

EAST MISSISSIPPI COMMUNITY COLLEGE
BID SPECIFICATIONS FOR A COMPACT TRACK LOADER

To be Presented on Solicitation Date

Vendor Company Name: _____

Representative Name (Printed): _____

Compliant?

BASIC SPECIFICATIONS:

- Y___ N___ Net power using SAE 1349 shall be at least 72.9 hp (54.4kW).
- Y___ N___ Gross power using SAE J1995 shall be at least 74.3 hp (55.4 kW).
- Y___ N___ Operating weight shall be 10688 lb (4848 kg) when equipped with 17.7 in (450 mm) wide tracks.
- Y___ N___ Machine shall have a maximum length of 146.2 in (3714 mm) with bucket on ground and 117.9 in (2995 mm) without bucket on ground.
- Y___ N___ Machine width shall be 78.0 in (1981 mm) when equipped with 17.7 in (450mm) wide tracks.
- Y___ N___ Machine shall have a maximum overall height of 158.1 in (4015 mm).
- Y___ N___ The height to the top of the cab shall be 83.2 in (2113 mm).
- Y___ N___ Machine shall have a minimum ground clearance of no less that 8.9 in (226 mm).

ENGINE

- Y___ N___ Engine shall be a 3.3 L, Turbo Diesel Engine, meeting Tier 4 Final and EU Stage V emissions standards.
- Y___ N___ The engine emissions solution shall incorporate the latest Tier 4 Final emissions technology which captures particulate matter by utilizing a wall flow filter design.
- Y___ N___ Engine shall be direct fuel injected, turbocharged, liquid cooled and shall have four cylinders.
- Y___ N___ Engine shall have a total displacement of not less than 203 in3 (3.3 L).
- Y___ N___ The engine shall be equipped with an alternator that has a charging capacity of at least 80 amperes.
- Y___ N___ Glow plugs shall be provided for improved starting in cold weather (not ether starting aid).
- Y___ N___ Air filtration shall be accomplished via a radial seal air cleaner with a secondary backup, as well as a convenient in-cab air flow restriction indicator. The air intake system shall be designed to accept an external pre-cleaner.
- Y___ N___ The machine shall not have any cooling cores or condenser mounted or stacked on top or below the radiator, restricting cooling capability.

- Y___ N___ The engine and hydraulic oil coolers shall have an ambient temperature cooling capacity of 109 degrees F (43 degrees C).
- Y___ N___ The cooling system shall pull air in from the rear of the machine and exhausted through the top of the cooling package, directing it away from the operator and site bystanders.
- Y___ N___ The cooling fan shall not be belt driven, but should be powered by a hydraulic motor that is demand driven (activated by an electrical solenoid) based on climate and heat loads. When fan is active it must maintain constant airflow and fan speed, even under a load that would cause the engine to lug.
- Y___ N___ The machine shall have an electronic torque management system that automatically destrokes the hystat pump to reduce the chance of stalling the engine during lugging.
- Y___ N___ There shall be no more than two belts driven off the engine.
- Y___ N___ The machine shall have braided, color-coded and numbered wiring harness for easy diagnostics.
- Y___ N___ The machine shall have sealed pin connectors to prevent dirt and moisture infiltration.
- Y___ N___ The machine shall be equipped with a battery that has at least 12 volts and 850 CCA for cold start capabilities in 32 degrees F (0 degrees C) climate.
- Y___ N___ Battery Disconnect switch (master switch) must be available which will provide a basic level of machine security and prevent battery drain during periods of inactivity.
- Y___ N___ The machine shall be equipped with a water-in-fuel sensor and in cab indicator.
- Y___ N___ Exhaust flow and cooling package airflow should be mixed to reduce temperature of exhaust gases leaving the exhaust stack.

