

**TRUCK TRACTOR 6X4, 40-TON, NO SLEEPER****1. SECTION 1 – ANNEXURE**

1.1 The annexure forms part of this specification.

**2. SECTION 2 – SCOPE**

2.1 This specification covers the requirements for a 40 Ton Truck Tractor (Abnormal load), no sleeper cab, with dual rear wheels on tandem axles, 6x4 Driving Axle with GCM not less than 75,000kg Fitted with a diesel engine developing not less than 2,400Nm of Torque. Provision for on and off highway applications and an option for dual winch operations (in cab and external).

**3. SECTION 3 – DETAILS WITH TENDER**

3.1 Equipment Offered:

Make: \_\_\_\_\_

Model: \_\_\_\_\_

3.2 If required, the tenderer is to supply a sample for evaluation purposes, or alternatively state where the equipment may be viewed.

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**4. SECTION 4 – REQUIREMENTS****Description****Particulars of Offer****4.1 ENGINE**

4.1.1 The engine shall be not less than a 6 cylinder in line engine, water cooled, four-stroke diesel

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4.1.2 The engine shall provide a minimum of not less than 350kW at 1800 r/min.

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4.1.3 The minimum engine torque shall be not less than 2100 Nm at 1100 r/min.

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4.1.4 A dynamometer certificate shall be supplied for proof of brake kW.

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4.1.5 The engine oil lubrication system shall be pressure fed.

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4.1.6 The engine oil filter shall be of full flow, replaceable element type.

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4.1.7 A high performance air filter with exchangeable paper elements shall be fitted.

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4.1.8 The engine shall be equipped with the following:

a. New generation ultra high-pressure common rail fuel system

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b. Economical fuel consumption.

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c. Virtually smoke free exhaust

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**4.2 Fuel System**

- 4.2.1 A fuel tank with a minimum capacity of 700 Liters shall be fitted. \_\_\_\_\_
- 4.2.2 Replaceable element type fuel filter(s) shall be fitted. \_\_\_\_\_
- 4.2.3 An optional fuel filtration system **must be made available** and be similar or better than a UDF (Ultrafine Depth Filtration) diesel fuel filter, capable of removing all impurities down to 0.5 micrometres in size. The filter is to be of sufficient size to suit the power rating of the engine \_\_\_\_\_
- 4.3 **Differential**
- 4.3.1 Dual drive bogie (single reduction hypoid differentials and lockable inter-axle differential). \_\_\_\_\_
- 4.3.2 Trunnion mounted inverted semi-elliptic steel leaf springs \_\_\_\_\_
- 4.4 **Steering**
- 4.4.1 The steering shall be power assisted. \_\_\_\_\_
- 4.5 **Wheels and Tyres**
- 4.5.1 All wheels shall be tubeless radials. \_\_\_\_\_
- 4.5.2 The spare wheel shall be mounted on a winch type carrier. \_\_\_\_\_
- 4.5.3 Safety rims shall be fitted to the front two wheels. \_\_\_\_\_
- 4.6 **Automated Transmission**
- 4.6.1 A sixteen (16) speed full automated transmission are required. \_\_\_\_\_
- 4.6.2 The fully loaded combination must be able to pull away from a standstill on a 10% gradient using 1000 rpm or less. (Grade ability under full load not less than 34%) \_\_\_\_\_
- 4.6.3 A power take off (PTO) point from the transmission shall be fitted. \_\_\_\_\_
- 4.6.4 FRONT AXLE CAPACITY = 7,500 kg (GA) \_\_\_\_\_
- 4.6.5 REAR AXLE CAPACITY (GA) = 21,000 kg \_\_\_\_\_
- 4.7 **Brakes**
- 4.7.1 A dual air-line braking system must be provided which acts, from a single pedal control, on all wheels of the truck tractor and semi-trailer. This system must comply fully with the requirements of the Road Traffic & Road Transportation Legislation. The braking system must be such that failure of pressure in any of the lines will not cause failure of the truck tractor and trailer brakes. \_\_\_\_\_
- 4.7.2 Anti-lock brakes (ABS) are to be fitted and the braking system is to comply with ISO 3450:1996. \_\_\_\_\_
- 4.7.3 All brake components are to be asbestos free

