

WHEEL LOADER SPECIFICATIONS

The Carroll County Highway Department will be accepting bids for the sale of a 2012 621E Case wheel loader and the purchase of a new 2021 Wheel Loader meeting the following specifications. The Bids will be opened and publicly read at 2:00 p.m. on February 23, 2021 at the Carroll County Highway Department, 10735 Mill Road, Mt. Carroll, Illinois 61053.

The following specifications describe the minimum requirements for a rubber tire wheel loader. The equipment bid shall be new; identifying equipment manufactured the same year or succeeding year of the bid, of a current design and production model and available to the commercial market. Any additions, deletions or variations from the following specifications must be noted, or the bid will be rejected. Standard items appearing in the manufacturer's published specifications furnished by the bidder shall be included with the bid.

The Carroll County Engineer reserves the right to reject any or all bids and to waive informalities and/or technicalities.

2021 Rubber Tired Wheel Loader, 2.5 cubic yard

GENERAL

The wheel loader shall be a regular production model for which published specifications are available.

Machine modifications to meet the operational requirements of this specification shall be limited to the manufacturer's published standard and optional equipment.

All operating specifications are based on current SAE standards and shall be the basis for determining compliance with specified requirements.

The wheel loader shall have a minimum 166 net horsepower, diesel engine and JRB quick coupler to attach to county owned 2.5 c.y. bucket, hydraulic broom and hydraulic shouldering machine.

The wheel loader shall have a minimum operating weight of 28,000 pounds.

The wheel loader shall meet all OSHA and EPA requirements in effect on the date of bid opening and shall have lead-free paint.

ENGINE

The wheel loader shall have a 6-cylinder, turbocharged diesel engine with a minimum of 160 net horsepower at 1800 RPM. The engine shall provide a minimum SAE net torque rating of 500 ft-lbs. at 1600 RPM.

The engine shall also have the following:

- Parent metal bore
- Integral water pump
- Dual stage air cleaner
- 24-volt electrical system with master disconnect
- Radio-Ready (12-volt converter, for two-way radio connection)
- Minimum 120-amp alternator
- Single serpentine belt with automatic self-adjusting tensioner for alternator
- Mid mount cooling system
- Vertical spin-on engine oil filter
- 500-hour engine oil change interval
- Emission approved engine
- Advanced Engine Air Filtration to include Heavy Debris cooling system i.e., increased cooling fin spacing
- Hydraulic driven fan that can be reversed for cleaning and automatically reverses

- Added cooling module
- Full view pre-cleaner

FULLY SYNCHRONIZED TRANSMISSION

The wheel loader power train shall consist of a torque converter drive with a full power shift transmission.

The transmission shall also provide the following:

- Five forward speeds
- Three reverse speeds
- Minimum travel speed of 25 MPH
- Electronic forward/reverse shuttle shift
- Clutch disconnect feature through both brake pedals
- Down shift capabilities from 2nd to 1st gear
- Down shift control button located on top of the loader control lever for single lever-single spool or two lever-two spool configurations, or next to the two lever two spool or three lever-three spool configurations
- Auto shift transmission
- Down shift from 5th to 1st in auto shift mode
- Programmable to shift no higher than 2nd or 3rd gear
- Programmable to start out in 1st or 2nd gear in auto shift mode

AXLES

The wheel loader axles shall feature a heavy-duty design.

The axles also shall provide the following:

- Limited slip differentials (front and rear)
- Outboard planetaries
- Total rear axle oscillation of 24 degrees

BRAKES

The wheel loader brakes shall be fully hydraulic, wet disk brakes located within the outboard planetaries.

The brakes also shall provide the following:

- A separate system for the front and rear
- Oil cooled brakes
- Brakes operated by one of two brake pedals
- Disk parking brake located on the transmission output shaft
- Parking brake that is spring applied, hydraulically released (SAHR)
- Parking brake that is switch operated
- Parking brake that for safety, applies when electrical power is lost

LOADER AND LINKAGE FEATURES

The wheel loader arms shall be heavy duty and in-line.

The wheel loader arms also shall have the following features:

- Single bucket cylinder
- Dual lift cylinders
- Factory installed Ride Control
- Return-to-dig, return to travel, automatic height control

LOADER BUCKET

- The loader bucket will be provided by Carroll County. JRB quick-connect to be included on wheel loader.

FORK LIFT

The wheel loader shall include JRB quick attach fork lift arms.

PERFORMANCE

The specified wheel loader shall be a fully serviced unit that includes all standard equipment, ROPS cab with heater and air conditioning, 20.5 x 25 L2 12 ply PR tires, JRB quick attach, factory installed counterweight and full fuel tank. The unit shall weigh a minimum of 28,000 pounds.