POWERTRAIN/TRANSMISSION

- Y___ N___ Two hydrostatic axial piston drive pumps shall be splined directly to the engine via a flexible coupling for maximum efficiency, reliability and serviceability and shall power the final drive motors, driving the tracks.
- Y___ N___ Hydrostatic drive pumps shall be contained in a mono-block housing for maximum reliability and durability.
- Y___ N___ The drive system shall be of an external positive drive with steel on steel contact of tooth and sprocket engagement.
- Y___ N___ Electronic foot throttle shall be provided to allow the operator to match engine speed to a task. The foot throttle shall allow the operator to vary engine speed and minimize fuel consumption. The machine will have the capability to electronically smooth foot throttle control while operating over rough ground.
- Y___ N___ An electronic torque management feature shall allow maximum power to the tracks while minimizing engine stalling.
- Y___ N___ Maximum forward and reverse travel speed 1 shall be at least 4.5 mph (7.2 kph).
- Y___ N___ Maximum forward and reverse travel speed 2 shall be at least 8.3 mph (13.3 kph).
- Y___ N___ Must have planetary gear reduction final drive.
- Y___ N___ 2 Speed must be standard.

STEERING

- Y___ N___ The machine shall be equipped with a single, electrically operated joystick that controls the forward/reverse and steering directions.
- Y___ N___ Machine must be equipped with a selectable pattern control changer to operate in either "ISO" Pattern or "H" Pattern.
- Y___ N___ Machine shall have an air ride seat with seat mounted / adjustable joystick controls.
- Y___ N___ Full turning radius from the center/coupler without a bucket shall be no greater than 55.5 in (1410 mm).

BRAKES

- Y___ N___ Machine shall have a spring applied, hydraulically released parking brake that shall automatically engage when arm bar is raised, and shall be designed to hold machine static at any point on a 2 to 1 slope.

HYDRAULIC SYSTEMS

- Y___ N___ The machine shall be equipped with a single, electrically operated joystick that controls the lift, lower and tilt functions.
- Y___ N___ The hydraulic pumps shall be driven directly off the engine for maximum hydraulic performance and reliability-no belts shall be used.
- Y___ N___ Machine shall be equipped with auxiliary hydraulics activated by a thumb switch located on the right joystick.
- Y___ N___ The machine shall be equipped with a hydraulic tank that has an anti-cavitation feature.
- Y___ N___ The machine shall be equipped with a hydraulically driven fan, eliminating maintenance costs and friction losses associated with a belt.
- Y___ N___ The High Flow hydraulics of the machine shall be at least 32 gal/min (121 L/min).
- Y___ N___ The High Flow hydraulic pressure of the machine shall be at least 4,061 psi (28,000 kPa).
- Y___ N___ The High Flow hydraulic horsepower of the machine shall be at least 76.0 hp (57 kW).
- Y___ N___ Dual, variable-displacement, axial piston pumps shall be driven off the engine and provide hydraulic flow to the drive motors via a closed loop system.
- Y___ N___ Machine shall be equipped with abrasion resistant Tough Guard hoses and O-ring face seals help assure a leak free system.
- Y___ N___ Standard auxiliary hydraulics to power tools shall be available through self relieving quick connect hydraulic couplings that are rigidly mounted to the loader arm.
- Y___ N___ The drive and implement hydraulic pumps shall be electrically actuated and may not be actuated via any mechanical linkages.

AXLES

Y___ N___ Machine shall have 4 heavy-duty torsion axles to suspend each side of the undercarriage from the machine frame and shall be shock absorbing.

UNDERCARRIAGE

Y___ N___ The track shall consist of molded rubber with embedded steel bars that span the width of the track.

Y___ N___ The track shall consist of continuous wound steel cables that provide tensile strength so that the track does not stretch.

Y___ N___ The undercarriage shall not be directly mounted to the machine frame, but shall instead be suspended via four independent torsion axles in order to minimize machine stresses and maximize traction.

Y___ N___ The undercarriage shall contain single flange steel rear idlers in order to reduce material buildup and improve clean out.

Y___ N___ The undercarriage shall contain dual flange steel front idlers in order to provide a smoother ride.

Y___ N___ An optional undercarriage configuration shall be available that provides front and rear triple flange steel idlers.

Y___ N___ Machine ground pressure shall not exceed 5.2 psi (36.1 kPa).

Y___ N___ Overall length of track shall be 83.8 in (2129 mm).

Y___ N___ Length of track on the ground shall be 64.2 in (1630 mm).

Y___ N___ Machine weight shall be evenly distributed across the entire width and length of the track via multiple sets of rollers to disperse pressure, and maximize traction and flotation.

