



THE CORPORATION OF THE CITY OF NIAGARA FALLS

REQUEST FOR TENDER

**RFT22- 2019 - SUPPLY & DELIVERY OF
ONE (1) NEW FORESTRY CHIPPER TRUCK WITH CRANE**

SPECIFICATIONS

NAME OF COMPANY (DEALER): _____

ITEM/CATEGORY	CITY REQUIREMENTS	BIDDER TO STATE SPECIFICATIONS
Make		
Year	New	
Model		
Cab	Regular Cab with added Engine access Hood	
Seats	Air suspended bucket seats, with dual armrests, vinyl, grey in color	
Mirrors	Heated Mirrors	
Engine	330 HP 6 cyl. Diesel 1000 LB/FT @ 1400 RPM Cummins Turbocharged. On-Board Diagnostics Engine Block Heater	
Transmission	Automatic ; Allison 3000 series With PTO capabilities.	
Electrical	Extra Switches in Dash as per body builder, With throttle controls, and body builder interface.	
Add On's	Reverse Beeper alarm. Electronic Cruise Control AM/FM Stereo Radio Power door locks Power windows	
Wheel Base	Approx.200" with Proper stability for Crane. To be determined by Body Builder.	
C.A.	To accommodate Crane and Body described.	
Frame	High Tensile Steel frame; 120,000 lb. PSI	

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Suspension	18000 front 26000 rear	
GVW	44000 lb.	
Steering	Power Steering	
Tires	Front XZY-3 315/80R22.5, 20ply Radials Rear XDE M/S 11R22.5 16 ply Radials	
Brakes	Air Brake / Waco 4S/4M ABS	
Windshield Wipers	Delay type	
Windows & Mirrors	Power	
Heater & Defroster & Air Cond.	Factory Supplied	
Pintle Hook	Twenty ton Pintle hook installed @ 22" – must be equivalent to Buyers PH20, with two 7/8" safety eye bolts installed for safety chains. Vapour proof seven wire factory installed trailer harness to rear of vehicle, Cole Hersey # 1235 connector, with Voyager # 9030 electronic brake controller installed in Cab.	
Articulating Crane	Three section articulating crane, mounted behind cab, with a hydraulic lifting moment of the basic crane unit to be rated at no less than 108,300 ft. /lbs. for the three section crane. Horizontal, hydraulic boom extensions to 34'1" minimum horizontal. Lifting capacities with the main boom at 20° and with the 2nd crane boom at 0 degrees elevation. Capacities at the following minimums: <input type="checkbox"/> 11,300 lbs. @ 9'0" <input type="checkbox"/> 7,400 lbs. @ 14'6" <input type="checkbox"/> 5,100 lbs. @ 20' 0" <input type="checkbox"/> 3,700 lbs. @ 27'0" <input type="checkbox"/> 3,050 lbs. @ 33'6" The crane shall be fully hydraulic in all its functions, have no more than three (3) hydraulic boom extensions each powered by an individual cylinder equipped with sequence valve. Boom extensions without sequence valves are not allowed.	