The wheel loader performance shall include the following:

Loader

- Minimum SAE breakout force of 26,500 pounds force
- Minimum SAE straight tipping load of 23,300 pounds
- Minimum SAE full turn 40 degree tipping load of 18,050 pounds
- Minimum SAE operating load of 10,100 pounds
- Minimum SAE dump clearance at full height and 45 degree dump angle of 114 inches
- Minimum SAE dump reach at full height and 45 degree dump angle of 36 inches
- Minimum hinge pin height of 150 inches
- Minimum dig depth below ground of 3.0 inches
- Maximum loader lowering time (empty, power down) of 5.0 seconds
- Maximum loader lowering time (float down) of 4.5 seconds
- Maximum bucket dumping time (with rated bucket load) of 1.5 seconds
- Maximum bucket raising time to full height (with rated bucket load) of 5.5 seconds

Tractor Dimensions

- Minimum wheel base of 114 inches
- Maximum overall transport length of 286 inches
- Maximum height to top of cab of 134 inches
- Minimum 40 degree articulation

OPERATOR ENVIRONMENT

The wheel loader shall have a cab.

The wheel loader cab also shall include the following features:

- Top of cab mounted flashing strobe beacon (2.0m candlepower)
- AM/FM radio
- Sun visor
- Floor-mounted accelerator
- Transmission shift lever within easy reach of the operator
- All glass surfaces free of rubber moldings
- Side windows that fully open and secure to the rear of the cab
- Side windows that can be secured when partially opened
- Door that opens to the rear of the cab
- Front and rear windshield wipers and front and rear washers
- Intermittent front wiper
- Interior dome light
- Two interior rear-view mirrors
- Retractable seat belt
- Air suspension seat
- Single servo loader control lever with top-mounted down shift button on single loader control lever
- Forward/reverse power shift shuttle lever mounted on the steering column

- Audible operator warning system that sounds when the transmission is engaged and the parking brake is applied
- Instrumentation located in front of the operator
- On/off device to control activation of return-to-dig
- On/off device to control activation of height control
- On/off device to control activation of float control
- On/off device to control activation of return-to-travel
- On/off device to control activation of de-clutch
- On/off device to control activation of Ride Control
- Ride Control that de-activates when traveling below 3.2 MPH and reactivates when traveling above 3.2 MPH
- On-Board diagnostics that do not require the use of additional tools

HYDRAULICS

- 4-spool, Joystick and 2 Lever, 1st lever controls loader lift arms and bucket, 2nd and 3rd levers control auxiliary functions (Hydraulic Broom Attachment and shouldering machine attachment)
- Hydraulic lines to lift arm cross tube
- Auxiliary functions to include 2 levers in cab, 4 pin electrical connection, 2 each ¾” supply lines, and one ¾” return line located near the front of the lift arms and includes couplers (these lines must be capable of operating either of the following attachments: HTC hydraulic powered shouldering machine and JRB hydraulic powered broom).

SERVICEABILITY

The wheel loader shall be serviceable from ground level.

The wheel loader service also shall include the following:

- Parts manual
- Service manual
- All vertically-mounted filters
- Lubed-for-life u-joints
- Double tapered bearings in the articulation joint
- Articulation joint grease interval of 1,000 hours
- Minimum 50-gallon fuel tank
- Minimum 24-gallon hydraulic reserve
- Sight gauge for hydraulic oil level
- Sight gauge for transmission level
- All lube points at ground level
- Remote drain points for engine oil, engine coolant, and hydraulic oil
- One piece hood for complete engine access
- On-board diagnostics that require no special tools for transmission and other critical machine functions

WARRANTY

The wheel loader warranty shall include the following:

- Engine warranty of three years or 3,000 hours
- Power Train warranty of one year, unlimited hours

The County is trading in a 2012 Case 621E rubber-tired end loader with approximately 3,100 hours. The wheel loader may be inspected by contacting the County Highway Department office at 815-244-3195 for an appointment.

EQUIPMENT PROPOSAL

**ONE RUBBER TIRED WHEEL LOADER
SCHEDULE OF PRICES**

ITEM	DELIVERY POINT
One rubber-tired wheel loader Per enclosed specifications	F.O.B. MT. CARROLL AT HIGHWAY GARAGE

**QUOTE FOR SALE OF 2021
WHEEL LOADER**

SALES PRICE _____

LESS TRADE-IN 621E _____
(Minimum bid = \$48,500)

NET COST TO COUNTY _____

Dealer's Name _____

Agent's Name _____

Agent's Signature _____

Date _____

Estimated delivery date to County Highway Garage in Mt. Carroll _____

The bidder shall list, on a separate sheet of paper, any variations from or exceptions to the conditions and specifications of this bid. This sheet shall be labeled "Exceptions to BID CONDITIONS AND SPECIFICATIONS" and shall be attached to the bid.

The County reserves the right to purchase the new equipment and to sale the used equipment in a manner that is in the best interest of the County. All bids for the purchase of the used equipment shall constitute a firm offer from the buyer whether or not the purchase of the new equipment is purchased from the same.