Y___ N___ Undercarriage shall consist of an open design that allows easy cleaning of components.

Y___ N___ Elevated positive track shall keep drive components away from ground debris.

OPERATOR STATION

Y___ N___ The machine shall be equipped with deep skid-resistant, self-cleaning steps.

Y___ N___ The machine shall be equipped with an High Back, Heated, "Air Ride" Suspension Seat with lumbar and recline adjustments.

Y___ N___ The machine shall have a one-piece sealed & pressurized cab design.

Y___ N___ The machine shall be equipped with both a hand and a foot throttle.

Y___ N___ The machine shall be equipped with adjustable boom / bucket response control, adjustable drive response control as well as travel speed control (creeper).

Y___ N___ The machine shall be equipped with a single, electrically operated joystick that controls the lift, lower and tilt functions.

Y___ N___ The machine shall have a retractable high visibility seat belt.

- Y___ N___ The machine shall come standard with an arm bar that when lifted, automatically engages the machine parking brake for added operator comfort and safety.
- Y___ N___ The machine shall be equipped with ROPS/FOPS protective structures rated to at least (14,771 lb) 6700 kg.
- Y___ N___ Cab door must be equipped with a 2 quick release handles to remove front door that require no use of tools to remove.
- Y___ N___ The machine shall have a heater coil rated capacity of at least 23,518 Btu (5930 kcal).
- Y___ N___ The machine shall have audible warning alarms for engine coolant temperature, engine oil pressure and hydraulic oil temperature.
- Y___ N___ Machines equipped with a door shall be equipped with a hydraulic lockout mechanism that prevents loader arm movement with door in open position.
- Y___ N___ Machine shall be equipped with a convex, rearview mirror for superior visibility to the rear and sides of the machine.
- Y___ N___ Machine shall have removable side windows that require no use of tools to remove for easy cleaning.
- Y___ N___ Side windows shall have two sliding panes, front and rear, to provide protection from the elements and allow fresh air ventilation.
- Y___ N___ Standard forward halogen work lights shall be adjustable for better visibility.
- Y___ N___ Machine shall be equipped with 2 adjustable, cab mounted front LED working lights and 2 frame mounted, rear LED working lights.
- Y___ N___ Machine shall be equipped with a standard USB charging port.
- Y___ N___ Air conditioning condenser shall not be mounted on any other cooling core(s), and have independent electrical cooling fans, separate from the main cooling fan.
- Y___ N___ The machine shall have an 5 inch, full color, LCD display with video capability.
- Y___ N___ The machine shall have up to 50 individual security codes where the operator preferences are retained for each code. The master code provides the capability to monitor each individual code/operator for fuel usage, hours of operation, as well as events and diagnostics.
- Y___ N___ The machine display shall provide on screen adjustment capability for creep setting, ride control activation speed, top speed limit setting, English/Metric units, choice of 6 languages, choice of 4 backgrounds, and choice of 4 gauge styles.
- Y___ N___ Machine shall have a rear view camera.
- Y___ N___ Machine shall have cellular based tracking providing machine hours and machine location.
- Y___ N___ Machine shall come standard with an Anti-theft Security System with a 6 button keypad.
- Y___ N___ Machine shall have Bluetooth capability and Microphone integrated with an AM/FM/Weather Band Radio with USB and Auxiliary Input Jack.

