

## Technical Specifications

### Fighting Fire Vehicle of 4000 liter water tank with 500 liter Foam Tank

#### 1. Unit

S.N.	CRITERIA	REQUIREMENT	OFFERED SPECIFICATION
1	General	The Fire fighting vehicle of capacity <b>4000 liters water tank and 500 liter foam tank capacity</b> water tender as per IS: 950 shall be designed and manufacture. All material used in fabrication construction of the vehicle shall be new as per International standard	Make: Model: Mfg. year:- Country of Origin:
2	Engine	Turbocharged intercooled diesel Engine, 6 Cylinder with Min. <b>5000 CC developing Maximum rated power output not less than 160 HP at governed RPM with torque min. 550 NM @ governed RPM</b> , engine fully equipped with accessories for efficient full load operation of the vehicle at operating conditions. The Engine shall be fully equipped with all necessary items/ accessories and controlling devices for safe, smooth, efficient, economical operation and optimizing vehicle performance producing lesser amount of pollutant emission.	Make: Model: Mfg. year:- Country of Origin:
3	Water Tank	Water tank shall be not less than <b>4000 liters water and 500 liter foam tank capacity</b> suitably mounted on the chassis after the cabin so as allow full contents to flow to the pump. The tank shall be fabricated with MS plate having bottom sheet not less than 5 mm thickness and other sheet of minimum 4 mm thickness suitably epoxy coated from inside. The tank shall be of sound welded construction & shall be fitted with suitable baffle plates not less than 3 mm thickness. An inspection hole of not less than 450 mm size shall be provided on top and other necessary arrangement as per standards.	
4	Pump	<b>Rear mounted Multi-pressure pump. With output – 1800 LPM at 7kg/cm<sup>2</sup> and 200 LPM @ 20 Kg/cm<sup>2</sup>. Deep lift test of the pump from 3.0 Mtrs (after considering the allowances as per IS-950-1980, 15 to 18 sec). The pump Shaft and wiring rings should be made of stainless steel. The bearing should be made of C.I All studs/ bolts coming in contact with water should be stainless steel. Having one suction inlet of 100 mm round threats conforming IS-902-1974 and two numbers of 63 mm delivery outlets having push down</b>	

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		type valves fitted with instantaneous couplings as per IS-903-1993. The delivery valve screw should have no gland. One 19mm bore High Pressure Hose shall be provided with a High Pressure Discharge Gun rated to deliver 200 LPM. 60 mtrs. Of High Pressure hose shall be provided.	
5	Primer	At normal temperature and pressure conditions (NTP) this type of at its recommended optimum speed (2000 to 2400) should prime the pump from: 3.0 mtrs ..... Within 15 seconds to 18 seconds 7.0 mtrs ..... Within 24 seconds to 30 seconds The pump should attain dry vacuum 640 mm of hg. The primer should disengage automatically at a pump pressure of 1.5 to 2.0 kg/cm <sup>2</sup> bar. (Primer should be automatically engaged and disengaged) self-priming.	
6	Cooling System	Indirect cooling system of open circuit type consisting of special heat exchanger shall be provided to the vehicle to enable full power outlet to be maintained during pumping without overheating and hot water is discharged to waste.	
7	Power Take Off (PTO)	The Power Take Off would be heavy duty indigenous origin of VAS Make Model V3N Mechanically & Pneumatically controlled having ratio 1:1.48 and the lever for engaging the power take off shall be provided in the Driver's cabin.	
8	Monitor	<b>One water cum Foam Monitor of 1400LPM @7 kg/cm<sup>2</sup> capacity will be provided on top of the tender in such a manner that a member of fire crew can operate it mutually. The monitor will be capable of traversing through 360° in a horizontal plane. Elevating from horizontal to 45° &amp; depressing from horizontal to not less than 15° and will be capable of projecting the foam discharge to an effective to an effective distance of not less than 35 mtrs. in still air when operated at the design pressure.</b>	
9	Chassis	The tender shall be fabricated on truck/tipper chassis of appropriate size. Drag hook or eye of adequate strength shall be provided at the rear and front.	
10	Hose Reel	2 Nos 60 m X 19 mm hose shall be provided near the control panel.	
11	Ladder Gallows	Gallows to carry 7.5 mtrs. Extension ladder would be provided on the appliance.	
12	Dry Chemical Powder	2 X 25 kg. each DCP cylinders with Hose Reel shall be provided.	
13	Stability	Fully laden vehicle shall be tested for stability test at 27.5 degree and the vehicle shall not topple down. Gradient	

