

TNPA FIRE AND EMERGENCY SERVICES

Bakkie Pump – Skid Unit Specification

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TECHNICAL SPECIFICATION FOR A 4X4 SKID UNIT

1. CHASSIS AND CAB

CHASSIS

Drivers Cab:	Two door metal cab with adjustable driver's seat
Engine:	Minimum 3.2 litre Diesel
Transmission:	minimum 5 speed manual with 4 x 4 drive, and electronic shift on the fly Rear diff lock standard
Performance: 1500 rpm	Minimum 147 kW @ 3000 rpm with a torque of 470 Nm @ 1500 rpm
Suspension:	Super spring will be added to accommodate constant load
Steering:	Right Hand Drive
Wheels:	16"7 Alloy Wheels 255/70R16
Brakes:	ABS with EBD and ESP with DSC
Standard Features:	Minimum: Airbags, Hill Descent Control, Hill Launch Assist, Rollover Mitigation, Adaptive Load Control, Alarm, Air-conditioner, Immobilizer & park assist if possible.
Fuel Tank:	Minimum 80 Litres
Ground Clearance:	237mm
Towing Capacity Braked:	3350kg

The vehicle shall be fitted with a replacement type bulbar with mounted winch. The bulbar shall have mountings for a winch. A 3500kg winch with at least 30-meter cable shall be mounted on the bulbar. A Tow hitch shall also be fitted on the rear and the front of the vehicle.

2. HIGH PRESSURE FIRE FIGHTING PUMP

The vehicle shall be fitted with a high-pressure pump, with the following specifications:

The module shall consist of an engine, Single stage centrifugal pump, with two 20mm discharges for hose reel attack complete with pistol grip type nozzle (37 -150 lpm flow), a water tank with minimum capacity of 600 litres.

One 65mm BIC discharge c/w Ball valve control as part of discharge on pump.

Suction plumbing from tank to pump and two inlets on tank for water supply from hydrants.

An outsource suction of at least 50mm c/w shut off valve to be fitted, with 65mm BIC couplings.

The engine and pump shall be mounted on anti-vibrant silent blocks at the rear of the bakkie.

This will be mounted on the retro fitted Aluminium rear locker compartment, locker to be suitably reinforced to hold weight of two hose reels and the pump/engine module.

The pump to have the following performance requirements:

PUMP ENGINE SPECIFICATIONS

- Honda 20hp at 3600 RPM, air cooled engine.
- V-Twin cylinder gasoline engine.
- 12V electric start.
- Min. 6 gallon (22 l) detachable fuel tank. The fuel tank is made from plastic.

PUMP UNIT SPECIFICATIONS

- Transmission drive single stage centrifugal pump.
- Pump body made from resistant aluminium alloy.
- Bronze impeller.
- Mechanical shaft seal.
- Stainless steel pump shaft.
- All 50 mm piping shall be 316 stainless steel (polished interior and exterior)
- Sieves to be included on the inside of all male couplings
- Belt drive transmission. (Gear Driven Not acceptable)
- "V" belts to have adequate protection
- Pump to be fitted with low water switch to cut off the engine and prevent the pump from running dry
- Fuel tank refuelling: to be ergonomically designed with safety in mind. Top filling should be avoided to prevent fuel spillage over hot surfaces. Warning and instruction stickers should be placed on the tank for filling information



- Exhaust priming system guaranteed up to 15' (4.5 meter) lift.
- One 1 1/2" (38 mm) delivery outlet with 1/4-turn ball valve.
- One 2 1/2" (65 mm) suction inlet with stainless steel sieve.
- Dimensions: Length: 21 1/4" (539 mm); Width: 27" (585 mm); Height: 20 7/8" (530 mm). C/w Roll cage and rear pump LED type work light.
- Weight: 175 lbs (80 kg).

INCLUDED ACCESSORIES

- Minimum 36-watt alternator.
- Low oil alert.
- Pressure gauge.
- 12-V battery.
- Minimum 20 Litre Jerry Can for reserve fuel

High pressure pump to comply with the following:

Flow: Single stage centrifugal pump capable of delivering a minimum of 350 ℓ/min @ 11.5 Bar with maximum flow 568 ℓ/min @ 3.5 Bar.

Intake: 50 mm Minimum

Pressure: 20 Bar.

Pump Casing: High strength aluminium alloy.

Impeller: 123.83 mm minimum manufactured from Silicon Bronze balanced and splined to pump shaft.

Primer: Exhaust Venturi 508 mm HG.

The two stainless steel axial feed hose-reels with rewind handle and locking device shall be installed with the pump and shall have the following characteristics:

The hose reels shall be supplied with each 19 mm x 50 meter single wire braided rubber hose. This shall be equipped with geka couplings at the ends.

3. WATER TANK

A 600 litre capacity water tank shall be provided. The tank shall be manufactured of non-corrosive polypropylene. The position of the tank shall ensure the lowest possible centre of gravity. It shall also be secured to the Load body not so to interfere with the warranty of the chassis manufacturer. Baffles should be included in the tank to prevent instability of the vehicle due to water mass.

A manhole inspection lid of 400mm shall be provided. The manhole can also be used for top filling of the water tank.

