

SPECIFICATIONS FOR WATER BOWSERS

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1.0 Water Browsers (8000L)

1.1 The water browser shall meet the following requirements:

- 1 An 8,000 Liters capacity tank suitable for carrying drinking water to be mounted on a suitable truck chassis.
- 2 Pumping equipment comprising of a pump having the capacity of 6000 GPH at a total head of 60 feet driven by P.T.O or separate engine driven pump with suction and delivery hoses & necessary stainless steel valves.

1.2 Chassis & Cab

- 1 All steel, forward/semi-forward control cab and be factory manufactured.
- 2 Shall have protected for corrosion for seven years.
- 3 Heavy duty frame with cross members.
- 4 Right hand driven.
- 5 Fitted with heavy duty front and rear axle.
- 6 Fitted with two (02) large external rear view mirror.
- 7 Air or power assisted hydraulic brakes on all wheels.
- 8 Mechanical parking brakes.
- 9 Power assisted steering.
- 10 Large Windshield for Visibility.
- 11 ELR (Emergency Locking Retraction) Lap shoulder Belts for driver and Co-Driver.
- 12 Side Impact beams in both doors.
- 13 Maximum gradability (tan θ) % should be greater than 30
- 14 Shall

1.3 Engine

- 1 04/06 Cylinder four stroke water cooled natural aspirating (Non turbo)Diesel Engine with sufficient power (Should be more than 140 Kw)to carry 8000 ltrs load with a speed of more than 70 Km/hr. Replacement elements for air, fuel and oil filters.
- 2 Direct injection.
- 3 200 liters or more capacity fuel tank.

1.4 Transmission

- 1 Heavy duty hydraulic control dry single plate clutch with cushioning spring.
- 2 Synchromesh gear box with 05 forward 1 reverse speed
- 3 Power take-off for the pump if required.

1.5 Instrument Panel

Instrument panel shall include the following;

- 1 Speedometer
- 2 Odometer
- 3 Trip counter
- 4 Warning lamp for low oil pressure, hand brake,
- 5 Battery charging
- 6 Fuel gauge
- 7 Coolant temperature gauge
- 8 Radio and cassette player

1.6 Electrical System

- 1 24V direct starting system complete with heavy duty batteries
- 2 Alternator
- 3 All standard lighting to meet motor traffic regulations of Sri Lanka.
- 4 Direction indicators in front and rear

1.7 Suspension

- 1 Front - Semi Elliptical alloy steel leaf springs shackle type with double acting hydraulic telescopic shock absorbers.
- 2 Rear - Semi Elliptical alloy steel leaf springs shackle type.

1.8 Wheels and Brakes

- 1 Single front wheels
- 2 Dual rear wheels
- 3 Spare wheel mounted on a carrier.
- 4 Should have service , auxiliary and parking brake system

1.9 Construction of Tank Unit

- 1 The tank capacity shall 8,000 Liters used for drinking water.
- 2 The tank is to be of elliptical section with dished ends and internal baffle plates.
- 3 The tank shall be of all stainless steel welded with stainless steel plates of minimum thickness of 3 mm with 2B finish. Grade of stainless steel used for construction of tanks shall be suitable for carrying chlorinated (RCL 0.8)portable drinking water. All the other fabrication parts including **tank mounting runners**

on the chassey shall also be done with suitable stainless steel having appropriate thickness.

- 4 Details of the grade of stainless steel used for the construction shall be submitted with the bid with the proof for its suitability for drinking water.
- 5 The tank compartment shall have a minimum 150 mm, diameter filing port cover fitted with quick locking device.
- 6 The compartment shall have manhole(s) at top, of minimum diameter 400 mm. with hugged cover fitted with quick locking device top enable inspection and cleaning of the tank.
- 7 The compartment shall have a bottom drain plug. The rear compartment shall have a valve of a diameter which enables to fit a water sprinkler attachment.
- 8 Built in lockable compartments for hoses and tools shall be incorporated.
- 9 The tank is to have catwalks at the sides and top with stainless steel ladder access.
- 10 The operation controls and valves shall be well placed for easy operation and clearly marked.
- 11 The unit shall comply with international safety regulations.
- 12 Two (02) nos. 04 meter lengths of acid resistant suction hoses with fittings shall be provided.
- 13 The unit shall be complete in all respects, installed and tested prior to handing over to the buyer. One extra discharge hose of 10m length with fittings shall be provided.

1.10 Water Pump

- 1 Mounted on the truck, pump should be driven by a power take off or separate engine Suction height 20" delivery height 60" capacity of 6000 GPH.

