

SPECIFICATION RT57-09-02-01

4X4 TLB –Tractor-Loader-Backhoe (68kW)

A bid for the supply and delivery of pneumatic tired four wheel drive backhoe/loaders. The operating mass should not be less than 7800 kg. These will be used for operating on small excavations and loading site. The machine must be powered by a Diesel engine with a power output of at least 68 kW.

EQUIPMENT MAKE:

EQUIPMENT MODEL:

OPERATING MASS:

Machine complies with all specified standards:(Yes/No)

1. ENGINE

1.1 Engine

The TLB must be powered by a Diesel engine with a minimum power output of at least 68 kW.

Engine Manufacturer.....

Engine Model.

Type.....

Emission Standard.....

Diesel Use..... (ppm) sulphur

Average fuel consumption under full load

Displacement.....L

Derating Altitudem

Maximum Net Output Power..... kW atrpm

Maximum Net Torque..... Nm atrpm

1.2 Air Cleaner

Engine Breathing shall be through a dry type air cleaner with cyclonic pre cleaner, serviceable main (primary) element, serviceable safety (secondary) element, and an air cleaner service indicator (informer type) mounted directly at the inlet duct.

Details of air cleaner

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Are the following fitted:

Cyclonic pre-cleaner.....(Yes/No)

Main element / Primary element(Yes/No)

Safety element / Secondary element.....(Yes/No)

Are the filter elements serviceable(Yes/No)

Service indicator.....(Yes/No)

1.3 Filters

Full flow disposable fuel and lubricating oil filters as well as a fuel/water separator must be fitted. The separator must be positioned where it can be easily seen, easy to inspect and to clean and drain if necessary.

Details of fuel and lubricating oil filters

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Fuel/Water separator

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Type of water drain (Replacement/ Manual/ Automatic)

Describe the Position of separator

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1.4 Component Breathing Systems

All components breathers eg. transmission, differential, hydraulic tank and fuel tank shall be fitted with filtration systems designed to prevent the entry of contaminants.

Breathing system maintenance procedures shall be included in the maintenance manual.

Which components are fitted with breathers:

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.....

Are all of these breathers fitted with suitable filtration systems? If not, which are not?

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.....

What does a scheduled maintenance of breather filtration system involve (eg. washing, Replacement)

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.....

1.5 Cooling System

A tropical type engine cooling system ensuring full load operation throughout the year at any place in the territory of the South Africa.

Coolant Type:.....

Cooling mechanism.....

Details of Cooling System.....

.....

1.6 Engine Monitoring System

The engine should be fitted with a monitoring system. In case of a malfunction, the system should warn the operator using a buzzer and a warning light. It must keep track of features such as oil pressure, water/oil temperature, water level and transmission temperatures.

Details of Monitoring Device.....

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.....

1.7 Engine Starting System

A heavy duty engine starting system is required, in order to ensure start-ups at temperatures as low as - 5°C.

Description of Starting System.....
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.....

Starting Motor.....

Alternator.....

Battery: Type - Number -

Battery Charging System.....

2. Electrical Works

An efficient electrical system should be installed in order to insure effective operation of the machine. The electrical components must include the following standard features. LED amber lights must be installed on the sides and on the roof of the cab. . A total of 10 Led clusters will be required to be installed. The clusters must contain three (3) X 1-watt LEDs each.

NB: the final placement and installation of the LED clusters will be discussed by Fleet Management and the successful bidder.

Windscreen Wipers.....(Yes/No)

Amber LED Lights.....(Yes/No)

10 Amber LED clusters supplied(Yes/No)

Head Lights.....(Yes/No)

Brake Lights.....(Yes/No)

Parking Lights.....(Yes/No)

Reverse Buzzer.....(Yes/No)

3. Cab

The grader should be fitted with a lockable, steel, two door, fully enclosed, all round vision cab (complying with the ISO 5006:2006 / Correction 1:2008). The cabin must be protected by ROPS (Roll Over Protection System) that conforms with the ISO 3471:2008 standard. The cabin must be fitted with an air-conditioner and rubber floor mat. It must be fitted with safety glass and rear-view mirrors. The operator's seat should be suspended and adjustable. The operator should have access to all controls. All electronic warning signals should be visible to the operator at all times. The operator should be able to view the hour meter, oil and temperature gauges when needed.

