

## **Bid specifications for MDCC Crawler Dozer**

### **Engine**

The crawler engine shall meet EPA Final Tier 4/EU Stage IV emissions. It will have a minimum of 80 SAE net hp (60 kW), with four cylinders and be turbocharged. It shall be a wet-sleeve cylinder liner design for maximum cooling and engine life.

The pressurized liquid cooling system shall have a water pump driven with an automatically adjusting belt. Radiator shall be filled with manufacturer's approved anti-freeze solution that provides protection to at least -34° F (-37° C).

The fuel system shall have a fuel shut-off valve to prevent fuel loss during filter changes. The system shall have a water separator located between the fuel tank outlet and the fuel filters.

The exhaust after treatment device shall consist of both a Diesel Oxidation Catalyst (DOC) and a Diesel Oxidation Catalyst (DPF). Both the DOC and DPF shall be serviced independently in the event of a repair or replacement.

Dozer engine shall have a programmable automatic engine shutdown system

Dozer shall have an automatic turbo cool-down system that protects the engine from damage.

The primary and secondary fuel filters shall be remote mounted outside of the engine compartment for easy access and a reduced risk of fuel leaks near the engine.

Optional severe duty fuel filter - water separator will be available if required which will include a heating element to prevent freezing of separated water

The engine lubrication shall be of adequate design to permit operation on slopes up to 45° in any direction. The engine oil and filter change interval shall be 500 hours

### **Electrical**

Batteries shall have a minimum capacity of 950 CCA, 190-min. rated reserve. Electrical system must be 24 volts

Unit shall have Grille Mounted (2), Rear Mounted (2), and 2 rear reflectors

### **Transmission**

Dual-path hydrostatic drive with infinite speed capability, dynamic braking, full power turns and counter rotation is preferred. The dozer shall have minimum forward speed of 5.0 mph (8.0 km/h) forward and reverse. Design must permit unrestricted speed and direction changes under full engine rpm and load.

A load sensing system that works to downshift and upshift automatically

The transmission system shall be sealed and have a reservoir independent of hydraulic system. There shall be adequate filtration and cooling of the hydraulic system to support 2,000 hour oil and filter changes. Oil shall be multi-viscosity engine oil.

Transmission shall have the ability for the operator to easily adjust operating parameters such as: FNR shift rate, Steering rate, Steering Modulation, Decel pedal response and Reverse Ratio.

Dozer shall have an automatic hill hold feature that automatically applies the parking brake when the transmission is in neutral and motion is detected. Parking must automatically be released upon shifting from neutral.

A sight gauge shall be provided for checking the hydrostatic fluid.

Transmission filter restriction shall be displayed in the cab

The single pedal decelerator will allow the operator to choose between slowing travel speed and engine rpm or travel speed only to help maintain traction without affecting engine power and hydraulic response. Fully depressing the pedal applies the brakes.

### **Steering**

Hydrostatic drive is preferred for full power turns and counter rotation. Steering shall be fully modulated at all speeds to provide smooth operation. Steering brakes shall be oil-cooled .

### **Final Drive**

Triple reduction, bull gear final drives must be isolated from the track frames.

### **Tracks and Undercarriage**

Six track rollers with front and rear track guides and sprocket guards. The dozer shall have one carrier roller on each side. Sealed and life-time lubricated rollers, idlers and track chain.

track gauge 1651 mm (65 in.) for LGP. The track length on the ground shall be a minimum 2184 mm (86 in.). Minimum (24 in.) for LGP, single bar grouser track shoes. Ground pressure not to exceed 31.3 kPa (4.5 psi) for LGP. Minimum ground clearance of 329 mm (13 in.).

### **Dozer**

The dozer shall be a hydraulically actuated, inside mounted all hydraulic blade (power-angle-tilt PAT). The blade hydraulic system shall provide raise, lower, tilt, angle and float. The blade capacity shall be a minimum (per SAE J1265) of 2.6 yd<sup>3</sup> (2.0 m<sup>3</sup>) for an LGP machine.

The dozer tilt shall be a minimum of 399 mm (15.7 in.). It shall have a minimum raise height of State size in. (State size mm) and dig depth below ground of State size in. (State size mm). The minimum blade height 894 mm (2 ft. 11 in.) for LGP, and blade width of 3150 mm (124 in.).

The dozer moldboard must be equipped with a three-piece replaceable cutting edge. The dozer shall have adjustable blade pitch from 52° cutting edge angle in the back position to 60° in the forward position .

### **Hydraulic System**

The system shall have a maximum flow of 21 gpm (80L/min.) flow and provide adequate cooling .

The hydraulic system shall be sealed and have a reservoir independent of transmission system. There shall be adequate filtration and cooling of the hydraulic system to support 2,000 hour oil and filter changes. Oil shall be multi-viscosity engine oil.

All hoses shall be of an o-ring seal design to reduce leakage and facilitate repairs.

If equipped, the grade control interface shall be factory installed regardless of machine control supplier.

### **Operator's Station**

The operator seat shall have adjustments for operator height and weight, and lumbar adjustment in the backrest.

The cab shall include air conditioning with two fresh air filters and a separate recirculation air filter for operator protection .

Unit shall have dash mounted gauges and/or monitoring system that will include: transmission temperature, engine coolant temperature, engine oil pressure, transmission charge pressure, hydraulic filter restriction, transmission filter restriction, electric voltage, engine RPM, transmission speed range/direction and electric hour meter.

The cab shall have continuous and unobstructed glass from roofline to floor for visibility in tight quarters.

Cab shall have two cup holders. Personal cooler holder/storage compartment for operator's manual, and a rubber floor mat

The operator station shall have an electronic monitor system with audible and visual warning for: low alternator voltage; engine oil pressure; engine coolant temperature; indicator; hydraulic oil filter restriction; transmission oil filter restriction; transmission oil temperature; engine air restriction indicator; fasten seat belt and park brake warning.

3" retractable seat belt shall be standard equipment

The footrests and full-length armrests shall be adjustable

### **Additional Equipment**

Unit shall be equipped with all standard equipment and shall include:

Key-less start with multiple security modes

Horn

12 Volt power port

Cold weather starting aid

Dry-type air cleaner with safety element and restriction indicator

Perforated engine side shields

Reverse warning alarm

Mounting steps and safety hand holds

Vandal protection providing lockable protection to all openable panels and fuel fill

Heavy-duty bottom guard

Front pull hook

### **Additional Bidder Requirements**

Bidders should have full service Parts and Service location within 50 miles of Moorhead, MS

The Bull Dozer must be delivered and invoiced no later than 3:00 p.m. June 1, 2023.

Standard Warranty from Manufacturer \_\_\_\_\_

Cost of Powertrain & Hydraulic warranty 5 years/3,000 hours \_\_\_\_\_