

General Bid Specifications  
3CX Backhoe Loader

Current production model 14-foot class backhoe loader. All specifications must comply with SAE or ISO standards

The backhoe loader shall be equipped with the following features and/or specifications:

**MACHINE SPECIFICATIONS**

**Engine**

- Y\_\_N\_\_ Specify \_\_\_\_\_ Minimum 4.4L displacement engine
- Y\_\_N\_\_ 4 cylinder, 16valve, 4-cycle, turbocharged, direct injection, ecoMAX engine
- Y\_\_N\_\_ EPA T4F regulations without aftertreatment
- Y\_\_N\_\_ Specify \_\_\_\_\_ Cold start aid=>coolant protection up to -22degreesF
- Y\_\_N\_\_ Water cooled
- Y\_\_N\_\_ Self cleaning pre-cleaner with automatic expulsion of excess dust
- Y\_\_N\_\_ Air filtration-two stage system-primary and secondary elements
- Y\_\_N\_\_ Fuel filtration-two stage, warning lamp for water in fuel
- Y\_\_N\_\_ Full flow pressure lubrication with spin-on filter cartridge
- Y\_\_N\_\_ Specify \_\_\_\_\_ Min 74 hp @ 2200RPM
- Y\_\_N\_\_ Throttle control-hand and foot operated
- Y\_\_N\_\_ Air to fluid coolers for maximum efficiency
- Y\_\_N\_\_ Separately serviceable radiator, hydraulic cooler and transmission cooler
- Y\_\_N\_\_ Specify \_\_\_\_\_ 295 lb.ft. maximum torque @ 1200rpm
- Y\_\_N\_\_ Internal oil cooler
- Y\_\_N\_\_ Poly-V belt for fan and alternator
- Y\_\_N\_\_ Specify \_\_\_\_\_ No DPF, No DOC or other forms of exhaust afertreatment installed

**Transmission**

- Y\_\_N\_\_ Synchro-shuttle
- Y\_\_N\_\_ 4-speed, full synchromesh gearbox with integral torque convertor and electrically operated reversing power shuttle
- Y\_\_N\_\_ Column mounted electric reversing shuttle which can change machine direction while allowing operator to keep hands on the steering wheel leading to fast cycle times
- Y\_\_N\_\_ 12 in. torque converter
- Y\_\_N\_\_ 4-pattern gear lever with transmission disconnect switch adds to the overall ease of operation
- Y\_\_N\_\_ On-the-move gear changes
- Y\_\_N\_\_ Specify \_\_\_\_\_ Torque converter stall ratio is 2.52:1
- Y\_\_N\_\_ Specify \_\_\_\_\_ 4 forward and 4 reverse gears
- Y\_\_N\_\_ Specify \_\_\_\_\_ Max forward speed of 22.8mph
- Y\_\_N\_\_ Specify \_\_\_\_\_ Max reverse speed of 22.8mph
- Y\_\_N\_\_ Air to fluid transmission cooler

**Powertrain**

- Y\_\_N\_\_ A single fill and check point for rear axle shall be standard equipment
- Y\_\_N\_\_ Specify \_\_\_\_\_ Four wheel drive
- Y\_\_N\_\_ Rear drive axle rigidly mounted, incorporates torque proportioning differential, driven by short propshaft from gearbox.
- Y\_\_N\_\_ Front steer axle, centrally pivoted with oscillation angle of 16 degrees
- Y\_\_N\_\_ Front axle includes torque proportioning differential transferring torque to wheel with traction
- Y\_\_N\_\_ Steering cylinder located behind front axle

4WD

*Front Axle*

- Y\_\_N\_\_ Rigidly mounted, incorporates torque proportioning differential, driven by short propshaft from gearbox.
- Y\_\_N\_\_ Specify \_\_\_\_\_ 36376 lb static load rating (16499 kg)
- Y\_\_N\_\_ Specify \_\_\_\_\_ 18300 lb dynamic load rating (8303 kg)
- Yes\_\_\_\_No\_\_\_\_ Specify \_\_\_\_\_ 16 degree oscillation angle

#### Rear Axle

Y\_\_N\_\_ Limited slip rear differential with outboard planetary drive  
Y\_\_N\_\_ Specify \_\_\_\_\_ 55125 lb static load rating (25011 kg)  
Y\_\_N\_\_ Specify \_\_\_\_\_ 27562 dynamic load rating (12505kg)

#### Brakes

Y\_\_N\_\_ Service brakes: Hydraulically actuated dual line, self adjusting, oil immersed, multi-disc type on the rear axle, well protected from dirt, water etc. requiring no maintenance.  
Y\_\_N\_\_ Hand operated parking brake, disc brake on rear axle input disc.  
Y\_\_N\_\_ Brake pedal: Two independently operable foot pedals enable machine to maneuver in tight spaces. Pedals are linked together for normal use  
Y\_\_N\_\_ Specify \_\_\_\_\_ 2WD/4WD: Electrical selection between 2WD/4WD allows on-the-move changes.