Does cab comply to all standards and specification.....(Yes/No)
 Enclosed.....(Yes/No)
 ROPS.....(Yes/No)
 Air conditioner(Yes/No)
 Adjustable seat.....(Yes/No)
 Access to all controls.....(Yes/No)
 No of Occupants.....(Yes/No)

Operators view: What can the operator see

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Gauges

The machine shall be fitted with an electrically operated hour meter working off the oil pressure line of the engine and registering “clock” hours. (Hobbs M5600 or equal)

Details of gauges, etc.

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Details and make of hour meter:

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4. FUEL TANK

The fuel tank capacity shall allow for at least 9 hours full load operation between refills.

Fuel tank capacity:(liter)

A lockable fuel tank cap and anti-siphon device shall also be fitted.

Details of locking fuel tank cap and anti-siphon device:

5. TRANSMISSION

A heavy duty **Powershift** transmission and torque converter **or Powershuttle transmission** with travel speeds of up to 35 km/h is required. The tractor loader backhoe shall be driven from site to site for distances up to 50 km and the drive system shall be designed for this operation. A selectable, between 4x4 and 4x2 transmission will be preferred.

Full details of TLB drive system (engine to wheels):

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.....

Powershift transmission(Yes/No)

Powershuttle transmission(Yes/No)

Maximum distance the machine may be driven without damaging the drive system:

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Speed forward:

1st:km/h

2nd:km/h

3rd:km/h

4th:km/h

Number of driving wheels:

Can the equipment be switched between 4x4 and 4x2 mode:(Yes/No)

6. UNDERCARRIAGE

Heavy duty loader type (L4 type) RSA manufactured tires or tires readily available in the RSA shall be fitted. Industrial type tires must be fitted onto the machines.

Tyre sizes:

Front: Ply rating

Type:

Dual/single:

Rear: Ply rating

Service brakes: power assisted and self-adjusting brakes are required.

Parking brakes: parking brakes must be a secondary braking system that is independent of service brakes.

Details of service brakes:

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Self adjusting(Yes/No)

Details of parking brakes:

.....

Independent of service brakes(Yes/No)

Full power steering is required

Details of steering:

.....

While digging, the machine shall be suitably stabilized by means of stabilizers.

Details of stabilizers:

.....

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Details of axles:

Front:

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Rear:

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7. HYDRAULICS

The hydraulic system must provide for simultaneous operation of more than one control at a time without loss of speed of any one action. Self regulating pumps providing automatic adaption of working speed and power to job conditions are required.

Full details of hydraulic system:

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Number of hydraulic pumps:

Type of pumps:
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8. WORKING ATTACHMENTS

8.1 Backhoe

The backhoe shall be capable of a digging depth of at least 4300 mm with a bucket digging force of at least 45 kN. Dipper arm crowd force must be at least 30 kN. A general purpose bucket with a heaped capacity of at least 0.18m³ is required.

Digging depth.....mm

Bucket digging force.....kN

Arm crowd force.....kN

Bucket capacity.....m³

Details of backhoe:
.....

Can a "4 in 1" bucket be supplied.....(Yes/No)

8.2 Loader

The loader shall have a general purpose bucket of at least 0.9m³ heaped, a dump clearance of at least 2500 mm at maximum bucket discharge angle and a dump reach at this height of not less than 750 mm.

Bucket capacity:m³

Dump clearance:mm

Dump reach:mm

Discharge angle:(degrees)

Break out force:kN

Digging depth: mm

Details of loader bucket:
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8.3 Forklift (optional)

Forklift attachments should also be fitted able to lift a load of at least 1700 Kg. The forklift attachment shall permanently fitted to the equipment and allow to be folded for storage behind the bucket. The working length of the forks shall be of adequate length to allow for the safe lifting of loads such as pallets.

Lift capacity of forklift attachments:Kg

Working length of forks:.....mm

Foldable forklift attachments(Yes/No)

Details of forklift attachments:
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9. Service Capacities

The capacity of fuel and lubricants should be enough to ensure a full load operational working hours above 8 hours before, refilling.

Please provide the following information (which is essential for the operation of the machine). This information lists the commodities to be used as suggested by the OEM.

	Size/Capacity	Performance standard
Fuel Tank	(ppm sulphur)
Transmission Fluid		
Differential Casing		
Hydraulic Tank		
Engine Oil		
Coolant Reservoir		