- 4.7.4 An additional emergency and parking brake system is to be provided which will act on at least 2 axles. This must be of the spring applied type. \_\_\_\_\_
- 4.7.5 An Endurance Braking system that will ensure controllability of the fully loaded combination on long down hills shall be fitted. (This will include and exhaust brake and a retarder or intarder. The bidder must provide the torque applied by the braking system. \_\_\_\_\_
- 4.7.6 A full trailer brake, with couplings and hand control system shall be fitted. \_\_\_\_\_
- 4.7.7 An air dryer and unloader valve shall be fitted. \_\_\_\_\_
- 4.9 **Number plates**
- 4.9.1 Two (2) Number Plate Carriers, conformed to the Road Traffic Act, shall be supplied and fitted. \_\_\_\_\_
- 4.10 **Chassis**
- 4.10.1 A ramp and roller shall be fitted to the back of the chassis. \_\_\_\_\_
- 4.10.2 A double oscillating heavy duty 5th wheel, similar or better than a Jost 38G-1, shall be supplied and fitted. A single oscillating wheel is to be offered as an optional extra. \_\_\_\_\_
- 4.10.3 The 5th wheel shall take a pin of 90mm (3.5inch) as standard with an option of a 50 mm (2 inch) \_\_\_\_\_
- 4.10.4 Guiding ramps shall be fitted on the chassis. \_\_\_\_\_
- 4.10.5 A catwalk shall be fitted to the chassis between the winch and the 5th wheel. \_\_\_\_\_
- 4.10.6 Mudguards covering the rear axle group. \_\_\_\_\_
- 4.10.7 The batteries fitted to the Truck Tractor are to be fitted inside a lockable battery box. \_\_\_\_\_
- 4.10.8 An air pressure tapping for inflating tyres. \_\_\_\_\_
- 4.10.9 Heavy duty front pull hook to facilitate loading of equipment. \_\_\_\_\_
- 4.11 **Winch**
- 4.11.1 The dimensions from the back of the cab to the rear axle must be such that a 40ton hydraulic winch plus fifth wheel in optimal position can be accommodated when the truck tractor is coupled to a low bed trailer. \_\_\_\_\_
- 4.11.2 A 40ton single drum reversible winch to be fitted on truck tractor. The winch should be of the drum type with a horizontal shaft and an automatic holding brake. It should be fitted with adequate strength steel wire at least 30 meter in length. The winch will not only be used for the coupling and uncoupling of the trailer combination but also the recovering of stranded vehicles and equipment. \_\_\_\_\_
- 4.11.3 A hook must be attached to the end of the steel wire of sufficient strength for the winch rating. \_\_\_\_\_

4.11.4 An OEM approved gearbox driven PTO to be fitted to drive a hydraulic pump for the hydraulic operated winch.

4.12 **Cab**

4.12.1 The cab is to be well insulated and have adequate ventilation for a tropical climate.

4.12.2 The cab shall be fitted with an air conditioner.

4.12.3 The cab must be adequately rust proofed and sealed against the entry of dust.

4.12.4 A hydraulic cab tilt system shall be fitted.

4.12.5 The driver's seat must be fully adjustable.

4.12.6 Two (2) Flagpoles with red flags shall be fitted on both sides to the front of the cab.

4.12.7 Maximum noise level in the cab must not exceed 85dBA.

4.12.8 The cab shall be fitted with two (2), 4.5 Kg **ABE** fire extinguishers.

4.13 **Instruments**

4.13.1 Instrumentation shall consist of the following:

a. Tachometer and speedometer.

b. Dual-needle or two separate air pressure gauges.

c. Oil pressure gauge or light.

d. Engine coolant temperature gauge.

e. Fuel tank gauge.

f. Voltmeter.

g. Warning lights.

h. Warning buzzers.