1.11 Note of Body Fitment

1. No metal to metal contact between the body sub frame and the vehicle frame shall occur.
- 2 Body holding down bolts shall be of the type which positively secures the body sub frame to the vehicle frame without their behind any welding to the vehicle frame.
- 3 The body shall not be fixed to the vehicle frame so as to prevent flexing of the frame.
- 4 Any metal clamp around the frame shall have balata being or equivalent to prevent metal contract.

- 5 In the case of open frames the frame shall be supported internally at such point by a treated hardwood block.

1.12 Welding

- 1 All welds are to be of good standard and to cover the full lengths of the body joint.
- 2 Where distortion is liable to occur the weld may alternate from side to side of the joint with gaps not exceeding 50% of the length of the joint on either side.

1.13 Fuel Consumption

Minimum fuel consumption and respective speeds to be indicated.

1.14 Spares

Spares recommended by manufacturer for 2 years running repairs shall be given including following:

1. Air Cleaner elements - 02 Sets
2. Fuel filter coarse/fine - 02 Sets
3. Oil filters - 02 Sets
4. Brake/clutch system repair kit - 02 Sets each

1.15 Technical Literature

- 1 All technical literature pertaining to specifications and engine performance curves shall be submitted along with the offer.
2. Successful Tenderer shall provide following catalogues and hand-books. Drivers Manual for each vehicle.

1.16 Warranty certificate against premature malfunctioning of vehicle ,accessories and tank (if fabricated locally) during first 100,000 kms or Two year period whichever occurs first.

1.17 Water Bowsers shall be registered in the name of the NWSDB by the supplier and cost shall be included in the Bid price.

2 . 0 Water Browsers (6000L) – For Isolated Areas

2.1 The water browser shall meet the following requirements:

- 1 An 6,000 Liters capacity tank suitable for carrying drinking water to be mounted on a suitable truck chassis.
- 2 Pumping equipment comprising of a pump having the capacity of 6000 GPH at a total head of 60 feet driven by P.T.O or separate engine driven pump with suction and delivery hoses & necessary stainless steel valves.

2.2 Chassis & Cab

- 1 All steel, forward/semi-forward control cab and be factory manufactured.
- 2 Shall have protected for corrosion for seven years.
- 3 Heavy duty frame with cross members.
- 4 Right hand driven.
- 5 Fitted with heavy duty front and rear axle.
- 6 Fitted with two (02) large external rear view mirror.
- 7 Air or power assisted hydraulic brakes on all wheels.
- 8 Mechanical parking brakes.
- 9 Power assisted steering.
- 10 Large Windshield for Visibility.
- 11 ELR (Emergency Locking Retraction) Lap shoulder Belts for driver and Co-Driver.
- 12 Side Impact beams in both doors.
- 13 Maximum gradability (tan Ø) % should be greater than 30

2.3 Engines

- 1 04/06 Cylinder four stroke water cooled natural aspirating Diesel Engine with sufficient power to carry 6000L of water and to achieve a speed of more than 70KM/hr. with the load.
- 2 Engine Power shall be more than 115 kw
- 3 Replacement elements for air, fuel and oil filters.
- 4 Direct injection.
- 5 160 liters or more capacity fuel tank.

2.4 Transmission

- 1 Heavy duty hydraulic control dry single plate clutch with cushioning spring.
- 2 Synchromesh gear box with 05 forward 1 reverse speed
- 3 Power take-off for the pump if required.

2.5 Instrument Panel

Instrument panel shall include the following;

- 1 Speedometer
- 2 Odometer
- 3 Trip counter
- 3 Warning lamp for low oil pressure, hand brake,
- 4 Battery charging
- 5 Fuel gauge
- 6 Coolant temperature gauge
- 7 Radio and cassette player

2.6 Electrical System

- 1 24V direct starting system complete with heavy duty batteries
- 2 Alternator
- 3 All standard lighting to meet motor traffic regulations of Sri Lanka.
- 4 Direction indicators in front and rear

2.7 Suspension

- 1 Front - Semi Elliptical alloy steel leaf springs shackle type with double acting hydraulic telescopic shock absorbers.
- 2 Rear - Semi Elliptical alloy steel leaf springs shackle type.

2.8 Wheels and Brakes

- 1 Single front wheels
- 2 Dual rear wheels
- 3 Spare wheel mounted on a carrier.
- 4 Should have service , auxiliary and parking brake system.