LOADER LINKAGES / STRUCTURES

- Y___ N___ Loader linkage shall be of a vertical lift style.
- Y___ N___ Loader linkage shall be equipped with a split style D-ring for securing work tool auxillary hoses.
- Y___ N___ The pins shall have countersunk grease fittings to protect them from damage.
- Y___ N___ The machine shall be equipped with two tilt cylinders, protected by a heavy-duty torque tube.
- Y___ N___ The machine shall have a tipping capacity of at least 8255 lbs (3750 kg).
- Y___ N___ Rated operating capacity at 35% tipping load shall be no less than 2890 lb (1315 kg).
- Y___ N___ Rated operating capacity at 50% tipping load shall be no less than 4130 lb (1880 kg).
- Y___ N___ Rated operating capacity with counterweight shall be no less 4370 lb (1985 kg).
- Y___ N___ The machine shall have a dump angle of at least 51.0° for superior bucket cleanout.
- Y___ N___ The machine shall have an arched transition to the coupler for increased dump clearance.
- Y___ N___ Vertical lift linkage shall provide visibility under the loader arm to left & right sides when bucket is in the carry position.
- Y___ N___ Cantilevered pins in the loader linkage shall be forged and induction hardened, and shall be the same diameter all the way through using a flagged end to secure them to one side, allowing them to rotate in the corresponding bore.
- Y___ N___ The machine shall have a maximum hinge pin height of at least 125.1 in (3178 mm).
- Y___ N___ Reach at maximum lift and dump shall be at least 30.0 in (761 mm).
- Y___ N___ Clearance at maximum lift and dump shall be at least 94.0 in (2387 mm).
- Y___ N___ Rack back angle at maximum height shall be 84.0 degrees.
- Y___ N___ Maximum reach with arms parallel to the ground shall be 50.0 in (1270 mm).
- Y___ N___ Tilt cylinder breakout force shall be at least 7291 lb (3307 kg).
- Y___ N___ Lift cylinder breakout force shall be at least 5510 lb (2499 kg).
- Y___ N___ Electronic work tool return to dig feature and electronic work tool positioner shall be available.
- Y___ N___ Electronic Self Level (raise only) with electronic lift cycle snubbing shall be available.

WORK TOOL OPTIONS

- Y___ N___ Machine shall have a universal coupler interface to easily change work tools.
- Y___ N___ The quick coupler shall be activated from inside the cab to allow engagement and disengagement without needing the operator to exit the machine.
- Y___ N___ The machine shall have self relieving auxillary quick disconnects that connect under pressure for easier connection to work tools

SERVICEABILITY

- Y___ N___ Maintenance points shall be grouped in easily accessible, ground level locations.
- Y___ N___ The machine shall be equipped with grouped filter configuration with fuel/water separator filter and hydraulic oil filter being cartridge style.
- Y___ N___ The engine shall be mounted lengthwise for better accessibility.
- Y___ N___ The radiator and hydraulic oil cooler shall be protected by a guard/grill which shall tilt up to gain access to the cores.
- Y___ N___ The machine shall be equipped with sight gauges on the hydraulic tank and the radiator.
- Y___ N___ The machine shall be equipped with standard system pressure and fluid analysis test ports.
- Y___ N___ The machine shall have an electronic port allowing electronic machine diagnostics.
- Y___ N___ The machine shall have a cab that tilts to the rear by an individual using hand tools and shall expose all pumps, motors, valves and lines. Cab shall be held in place when tilted by a self latching mechanism.
- Y___ N___ The machine shall not have any required daily maintenance points that require lifting of the cab structure.
- Y___ N___ Machine shall have a vented, steel, rear door, with a bumper that slightly protrudes beyond the door, in order to prevent damage to engine compartment components.
- Y___ N___ The rear door shall open to provide for easy access to both sides of the engine without the need for hand tools.
- Y___ N___ A removable belly pan section in the floor of the machine's lower frame shall provide excellent access for periodic cleaning
- Y___ N___ All filters shall be easily accessible from the ground, which makes routine service quicker and virtually spill free.

MINIMUM SERVICE FILL CAPACITIES

- Y___ N___ The machine shall have a hydraulic oil tank capacity of at least 10.3 gal (39 L).
- Y___ N___ Hydraulic system shall hold 13.7 gal (52 L).
- Y___ N___ Fuel tank shall hold 27.7 gal (105 L).
- Y___ N___ Engine crankcase shall hold 3.0 gal (11 L).
- Y___ N___ Engine cooling system shall hold 3.7 gal (14 L).

OWNING AND OPERATING COSTS

- Y___ N___ Extended life coolant shall be standard
- Y___ N___ The machine shall have recommended 500-hour engine oil change intervals.
- Y___ N___ The machine shall be equipped with hydraulic oil that can achieve 6000 hour life with regular oil sampling and recommended filter changes.

ADDITIONAL

- Y___ N___ 46" carriage with 48" forks shall be included.
- Y___ N___ Vibratory Compactor shall be included.
- Y___ N___ Hammer attachment shall be included with chisel tool.
- Y___ N___ Landscape rake shall be included.
- Y___ N___ 80" general purpose bucket shall be included.