

Bid specifications for 4-Wheel Drive Wheel Loader

Compliance

Engine

- yes___ no___ Six Cylinder, turbocharged, charge air cooled diesel engine and shall be designed and built by the manufacturer
- yes___ no___ Engine shall be certified to EPA Tier 3 emissions
- yes___ no___ Engine shall have a wet-sleeve cylinder liner design for improved cylinder cooling over dry sleeve and cast-in-bore design for improved cylinder and piston ring durability.
- yes___ no___ Engine displacement shall be no less than 6.8 liters (414 cu. In.)
- yes___ no___ Engine net peak power shall be no less than 146 hp (110 kW) @2000 rpm
- yes___ no___ Engine shall develop at least a 47% torque rise and should have at least 448 lb ft @ 1,600 rpm net peak torque
- yes___ no___ Fuel system shall be high-pressure, common rail
- yes___ no___ Daily check points shall be accessible from one side of the engine and shall be done from ground level
- yes___ no___ Under-hood engine air cleaner shall be dry type, dual element with a restriction sensor and in-cab restriction warning light
- yes___ no___ The loader will have under hood pre-screened air intake to minimize plugging
- yes___ no___ Access to engine will be open from both sides with side opening, full access service doors
- yes___ no___ Engine shall have no less than 30-micron rated primary fuel filter with water separator
- yes___ no___ Loader shall be equipped with a heavy-duty steel fuel tank guard
- yes___ no___ Service interval for the engine oil and filter shall be 500 hours
- yes___ no___ The unit should have an auto-idle, auto-shutdown feature for the engine as standard equipment.
- yes___ no___ The electrical system shall be 24 volt with 80 amp alternator

Cooling

- yes___ no___ Unit shall have a proportionally controlled, hydraulically driven, 90 degree-swing-out fan, standard equipment
- yes___ no___ The unit will have two-side access to all coolers
- yes___ no___ Air intake shall be pre-screened (3 mm perforations) for each cooling component
- yes___ no___ Cooling system shall be isolated from the engine compartment
- yes___ no___ Unit shall have a coolant recovery tank provided
- yes___ no___ Unit shall have a fan-guard
- yes___ no___ Fluid levels should be easily checked by sight gauges or overflow tank

Power Train

- yes___ no___ Unit shall have a torque-converter, power shift transmission - 4 forward, 3 reverse gears
- yes___ no___ The transmission shall be electronically controlled, adaptive, with load and speed dependent shift modulation
- yes___ no___ Shift modes shall be manual, auto to 1st or 2nd, kick down or kick up/down.
- yes___ no___ Service interval for the transmission oil filter shall be 2000 hours
- yes___ no___ The transmission clutch calibration shall be preformed from the cab monitor and shall have three clutch cutoff settings adjustable on the switch pad
- yes___ no___ Unit shall have two function joystick with steering column F-N-R gear-select lever, kick-down button on hydraulic lever. Will also have quick shift feature that allows pushbutton gear changes, one gear at a time
- yes___ no___ Sight gauge showing transmission fluid shall be at ground-level
- yes___ no___ Transmission filter restriction shall be displayed in the cab
- yes___ no___ The transmission shall be able to reach 22.4 mph in 4th gear and 14.3 in third gear with 20.5R25 tires

Axles/Brakes

- yes___ no___ The final drives shall be heavy-duty inboard planetary
- yes___ no___ The driveline shall not need lubrication, supplied with lube-for-life

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- yes___ no___ The loader shall have two brake pedals with an activation switch to allow left brake pedal to switch between a brake neutralizer or brake only function.
- yes___ no___ The service brake shall be hydraulically actuated, inboard, sun shaft mounted, pressure oil cooled, self-adjusting, single disc sealed from water, mud and dust contamination
- yes___ no___ The parking brake shall be automatic, spring applied, hydraulically released, oil cooled, multi-disc and sealed from water, mud and dust contamination
- yes___ no___ Rear axle shall not have less than 24 degree total oscillation, stop to stop, when equipped with 20.5R25 tires
- yes___ no___ The dipstick port and housing fill shall be at the top of the axle
- yes___ no___ The front axle shall be hydraulically actuated, disc clutch style, locking differential for maximum traction when required but with less tire wear than limited slip or no-spin differentials
- yes___ no___ An optional rear axle disconnect shall be available for reduced fuel consumption and improved ride while driving the loader on-road between sites
- yes___ no___ The loader shall have a standard hydraulic locking front with conventional rear and optional dual locking front and rear
- yes___ no___ The loader shall have a front axle with hydraulic locking differential
- yes___ no___ The loader shall have front and rear axles with hydraulic locking differentials
- yes___ no___ The loader shall have rear axle disconnect
- yes___ no___ The loader shall have automatic differential lock

Hydraulic System

- yes___ no___ Hydraulic filter shall be in the hydraulic tank with service interval of 4000 hours
- yes___ no___ The hydraulic fluid shall have a rated life of 4000 hours
- yes___ no___ The hydraulic system shall be pressure-compensating load-sensing for reduced fuel consumption and better fluid heating compared to open center hydraulic systems
- yes___ no___ Hydraulic tank capacity should be no less than 24 gallons for extended hydraulic fluid intervals and cooler system temperature
- yes___ no___ Unit will be provided with an automatic return to dig to level attachment
- yes___ no___ In cab adjustable automatic boom height kick out control
- yes___ no___ Unit will be provided with in-cab adjustable automatic boom return-to-carry control
- yes___ no___ Unit shall be equipped with either single-lever joystick or two-lever fingertip pilot-operated controls
- yes___ no___ A sight gauge will be provided for checking hydraulic reservoir fluid
- yes___ no___ Hydraulic pump shall be variable-displacement, axial-piston pump: closed-center, pressure-compensating system
- yes___ no___ Loader steering articulation angle shall be no less than 80 degrees, 40 degrees in each direction