2.9 Construction of Tank Unit

- 1 The tank capacity shall 6000 Liters used for drinking water.
- 2 The tank is to be of elliptical section with dished ends and internal baffle plates.
- 3 The tank shall be of all stainless steel welded with stainless steel plates having minimum thickness of 3 mm with 2B finish. Grade of stainless steel used for construction of tanks shall be suitable for carrying chlorinated (RCL 0.8)portable drinking water. All the other fabrication parts including **tank**

mounting runners on the chassis shall also be done with suitable stainless steel having appropriate thickness.

- 4 Details of the grade of stainless steel used for the construction shall be submitted with the bid with the proof for its suitability for drinking water.
- 5 The tank compartment shall have a minimum 150 mm, diameter filing port cover fitted with quick locking device.
- 6 The compartment shall have manhole(s) at top, of minimum diameter 400 mm. with hugged cover fitted with quick locking device top enable inspection and cleaning of the tank.
- 7 The compartment shall have a bottom drain plug. The rear compartment shall have a valve of a diameter which enables to fit a water sprinkler attachment.
- 8 Built in lockable compartments for hoses and tools shall be incorporated.
- 9 The tank is to have catwalks at the sides and top with stainless steel ladder access.
- 10 The operation controls and valves shall be well placed for easy operation and clearly marked.
- 11 The unit shall comply with international safety regulations.
- 12 Two (02) nos. 04 meter lengths of acid resistant suction hoses with fittings shall be provided.
- 13 The unit shall be complete in all respects, installed and tested prior to handing over to the buyer. One extra discharge hose of 10m length with fittings shall be provided.
- 14 Should have a five years guaranty for the protection of corrosions internally and externally.

2.10 Water Pump

- 1 Mounted on the truck, pump should be driven by a power take off or separate engine Suction height 20" delivery height 60" capacity of 6000 GPH.

2.11 Note of Body Fitment

- 1 No metal to metal contact between the body sub frame and the vehicle frame shall occur.
- 2 Body holding down bolts shall be of the type which positively secures the body sub frame to the vehicle frame without their behind any welding to the vehicle frame.

- 3 The body shall not be fixed to the vehicle frame so as to prevent flexing of the frame.
- 4 Any metal clamp around the frame shall have balata being or equivalent to prevent metal contract.
- 5 In the case of open frames the frame shall be supported internally at such point by a treated hardwood block.

2.12 Welding

- 1 All welds are to be of good standard and to cover the full lengths of the body joint.
- 2 Where distortion is liable to occur the weld may alternate from side to side of the joint with gaps not exceeding 50% of the length of the joint on either side.

2.13 Fuel Consumption

Minimum fuel consumption and respective speeds to be indicated.

2.14 Spares

Spares recommended by manufacturer for 2 years running repairs shall be given including following:

1. Air Cleaner elements - 02 Sets
2. Fuel filter coarse/fine - 02 Sets
3. Oil filters - 02 Sets
4. Brake/clutch system repair kit - 02 Sets each

2.15 Technical Literature

- 1 All technical literature pertaining to specifications and engine performance curves shall be submitted along with the offer.
- 2 Successful Tenderer shall provide following catalogues and hand-books with Drivers Manual for each vehicle.

2.16 Warranty certificate against premature malfunctioning of vehicle, accessories and tank (if fabricated locally) during first 100,000 kms or Two year period whichever occurs first.

2.17 Water Bowsers shall be registered in the name of the NWSDB by the supplier and cost shall be included in the Bid price.

3 . 0 TRACTOR TRAILOR MOUNTED WATER BOWSER (3000L)

3.1 The Trailer mounted water bowser shall meet the following minimum requirements:

- * A 3,000 Liters capacity tank suitable for carrying drinking water to be mounted on a suitable trailer chassis.
- * Pumping equipment comprising of a pump of capacity 2000 GPH at a total head of 60 feet driven by P.T.O or separately diesel driven and suction and delivery hoses & valves.