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	<p>The individual extension cylinders shall be designed so as to keep the crane as straight as possible during a long extension, in detail, the first extension cylinder shall be centered over the outer boom section, the second section shall be as close to the center as possible, the third shall be opposite to the first, continuing to the end cylinder. The extension cylinders shall be free floating. Connected at one end only.</p> <p>Each boom section shall ride on 100% bronze side pads for long life, and shall be easily replaced when service is required. Teflon or composite pads are not acceptable.</p> <p>Each extendable section end shall be closed for additional strength and reinforced where appropriate.</p> <p>The crane shall be manufactured from high tensile strength 160,000 PSI steel and be all welded construction.</p> <p>A cast crane base and/or castings on the crane mast are not acceptable.</p> <p>Crane shall be designed to EIN 12999 classification HC1-S1 while lifting on hook.</p> <p>A double link rod system shall be provided. To allow for a 14° over-articulation of the second boom, and provide constant lifting curve throughout the lifting diagram. Respondent shall attach a 2 dimensional load chart to illustrate the performance.</p> <p><u>STABILIZATION:</u></p> <p>Crane base stabilizers shall be of the hydraulic out and hydraulic down type and manual swing up action. Shall have a maximum spread of 235".</p> <p>The stabilizers shall be controlled at either side of the vehicle by a hydraulic selector valve that is well marked for easy operation. The selector valve shall be spring operated with an automatic return to neutral feature.</p> <p>The operation of all stabilizer functions shall be fully proportional and smooth in nature.</p> <p>Each stabilizer leg shall be equipped with an 8" round footplate connected by a ball foot on each leg to lower the ground pressure exerted by the crane.</p> <p>Two supplementary 18" x 18" removable and composite foot plates shall be provided, with holders in convenient locations.</p> <p>Bidders shall provide with their bid response: Detailed conceptual installation drawings of the proposed installation; and truck stability</p>	
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	<p>calculation using the "Trailer Win" software program and detailed weight distribution.</p> <p>Failure to supply such, with the bid submission, shall disqualify the prospective bidder. Required calculations supplied???</p> <p>The crane shall be stable within a full 360° arc, electronic de-rating of the crane over the front of the cab is allowed.</p> <p>Stabilizer motion alarm shall be supplied.</p> <p>Crane rotation shall be of the rack and pinion type providing a maximum rotation angle of 400 degrees</p> <p>Rotation torque of not less than 18,440 ft. /lbs.</p> <p>Rotation gears shall ride in an oil bath for long life</p> <p>Rotation shall have a centralized greasing manifold.</p> <p>Proportional manual controls shall be at the crane base on one side of truck.</p> <p>Controls shall be fine metering, and allow for smooth multiple and simultaneous functions.</p> <p>Control handles return to neutral when released.</p> <p>Provide and install two additional control valves for boom tip hydraulic tools, with oil service to the boom tip.</p> <p>Main Lift and Knuckle cylinders shall be equipped with pilot operated counter balance valves.</p> <p>The three extension cylinders shall be plumbed into a pilot operated counterbalance valve flanged to the first extension cylinder.</p> <p>All crane hydraulic fittings shall be flat faced "O" ring fittings, JIC fittings are not allowed.</p> <p>All hoses are to be wire reinforced meeting minimum burst pressure requirements.</p> <p>System oil shall be supplied from a crane mounted oil tank, be equipped with inside baffles, return filter, breather cap, and sight gauge.</p> <p>The oil tank shall be 21 US gallons minimum and shall be installed in the crane base area.</p> <p>The hydraulic system shall deliver not less than 12.0 GPM and 5,075 PSI.</p> <p>A thermostatically controlled oil cooler shall be installed within the crane installation envelope.</p> <p>A hydraulic piston pump shall be directly mounted to the power take-off.</p>	
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	<p>Engine shall preferably operate at 1,000 RPM during crane operation.</p> <p><u>ELECTRONIC OVERLOAD SAFETY DEVICE:</u></p> <p>The crane shall be equipped with an Electronic Overload Safety Device enabling the operator to work with the crane under safe conditions, thus avoiding possible overloading situations.</p> <p>The system shall have a control panel located at the ground controls with the following standard features:</p> <ul style="list-style-type: none"><input type="checkbox"/> Main on/off switch with warning lamp, and hour meter<input type="checkbox"/> Reset push-button<input type="checkbox"/> Emergency stop push button with warning lamp<input type="checkbox"/> Acoustic warning alarm with on/off switch<input type="checkbox"/> 90% and 100% capacity lamp and warning alarm<input type="checkbox"/> Low oil warning lamp. <p>The overload system shall monitor conditions of overload and shall allow functions that reduce load radius, as well as rotation of the load when an overload conditions exists.</p> <p>Emergency operating shall be used only in those cases when the lowering of the load shall help to prevent a more dangerous situation.</p> <p>This function can be operated by pushing the reset button located at all control stations. Then all functions: main boom up/down, second boom up/down, rotate, booms retraction, are available except for boom extension.</p> <p><u>FLOW PROPORTIONING POWER INCREASE:</u></p> <p>The crane shall be equipped with FPI system that when manually selected shall decrease the crane operating speed by approximately 25%.</p> <p>The system shall increase the lifting power of the crane due to less load oscillation.</p> <p>The system shall be engaged by a toggle switch located on the radio remote controller.</p>	
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	<p><u>OIL REGENERATION VALVE:</u></p> <p>Crane shall be equipped with an oil regeneration valve allowing higher extension speeds. Boom extension speed shall increase by approximately 35%.</p> <p>The valve shall be controlled by a manual toggle switch located on the radio remote controller.</p> <p><u>RADIO REMOTE CONTROL SYSTEM:</u></p> <p>Provide a Scanreco factory installed, fully proportional (8) function radio remote control system.</p> <p>The unit shall allow simultaneous operations for all crane and attachment functions.</p> <p>The radio controller shall be fully proportional and allow multi-functions to be performed simultaneous. Electro-hydraulic solenoids shall be mounted directly to the manual control bank (see manual control section).</p> <p>The remote system shall be capable of being programmed to the exact minimum-maximum speeds for each function as desired by the operator.</p> <p>The radio controller shall be of light weight, have fully proportional paddle lever control handles that operate in a linear fashion</p> <p>Remote control function shall be activated by an electric diverter switch located at the crane base</p> <p>Two interchangeable batteries shall be supplied. Each fully charged battery shall have a minimum of 4 hours of “down-pedal-full-throttle” use.</p> <p>The battery charger shall be mounted in the cab with automatic shut off and status indicator.</p> <p>50 feet of direct power cable for emergency use shall be provided.</p> <p>An adjustable body strap, camera style shall be provided.</p> <p>Provide and install a radio remote controlled work light on the second (knuckle) boom.</p> <p><u>BOOM TIP HYDRAULICS:</u></p> <p>Provide and install two additional valve sections at the crane base valve bank that will provide hydraulic controls to the boom tip tool(s).</p> <p>Provide a hose track system from the crane base to the boom tip.</p>	
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	<p>The hose track system shall operate the boom tip tools from the crane base and the radio remote controller. Provide quick disconnect tool fittings. Provide and install one Kinshofer model KM 641 HPX- 420. With .27 cu.yd. capacity grapple, with hydraulic rotator. The Kinshofer tool will be stowed within the confines of the body when connected to the crane and when in the "laid out" horizontal position, or dismounted from the crane when the crane is stowed in the "figure four" position.</p> <p><u>CRANE DIMENSIONS:</u></p> <p>Crane height, when measured above the mounting plate shall be 90" maximum. Crane width shall be 98" maximum. Basic crane length, when stowed in the figure four position shall be 31" maximum.</p> <p><u>DUMP BED BODY & INSTALLATION:</u></p> <p>All steel, approximately 96" wide x 144" long dump body. Front headboard, 60" high, 10 gauge steel reinforced facing with 2" x 4" x 3/8" formed rectangular tubing. Stationary steel 12 gauge side boards, reinforced with 2" x 4" x 3/8" formed rectangular tubing uprights, on 24" centers. Side boards shall be 60" tall. Steel side boards shall be placed on the outside of the uprights, allowing for a smooth interior finish. Floor to be all steel 3/16" thick with 4" channel cross members on 12" centers. With a 45° angle 3/16" plate welded continuously to the sides of the upright side boards, allowing for easy cleanout of debris. Underbody hydraulic dump hoist with cab controls. Hoist shall be engineered to lift a minimum of 12,000 lbs. payload to at least 45° angle. A diverter valve to select between the cranes and dump functions shall be located next to the crane base. Lights and wiring harness shall be LED style and meet all FMVSS requirements. Rear tail lights are under body style. Provide an all steel removable 2 piece canopy top/chip deflector.</p>	
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	<p><u>DIMENSIONS:</u></p> <p>Shall be 96" wide X 12" tall and overall length shall be 72". Provide "D" rings for lifting off with the crane.</p> <p>Provide and install two 48"L x 24"H x 18"D all steel underbody tool compartments located in front of the rear wheels. Compartments shall be lockable, keyed alike and have weather stripping. Compartments painted black.</p> <p>Provide and install a 20,000 lbs. towing capacity combination pintle/ball hook.</p> <p>Provide and install two swing style "D" rings, and 7 pin trailer light receptacle.</p> <p>Provide and install a 1/2" tow plate with ICC underride protection. All lights and reflectors shall be LED and to DOT requirements.</p> <p>Provide and install an all steel subframe riser. Materials shall be 3" x 8" x 3/8" steel tubing.</p> <p>All welds shall be continuous. Installer is required to calculate the optimum subframe height to insure a minimum of 12" ground clearance when the stabilizer legs are stowed in a downward fashion.</p> <p><u>PAINTING SECTION:</u></p> <p>Cab chassis: Standard manufacturers white.</p> <p>Dump bed body, canopy and headboard exterior and interior: High-gloss white to match cab.</p> <p>Undercoating on underside of dump bed.</p> <p>Under dump bed, hitch plate, chassis area: Semi-gloss black.</p> <p>Articulating crane: Safety yellow.</p> <p>Grapple: standard factory color</p> <p><u>WARRANTY, MANUALS, TRAINING:</u></p> <p>Chassis warranty shall be standard factory for vocational trucks</p> <p>Warranty for the crane shall be one year parts and labor with all warranty work performed on site for the first 90 days of the warranty period, and at a location designated by the buyer. The completed unit shall include all standard equipment, unless superseded by this specification.</p>	
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NAME OF COMPANY (DEALER): _____