#### Electrical System

Y\_\_N\_\_ Specify \_\_\_\_\_ 12 volt negative ground, utilizing wiring and connectors meeting IP69 water ingress test standard  
Y\_\_N\_\_ Central fuse panel  
Y\_\_N\_\_ Specify \_\_\_\_\_ 110A/hr battery  
Y\_\_N\_\_ Specify \_\_\_\_\_ 95 amp alternator standard  
Y\_\_N\_\_ Specify \_\_\_\_\_ 2 fixed and 2 adjustable rear working lights  
Y\_\_N\_\_ Specify \_\_\_\_\_ 12 volt outlet for accessories, mobile phone holders  
Y\_\_N\_\_ Auto daily checks - all under hood checks electronically performed on startup  
Y\_\_N\_\_ Engine oil level sensor  
Y\_\_N\_\_ Light and alarm for battery charge condition, coolant temperature, engine oil pressure, transmission oil pressure, transmission oil temperature, air cleaner restriction, parking brake engagement and water in the fuel  
Y\_\_N\_\_ Light indicators for front work lights on, rear work lights on, turn signal and 4 way flashers

#### Seat/operator platform

Y\_\_N\_\_ Entry from left and right side  
Y\_\_N\_\_ Full sure grip rubber mat  
Y\_\_N\_\_ Front windshield with 2 speed plus intermittent wiper and washer and interior rear view mirror  
Y\_\_N\_\_ Openable side windows  
Y\_\_N\_\_ One piece rear window to open overhead  
Y\_\_N\_\_ Cup holders  
Y\_\_N\_\_ Storage compartment  
Y\_\_N\_\_ Upper and lower vent system  
Y\_\_N\_\_ Rear wiper with washer  
Y\_\_N\_\_ Radio pre-wire including speakers  
Y\_\_N\_\_ Specify \_\_\_\_\_ Operator ear noise level at 72dB or below at rated speed with no load  
Y\_\_N\_\_ Ability to switch from hi/low flow from the cab for differing attachments  
Y\_\_N\_\_ Specify \_\_\_\_\_ Min. 4 isolation mounts  
Y\_\_N\_\_ Insulation for max temp and sound control  
Y\_\_N\_\_ Suspended accelerator  
Y\_\_N\_\_ All glass surface free of rubber mouldings  
Y\_\_N\_\_ 3 position interior light  
Y\_\_N\_\_ Simple handle loader control with top-mounted clutch cut-out button  
Y\_\_N\_\_ Auxiliary loader hydraulic control built into the single handle loader control  
Y\_\_N\_\_ Forward/reverse power shuttle lever mounted on the steering column  
Y\_\_N\_\_ Cab/Canopy pre-wired for strobe or beacon light

#### Loader

Y\_\_N\_\_ Loader control with integral transmission disconnect switch  
Y\_\_N\_\_ True parallel lift to maintain level load on raise and lower cycles  
Y\_\_N\_\_ Specify \_\_\_\_\_ Min. 1.0 cubic yard capacity heavy duty loader bucket  
Y\_\_N\_\_ Specify \_\_\_\_\_ Min. 13600 lbf loader bucket breakout force

Y\_\_N\_\_ Specify \_\_\_\_\_ Min. 9' dump height  
 Y\_\_N\_\_ \_\_\_\_\_ Bucket return-to-dig  
 Y\_\_N\_\_ \_\_\_\_\_ Heavy duty in-line loader arms  
 Y\_\_N\_\_ \_\_\_\_\_ Arch design for short turning circle  
 Y\_\_N\_\_ \_\_\_\_\_ Dual parallel bucket cylinders  
 Y\_\_N\_\_ \_\_\_\_\_ Full bucket rollover for dozing  
 Y\_\_N\_\_ \_\_\_\_\_ Full bucket rollover for stability in backhoe operation  
 Y\_\_N\_\_ \_\_\_\_\_ Pre-drilled edge  
 Y\_\_N\_\_ \_\_\_\_\_ Heavy duty lifting eyes  
 Y\_\_N\_\_ \_\_\_\_\_ Flat top shovel  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Dump reach 2ft 8in at full height  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Loader pin height of 11ft 4in  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Cat tail/ Rat Tail / Flair welds  
 Y\_\_N\_\_ \_\_\_\_\_ Large Torque box that goes through the loader arms  
 Y\_\_N\_\_ Specify \_\_\_\_\_ D-Shaped loader arms with 2 welds for strenght