Electrical

- yes___ no___ Two batteries shall be included, 24 volt, 950 CCA, 200-min. rated reserve
- yes___ no___ The unit shall have a solid-state electrical power distribution system using circuit board technology and solid-state switches
- yes___ no___ The unit shall have a keyless starting system with configurable security settings
- yes___ no___ The unit shall be provided with a master electrical disconnect switch
- yes___ no___ Cab will be pre-wired for a rotating beacon/strobe light
- yes___ no___ The in-cab switch module shall be sealed to keep out dirt, dust and airborne debris
- yes___ no___ Unit shall be equipped with driving lights with guards, turn signals and flashers, stop and tail lights. The tail lights shall be LED type mounted high up in the rear grille for protection from damage and better sight visibility and shall have a normal service life equal to the machine.

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- yes___ no___ Unit shall be equipped with gauges for: engine coolant temperature, transmission oil temperature, hydraulic oil temperature, and engine oil pressure
- yes___ no___ Unit shall have digital readout for: engine rpm, odometer, transmission gear direction indicator, speedometer, hour meter, fuel level and outside temperature
- yes___ no___ Unit shall have operator warning lights for: check engine, engine oil pressure, engine air restriction, battery voltage, transmission filter restriction, brake pressure, hydraulic oil filter, transmission fault, hydraulic oil temperature

Operator Station

- yes___ no___ Unit shall be equipped with canopy with ROPS/FOPS protection, and be multiplane isolation mounted for noise/vibration reduction
- yes___ no___ 3" retractable seat belt shall be provided
- yes___ no___ Steering wheel shall be tiltable
- yes___ no___ 3-point contact at all times at the front and rear of the loader and around the roof-line
- yes___ no___ The cab shall have continuous and unobstructed glass from roofline to floor for visibility in tight quarters.
- yes___ no___ A seat backrest extension will be standard
- yes___ no___ Cab shall have 2 cup holders, personal cooler holder/storage compartment for operator's manual, rubber floor mat

General Specifications

- yes___ no___ Unit shall be equipped with 20.5 R 25, 1 Star L-3 tires with multi-piece rims
- yes___ no___ Front tires shall be covered with fenders
- yes___ no___ Rear tires shall be covered with fenders
- yes___ no___ The counterweight shall be built-in
- yes___ no___ Unit will be provided with a hitch with locking pin
- yes___ no___ Unit shall have an articulation locking bar
- yes___ no___ Unit shall have vandal protection with lockable engine enclosures, right counterweight storage, battery box, filler access for radiator/fuel/hydraulic/transmission
- yes___ no___ The unit shall be provided with a loader boom service locking bar
- yes___ no___ Loader shall have reinforced articulation joints with double tapered roller bearings
- yes___ no___ Fuel tank capacity shall be no less than 86 gallons (325 L)
- yes___ no___ Operating weight with standard equipment, Pin-On GP Bucket with Bolt-On Edge, 2.75 cu yd (2.1 m³), 20.5R25 tires, ROPS cab, 175 lb operator and full fuel tank shall be no less than 27,077 lb (12282 kg)
- yes___ no___ Bucket breakout force shall be no less than 20,267 lbs with manufacturers standard z-bar with pin-on 2.75 cu yd pin on bucket and standard configuration
- yes___ no___ Ground clearance under the loader shall be no less than 15.7" (.4m)
- yes___ no___ Loader with attachment coupler and bucket shall have height to hinge pin no less than 12'5" (3.77 m)
- yes___ no___ Machine Full turn tipping load with standard Z-bar linkage and wide general purpose 2.75 cu yd (2.3 1³) shall be at least 19,698 LB (8935 kg).
- yes___ no___ Dump clearance at 45 degrees at full height shall be no less than 9 ft 1 in (2.77 m)
- yes___ no___ Reach at 45 degree dump, 7 ft clearance shall be no less than 4 ft 9 in (1.44 m)

Frames and Structures

- yes___ no___ Machine front frame shall be of a 4-plate design of four vertical plates extending from boom pivot pins reaching to the front axle to distribute boom loads on the axle. The design is superior to the two-plate frames
- yes___ no___ Loader bucket bell crank linkage shall be fabricated of high strength steel for increased durability and strength over castings.
- yes___ no___ Machine shall be equipped with an exterior mounted, ground level storage compartment

Optional configuration

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- yes___ no___ Optional automatic reversing fan drive with monitor adjustable 20 - 40 minute time increments
- yes___ no___ Unit has optional axle coolers
- yes___ no___ Optional Ride control, automatic with monitor adjustable speed settings
- yes___ no___ Optional High-lift loader linkage for additional 1'2" height to hinge pin, fully raised
- yes___ no___ Optional electrical corrosion-prevention protection for protection in corrosive environments such as salt handling
- yes___ no___ Optional centrifugal engine air intake pre-cleaner for heavy airborne debris or dust
- yes___ no___ Optional centrifugal cab fresh air pre-cleaner for heavy airborne debris and dust.
- yes___ no___ Optional heated mirrors for cold weather environments.
- yes___ no___ Optional environmental drains and oil sampling for the engine oil, transmission oil, hydraulic oil, and engine coolant.
- yes___ no___ Optional heated seat with headrest and independent height and weight adjustment for operator comfort and cold environments.