shall have interchangeable spools, integrated pressure compensator, check valves, and different spool variants. Valves shall be configured with manual over-ride levers on one end and an electronic actuation module on the other.		
B8.4	Electrohydraulic(Joy-Stick) actuation module shall integrate directly with proportional valve body. Module shall have integrated electronics, sensors, and actuators, and shall have a feedback transducer measuring spool movement in relation to input signal, module shall control the direction, velocity, and position of main valve spool. Module shall have automatic active fault monitoring, and directional indication and LED light indication. Module shall have low hysteresis and shall have attachment for a sealed Deutsch connector. (REQUIRED)Vendor shall provide module hysteresis value, brand of connector, and IP rating of connector.		
B8.5	Joy-Stick controller shall be an ergonomic right hand control, with two proportional functions on X-Y mode, and a top grip to house two proportional rollers. Controller handle shall have a leather-like grained surface to allow hand to breathe during operation. Controller rollers shall have a spring centered potentiometer with a working range of + or - 42°. Controller shall be adjustable with dead band adjustment, independent voltage limiting potentiometers for each function, and integrated direction switches for each proportional module. Controller shall have integral cable plug in, and an RF shielded cable shall be supplied by the manufacturer. (VENDOR REQUIREMENT)Vendor shall state the manufacturer, model, and type of electronic module, joy-stick, and valve.		

B9.0 **COUNTERWEIGHT**

B9.1	Counter weight, total ballast weight (wheel weight and Calcium Chloride solution) shall be a minimum of 5,437 lbs. Wheel weight shall be cast steel, mounted flush to outside of wheel, and shall weigh not less than 4,250 lbs. (specifically excluding flame cut steel and or frame mounted weights) (VENDOR REQUIREMENT) Vendor to state total ballast weight and describe and list wheel weight.		
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B10.0 **OPERATOR PROTECTION**

B10.1	Shall have 3/8" right side, hard surfaced, polycarbonate protection for operator. Installed into the original cab manufactured door and or side window. (VENDOR REQUIREMENT) State thickness, manufacturer, and type of hard surface to polycarbonate.		
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B11.0	STOW SYSTEM		
B11.1	Boom shall stow to the rear of tractor, with all hydraulic pressure relieved from the boom system. An electro-hydraulic lock-up, engaged from the operators position, shall prevent cutter head from moving while in the transport position.		
B11.2	Stow system shall consist of a welded assembly holding the secondary boom. The system shall arch over the tractors 3pth hitch area and allow for use of the 3 point hitch while the boom is not in the transport position. The stow system shall directly attach to an axle brace on the right and left hand side for strength.		
B11.3	The upper stow assembly shall be constructed of 1/4" x 4" x 4" square tubing saddle mounted to axle brace extending above, below, and behind the right rear axle.		
B11.4	The J-hook stow plate shall be a welded assembly, attached to upper stow assembly. The J-hooks shall contact both sides of the secondary boom and rest upon 2, 2 1/2" pucks welded integral with the secondary boom. The hooks to engage the secondary boom pucks shall not be more than 24" above the axle center line and not more than 42" behind the axle center line. (VENDOR REQUIREMENT) Vendor shall state the stow dimension above and behind axle center line.		

Line Number	SPECIFICATIONS REQUIRED RT50S		
H1.0	CUTTING HEAD		
H1.1	Deck shall be constructed of 100,000 PSI 3/16" steel with 3/8" thick side walls. (VENDOR REQUIREMENT) Vendor shall indicate manufacturers material, PSI, and type of welding.		
H1.2	Shall have full length replaceable abrasion resistant skid shoes.		
H1.3	Rubber safety shield shall be bolted to back side of deck.		
H1.4	Safety shield shall operate hydraulically from operators position and shall extend below the cutting plane. Safety door shall be constructed of 100,000 PSI Steel and meets all ANSI / SAE tests for rotary mowers. (VENDOR REQUIREMENT) Vendor shall indicate door protection type and maximum hydraulic pressure required to maintain door placement.		
H1.5	Head shall rotate 180° around outer boom.		
H1.6	Head shall weigh not less than 1080 lbs.		
H1.7	Head shall have 50" of actual cut.		

H2.0 MOUNTING

H2.1	Head shall mount to boom with a tube clamp assembly (specifically excluding, direct bolt on cutter heads). (VENDOR REQUIREMENT) Vendor shall supply line drawing of cutter head attachment.		
H2.3	Steel Tube shall not be less than 4" X 4" , Clamp shall have not less than 6 , 5/8", Grade 8 bolts, clamping assembly to tube.		

H3.0	<u>SPINDLE</u>		
H3.1	Spindle shall be (1) one piece forged and heat treated with integral 7 1/4" O.D. drive hub. (specifically excluding multi-piece shafts and direct drive spindle assembly), and 13 3/8" in overall length, with a 2 7/8" ID lower tapered roller bearing and a 2" upper tapered roller bearing, sealed in an oil bath.		
H3.2	Spindle shall be attached to hydraulic motor by a flexible coupler and dust cover. (Specifically excluding direct drive spindle assembly), (VENDOR REQUIREMENT) Vendor shall provide line drawing of spindle assembly.		
H3.3	Spindle shall have stationary wire wrap protection. (VENDOR REQUIREMENT) Vendor shall provide line drawing of wire wrap protection.		
H3.4	Spindle shall be mounted in sealed, double tapered roller bearing, grease reservoir with a O-ring plug and port to drain old grease. Assembly shall be filled with synthetic grease.		
H3.5	Spindle shall rotate 19,000 FPM blade tip speed at rated(2,300) tractor RPM. (VENDOR REQUIREMENT) Vendor shall indicate speed.		
H3.6	Spindle drive area shall be enclosed and fully protected from outside debris entering into the drive coupler.		

H4.0	<u>KNIFE CARRIER</u>		
H4.1	Shall be one piece, laser cut, 100,000 PSI, rectangular steel bar. The bar shall not be less than 8 "x 30 " x 1 1/2", and attached to spindle with (6) six, L9 bolts. The bar shall extend a minimum of 4 3/4" beyond the center of the knife mounting hole. (VENDOR REQUIREMENT) Vendor shall provide line drawing or exploded parts drawing of knife carrier.		
H4.2	Shall have 2 free swinging 360° 3/4" x 6 x 18 3/4", single edge, flat (no bends), knives.		
H4.3	Knives shall be attached by a 1 3/4" x 3 3/8" shouldered and keyed bolts, and hex lock nuts.		
H4.4	All knives shall be shot peened with a chamfered mounting bolt hole.		

H5.0	<u>BOOM DIMENSIONS (Specify Dimensions)</u>		
H5.1	Reach Out 30.0 feet		
H5.2	Reach Down 17.5 feet		
H5.3	Reach Up 26.9 feet		
H5.4	Reach In 7.3 feet		