NOTES:

- The four wheel tractor should be suitable for tropical use and also confirmed to the Motor Traffic regulations presently forced in Sri Lanka
- The below specifications are the minimum expected
- Deviations from the specifications should state clearly in the offer
- Manufacturers printed specifications should accompany with the offer
- Registration of the vehicle at RMV and fixing number plates, etc should arrange by the bidder

3.2 CHASSIS

- * Heavy duty frame with cross members
- * Fitted with heavy duty axle
- * Fitted with two (02) large external rear view mirror
- * Power assisted steering

3.3 ENGINE

- * 03 Cylinder four stroke, pressurized water cooled, naturally aspirated Diesel Engine with sufficient power (should be more than 48 Hp) to carry 3000 lt of water load
- * Replacement elements for air, fuel and oil filters
- * Dry replaceable paper element or air bath type air cleaner
- * Direct injection
- * Vertical exhaust type

3.4 TRANSMISSION

- * Heavy duty dry single plate clutch
- * Gear box with 08 forward & 02 reverse with low/ high gears
- * Dry disc mechanical break
- * Manual operated mechanical parking break

3.5 INSTRUMENT PANEL

Instrument panel shall include the following;

- * Speedometer
- * Odometer
- * Trip counter
- * Warning lamp for low oil pressure, hand brake,
- * Battery charging
- * Fuel gauge
- * Coolant temperature gauge

3.6 ELECTRICAL SYSTEM

- * 24/12 V direct starting system complete with heavy duty batteries
- * Alternator
- * All standard lighting to meet motor traffic regulations of Sri Lanka.
- * Direction indicators in front and rear
- * Swiveling type wide beam light fitted on top of cab for night work.
- * Audible warning device to operate when reversing.

3.7 WHEELS

- * Single front wheels& rear wheels
- * Single trailer wheels

3.8 CONSTRUCTION OF TANK UNIT & TRAILER

- * The tank capacity shall not be less than 3,000 Liters.
- * The tank is to be of elliptical section with dished ends and internal baffle plates.
- * The tank shall be of all steel welded construction with steel plates of minimum thickness of 3 mm
- * The bowser tank shall be internally protected against corrosion and method of protection is to be clearly indicated.
- * The tank compartment shall have a minimum 150 mm, diameter filing port cover fitted with quick locking device.
- * The compartment shall have manhole(s) at top, of minimum diameter 400 mm. with hugged cover fitted with quick locking device top enable inspection and cleaning of the tank,
- * The compartment shall have a bottom drain plug.
- * Trailer frame should be constructed with suitable steel having the thickness more than 6mm. firmed with cross bar supports to carry the loaded tank.
- * Trailer frame should be provided with parking legs to enable to park without the tractor.
- * Tow bar should be circular type and thickness should not be less than 6mm.
- * Wheel should be suitable for the loaded tank and the rim should be lock type
- * Built in lockable compartments for hoses and tools shall be incorporated.
- * The tank is to have catwalks at the sides and top with steel ladder access.
- * The operation controls and valves shall be well placed for easy operation and

- clearly marked.
- * The unit shall comply with international safety regulations.
 - * Two (02) 04 meter lengths of acid resistant suction hoses with fittings shall be provided.
 - * The unit shall be complete in all respects, installed and tested prior to handing over to the buyer. One extra discharge hose of 10m length with fittings shall be provided.
 - * Anti corrosive food grade type paint should apply after sand blasting and surface preparation.
 - * Food grade type internal coating should apply on the tank surface.

3.9 WATER PUMP

- * Mounted on the truck, pump should be driven by a power take off or diesel engine driven. Suction height 20' delivery height 40' capacity of 2000 GPH.

3.10 NOTE OF BODY FITMENT & TANK

- * No metal to metal contact between the body sub frame and the vehicle frame shall occur.
- * Body holding down bolts shall be of the type which positively secures the body sub frame to the trailer frame without there behind any welding to the trailer frame.
- * Any metal clamp around the frame shall have balata being used or equivalent to prevent metal contact.
- * In the case of open frames the frame shall be supported internally at such point by a treated hardwood block.

3.11 WELDING

- * All welds are to be of good standard and to cover the full lengths of the body joint.
- * Where distortion is liable to occur the weld may alternate from side to side of the joint with gaps not exceeding 50% of the length of the joint on either side.

3.12 FITTINGS & ACCESSORIES

- * Manufacturers standard tool kit including an 04 tons (approx.) Hydraulic jack with handle and wheel nut and pipe wrenches shall be provided.

3.13 FUEL CONSUMPTION

Minimum fuel consumption and respective speeds to be indicated

3.14 TECHNICAL LITERATURE

- * All technical literature pertaining to specifications and engine performance curves shall be submitted along with the offer.
- * Successful Tenderer shall provide following catalogues and hand-books.
 1. Drivers Manual for each vehicle.

3.15 Warranty certificate against premature malfunctioning of tractor and accessories during first 20,000 kms. or one year period whichever occurs first.

3.16 Registration in the name of the NWSDB shall be done by the tenderer and the cost shall be included in the tender price.