**Backhoe and controls**

Y\_\_N\_\_ \_\_\_\_\_ Heavy duty mainframe with sealed swing post pins and swing cylinder pins  
 Y\_\_N\_\_ \_\_\_\_\_ Fabricated boom and dipper  
 Y\_\_N\_\_ \_\_\_\_\_ Floor mounted two lever mechanical controls for operation of the backhoe  
 Y\_\_N\_\_ \_\_\_\_\_ Controls must allow to utilize the backhoe both while facing rear and forward  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Max. dig depth to equal or exceed 14' retracted  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Bucket breakout force to equal or exceed 13940lbf  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Bucket rotation capable of 201 degrees minimum  
 Y\_\_N\_\_ \_\_\_\_\_ Grease pins in the swing tower to boom base  
 Y\_\_N\_\_ \_\_\_\_\_ Replaceable bushings in the swing tower to boom base mounting pins  
 Y\_\_N\_\_ \_\_\_\_\_ Inner extending dipper for better stability and strength  
 Y\_\_N\_\_ \_\_\_\_\_ Equal length boom and dipper for better stability, visibility and productivity  
 Y\_\_N\_\_ Specify \_\_\_\_\_ 2" backhoe swing frame for increased strength  
 Y\_\_N\_\_ \_\_\_\_\_ Minimum 18,000 lbs of swing torque  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Minimum 60 mm swing cylinder rod size  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Minimum dipper lift capacity 6 feet above ground of 4667 lbs with a standard dipperstick

**Hydraulics**

Y\_\_N\_\_ \_\_\_\_\_ Open center valve block  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Main relief valve : 3655psi  
 Y\_\_N\_\_ Specify \_\_\_\_\_ Unloader valve 3002psi  
 Y\_\_N\_\_ \_\_\_\_\_ 2 section displacement gear pump type  
 Y\_\_N\_\_ Specify \_\_\_\_\_ 32.5 gpm pump capacity  
 Y\_\_N\_\_ \_\_\_\_\_ Filtration through suction strainer and return line filter  
 Y\_\_N\_\_ \_\_\_\_\_ During excavation the circuit automatically varies hydraulic power to match digging conditions for extra performance, control and power  
 Y\_\_N\_\_ \_\_\_\_\_ Careful routing of hydraulic hoses and pipework guards against site damage and allows easy servicing  
 Y\_\_N\_\_ \_\_\_\_\_ Separate oil reservoir not shared with other systems  
 Y\_\_N\_\_ \_\_\_\_\_ Separate loader/backhoe hydraulic system oil cooler  
 Y\_\_N\_\_ \_\_\_\_\_ Hoses to have burst pressure at 4 times working pressure  
 Y\_\_N\_\_ \_\_\_\_\_ Structural steel pipe to withstand minor impacts

**Tires**

Y\_\_N\_\_ Specify \_\_\_\_\_ Galaxy 14x17.5x10 ply front, 19.5x24 rear tires

**Serviceability and maintenance**

Y\_\_N\_\_ \_\_\_\_\_ Rear tilt engine hood for easy access to service points and provides vandal protection  
 Y\_\_N\_\_ \_\_\_\_\_ Front grill screen that is key lockable  
 Y\_\_N\_\_ \_\_\_\_\_ Maintenance free battery

Y\_\_N\_\_ External toolbox with integral locking handle  
 Y\_\_N\_\_ Specify\_\_\_\_\_ 38 gallon fuel tank  
 Y\_\_N\_\_ Specify\_\_\_\_\_ 29.5 gallon hydraulic system  
 Y\_\_N\_\_ 500 hour service interval for engine oil  
 Y\_\_N\_\_ Standard 2-year LiveLink subscription - machine monitoring + security updates

**Warranty**

Y\_\_N\_\_ Specify\_\_\_\_\_ 5-year, 5,0000 hour warranty

**OPTIONAL EQUIPMENT**

**Loader**

Y\_\_N\_\_ Specify\_\_\_\_\_ 6-in-1 loader bucket: 1.3 cubic yard capacity

**Backhoe**

Y\_\_N\_\_ Hammer circuit with internally routed hoses with selectable hi/low flow from operator station

**Extending dipper**

Y\_\_N\_\_ Extending dipper to extend inner section to trench  
 Y\_\_N\_\_ Synthetic wear pads with external adjustment for extending dipper  
 Y\_\_N\_\_ Dry type wax oil to be used on extending dipper  
 Y\_\_N\_\_ Specify\_\_\_\_\_ 18'6" max dig depth  
 Y\_\_N\_\_ Specify\_\_\_\_\_ 13730 lbf bucket breakout force

**Additional Options**

Y\_\_N\_\_ Backhoe buckets  
 Y\_\_N\_\_ Backhoe quick coupler  
 Y\_\_N\_\_ Hydraulic breaker circuit  
 Y\_\_N\_\_ Specify\_\_\_\_\_ 110V engine block heater  
 Y\_\_N\_\_ Cab with standard Air Conditioning