4. EQUIPMENT COMPARTMENT

One aluminium equipment compartment shall be fitted at the rear of the load box. The compartment shall be ventilated and enclosed to prevent water entering the compartment. Drain hole to be included.

5. ELECTRICAL

Electrical wiring and cables shall be fastened to the frame or body structure of the apparatus and shall be furnished with protective looms, grommets, and other devices at each point where they pass through body panels or structural members or wherever they lay against a sharp metal edge. Where any through-the-frame connectors are provided, any such connector and/or wiring shall be protected from shearing or tearing.

The body electrical system shall be designed specifically for the apparatus body. All wiring shall run via a clearly marked fuse box indicating the final destination of the wiring.

A touch control 200 watt Dual-siren – PA (memory control) with Hyper, Yelp and auxiliary tones with a hardwired microphone, PA system and speaker shall be provided and mounted inside cab. In addition, the vehicle shall have a reverse warning beep. The apparatus shall have the following emergency lighting equipment. Lightning shall comply with all aspects of SABS.

One Linear type LED light bar GEN 3 1 watt, 6 LED in a cluster shall be mounted on chassis cab roof. (No holes to be made on roof to secure light bar)

Flasher type LED marker lights consisting of 4 LED Gen 3 1 watt, red, situated two on front of the bumper and two at rear of the load body.

The battery should have the capacity to accommodate all extras (lighting, sirens, winch, etc.) and have a battery isolation switch.

A copy of the electrical drawings shall be provided with the vehicle.

6. PAINTING

The exterior faces of the front and rear wheels shall be standard chassis colour.

The apparatus body shall be painted fire engine red. The colour code or a paint sample shall be supplied to the TNPA Specialist: Fire and IMDG before commencing with the painting of the vehicle.

7. LETTERING AND REFLECTIVE SAFETY STRIPE

White reflective 3M striping shall be fitted to the vehicle. This striping shall fitted each side of the vehicle to the satisfaction of the TNPA Specialist: Fire and IMDG.

8. MISCELLANEOUS

8.1 KEYS

Two (2) sets of keys shall be supplied for the following:

- Ignition
- Cabin doors
- Locker doors

8.2 ACCESSORIES

One (1) each of the following accessories shall be supplied.

- Vehicle hydraulic jack with handle
- Wheel wrench
- Pair of reflective triangles
- 6 x foldable traffic cones (with LED lights)

8.3 MANUALS

The following manuals shall be supplied:

- One (1) x vehicle operator handbook
- One (1) x operation manual
- One (1) x equipment catalogue
- One (1) x electrical drawing

9. WARRANTIES

Tenderers are required to state the guarantee offered on the following:

- Chassis cab - minimum 5-year warrantee
- Equipment - minimum 5-year warrantee
- Pump - minimum 5-year warrantee
- Paint - minimum 5 years warrantee
- Water tanks - shall have a lifetime warrantee

10. SERVICE REQUIREMENTS AND FREE SERVICE:

The service provider shall provide detailed information on warranties pertaining to the whole bakkie pump including all fixtures and accessories and must include a detailed service plan.

Preference will be given to suppliers who will be able to perform routine repair work on site (at the port Fire Station).

The service provider shall guarantee to keep sufficient stocks of spares for critical components of the bakkie pump and pumping system in the RSA for scheduled maintenance of the equipment, according to the manufacturer's maintenance schedule.

The service provider shall state the amount and type of spare parts that will be kept in stock for emergency repair purposes.

The service provider shall state what the maximum delivery time will be if spare parts have to be imported.

The service provider shall state in their tender what free services are included in their offers and where these services will be carried out.

The service provider shall be required to supply proof of their technical ability to repair and service the vehicles/equipment offered.

11. EQUIPMENT

The following equipment must be included & fitted:

- 2 x 475 l/min pistol grip nozzles
- 3 x 38mm x 30m rubber fire hoses (Dura-line or similarly approved)
- 3x 65mm x 30m rubber fire hoses (Dura-line or similarly approved)
- 2 x complete sets SCBA
- 2x SCBA spare cylinders
- 1 x hand-controlled dividing breeching
- 1 x hand-controlled collecting breeching
- 1 x aluminum standpipe (RCB standpipes must have female coupling on both ends)
- 2 x LED intrinsically safe Torches (vehicle mounted and rechargeable)
- 1 x set of keys for tamperproof hydrants
- 1 x metal spade
- 2 x grass beaters
- 2 x wheel chocks
- Vehicle mounted multi-channel two-way radio TWR with extension speaker/mike at the pump and 2 x portable radios.
- 2 x 9kg stainless steel DCP extinguishers
- 2 x All Purpose CLASS A & B firefighting foam, foam must be UL 162 certified and NFPA 11 & 16 compliant, also ICAO Level B approved, and EN 1568-3:2008 approved. Foam will be used for following applications, Class A, B, C, D, and K fires.
- 2 x manually operated telescopic bar fitted with 1000+/- watts each LED Flood lights with separate switches. Switches shall be ergonomically positioned.
- 1x petrol chainsaw.

**SIGNATURES:**

Reviewed by:

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29/07/2022

Date

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Date