	<p>Successful crane vendor shall have a full time, company owned, service facility within 100 KM of the City of Niagara Falls.</p> <p>Vendor shall employ a minimum of one full time, factory trained field service mechanic and fully stocked service truck able to respond within 24 hour notice.</p> <p>Subcontractors are specifically not allowed.</p> <p>Provide two operators and two service manuals for the crane.</p> <p>Successful crane vendor shall provide eight (8) hours of on-site operator familiarization. The instructor shall be an NCCCO certified operator for knuckleboom cranes. Provide copy of certification with bid submission.</p> <p>Prospective crane vendor shall provide, with bid submission, detailed CAD/CAM layout drawings and weight distribution calculations performed on the Trailer Win software program.</p> <p>Failure to do so shall disqualify prospective vendor.</p> <p>Weekly update photographs (digital format) may be required of the vendor if requested.</p>	
Cabinet	<p>Street side compartment with single door 18"W x 50"H x 26"D</p> <p>All compartment doors 16 GA satin-coat steel</p> <p>All handles must be high quality stainless steel</p>	
Additional included	<p>Two safety cone holders</p>	
Pre-Delivery Inspection	<p>City has the right to a Fully Assembled Pre-Delivery Inspection.</p>	
Manuals	<p>Supply Complete of Service / Repair Manuals</p>	
License	<p>City of Niagara Falls will License</p>	