4.13.2 The electrical system shall be 24 volt negative ground.

4.13.3 A 28v-70 amp alternator shall be fitted.

4.13.4 The battery shall be mounted in a steel box on the chassis side rail.

4.13.5 A battery isolation switch shall be fitted to the battery.

4.13.6 The key of the isolator switch shall be fitted with a chain.

4.13.7 All lights shall conform to the Road Traffic Act and Regulations and consist of the following:

a. Headlights.

b. Front and rear indicator lights.

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c. Hazard lights.

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d. Tail and brake lights.

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e. Reverse lights.

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f. Number plate light(s)

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4.13.8 Two (2) amber rotating beacon lights shall be fitted to the cab.

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4.13.9 Two (2) spot lights shall be fitted to the rear of the cab for night loading.

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4.13.10 The rear lights shall be of the LED Truck type.

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4.13.11 A heavy duty chevron and light box shall be fitted.

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4.13.12 A trailer light plug shall be fitted.

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4.13.13 All vehicle electrical wiring shall be adequately protected by means of a fuse box.

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4.13.14 All electrical wiring shall be adequately insulated, sheaved and anchored.

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#### 4.14 **Equipment**

4.14.1 A lockable steel toolbox of 600mmx300mmx300mm shall be fitted on to the chassis.

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4.14.2 The toolbox shall contain the following:

a. A jack (minimum capacity of 40 Ton).

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b. A jack handle.

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c. Wheel spanner.

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d. Two (2)-tire levers.

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e. Cab tilt lever if needed.

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f. Spare wheel spanner and crank lever.

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g. 2 (Two) Warning triangles.

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h. Toolset if supplied.

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i. An airline of sufficient length to reach all wheels, fitted with a tyre inflator and gauge.

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#### 4.15 **Bull bar**

4.15.1 A fold down bulbar shall be fitted.

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#### 4.16 **Information plate**

4.16.1 A plate shall be fitted on the left side in a conspicuous position in letters and figures of not less than 40 mm in height and which shall be clearly legible at all times.

4.16.2 The plate shall contain the following:

- a. Tare in kg (denoted as T)
- b. Gross vehicle mass in kg (denoted as GVM/BVM)
- c. Gross vehicle combination mass in kg (denoted as GCM/BKM)
- d. Permissible combination mass in kg (denoted as MD/T)

4.16.3 This plate shall not replace the plate that must be in the vehicle according to Road Traffic Regulations.

#### 4.17 **General**

4.17.1 All caps and lids shall be fitted with a chain.

4.17.2 Provision for adequate lubrication of all working parts shall be fitted.

4.17.3 This equipment is to be of an up to date design and to embody all the latest improvements and appliances.

4.17.4 This specification is intended to include, whether mentioned or not, all items and accessories necessary for the proper functioning of the complete equipment.

4.17.5 Provision shall be made for training of personnel on driving, operating maintenance, servicing and repairs of the vehicle.

#### **4.18 Additional optional accessories to be priced for separately**

4.18.1 All applications shall be done by the supplier to fit the application.

4.18.2 Optional PTO and hydraulic system:

The truck tractors shall be fitted with a gearbox driven PTO, and hydraulic pump for the powering of tipping semi-trailers or detachable low bed trailer goosenecks by hydraulic means.

The PTO engagement lever shall be fitted with a positive lock to prevent unintentional engagement. A cab mounted proportional tip control valve incorporating a hold position with auto PTO shut off shall be fitted. An auto idle up facility shall be provided with accelerator pedal disabled.

Hydraulic tanks shall be mounted on the truck tractors, complete with fluid level indicators and splash proof breathers which shall serve the hydraulic circuits.

A swing-arm hose cradle (hose protect) for lay flat jump hose between truck tractor and trailer shall be fitted. Quick couplers for connecting with the trailer hydraulics shall be fitted.

The following hydraulic performance characteristics are required:

- (i) Maximum pressure required - 23,0 MPa
- (ii) Flow - 84 ℓ/m
- (iii) Tank volume - 180 ℓ