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		test shall be carried out at 1:4.	
14	Control Panel & Instruments	Analog Control Panel with pressure gauge, compound gauge, water tank level, foam tank level, glass tube type The priming system should be fully automatic in action and require no attention whatsoever from the pump operator other than throttling the engine once the pressure is achieved even at engine idling speeds.	
15	Gradibility	<b>Not less than 29 %</b>	
16	GVW	Not less than 16000 kg Chassis wheel base between <b>3600mm to 4800mm</b>	
17	Ground Clearance	<b>Minimum 250 mm</b>	
18	Cab	The front compartment of driver's cabin shall all steel construction with insulated roof, right hand drive, laminated glass windscreen, wipers, glass windows on doors, and shall be provided with two independent foam cushioned seated for driver and an officer. Driver's seat shall be adjustable. Rear compartment should be provided with fixed cushioned seat for at least 5 crew men.	
19	Essential Accessories	The following accessories shall be supplied / fitted on the appliance. <ul style="list-style-type: none"> <li>• Head light, tail and rear light and turn signals</li> <li>• Cabin lights</li> <li>• Spare wheel with tire and tube</li> <li>• Fog light at front</li> <li>• Fire Bell</li> </ul> Additional equipments/Accessories as per <b>Accessories/Equipments List.</b>	
20	Clutch	Heavy duty disc type	
21	Transmission	Manual shift at least <b>Six</b> forward and <b>one</b> reverse.	
22	Emission Standard	<b>The Emission Standard of the vehicle should comply with the Vehicle Mass Emission Standard of Nepal.</b>	
23	Suspension	Semi-elliptical Multi Leaf springs at front and rear.	
24	Tires	Standard Size.	
25	Steering	Power Steering	
26	Brakes	Full Air S- Cam Brake with ABS.	
27	Color	Painted in fire red with proper under coating.	
28	Axles	Front: Heavy Rear: Single reduction Extra Heavy Duty	
29	Instructions	All signs and instructions in the equipment shall be in English	
30	Manuals	One copy of the Operator's and Owner's Instructions and	

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		Maintenance manual in English shall be supplied with each equipment/vehicle	
31	Proven performance	1. The tender offered shall be a current model under standard production by the manufacturer for at least one year. 2. The bidder shall provide the manufacturer's data of the performance of the unit to include the fuel consumption, performance curve of the engine and production capacity of the unit.	
32	Warranty	Manufacturer shall provide a minimum of one year warranty after acceptance.	
33	Related Service	The supplier shall arrange and conduct training at own cost for two operators for a period of one week in Nepal in operation, maintenance and /or repair of the equipment	
34	Delivery	<b>1 Unit Fire Fighting Vehicle of 4000-liter water tank with 500 liter Foam Tank with accessories shall be Delivered.</b>	
35	Authorization	Authorization letter from Manufacturers company is compulsory. <b>The Bidder shall submit Manufacturers Authorization letter for Chassis, Pump, PTO and Ladder during the time of delivery.</b>	

**Note:**

The major items are indicated by bold and highlighted letters/alphabets/figures in the technical specifications. Non-compliance of these major items will result in non-responsiveness of the bid offered.

Bidder's Signature..... Date

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### ACCESSORIES / EQUIPMENT LIST

S.No.	Description	Unit	Qty	Comply/Non-Comply	Remarks
1.	Extension Ladder 7.5M	No	1		
2.	Armored Rubber Suction Hoses 100mm dia. 25 Meters Length fitted with round threaded male and female coupling Heavy duty, made of copper alloy of 100mm size.	Nos.	4		
3.	Non-Percolating 63mm × 15 meters flexible fire fighting delivery hose of three layered synthetic jacketed, with elastomeric outer covering, resistant to liquids, chemicals, acids alkalis, solvents, abrasions & heat, having 42kg/cm <sup>2</sup> burst pressure and bonded with gun metal ISI Marked & MMD approved instantaneous male and female coupling	Nos.	10		
4.	Suction Metal Strainer – 100mm size	Nos.	1		
5.	Basket Strainer – 100mm size cylindrical	No.	1		
6.	Dividing Breaching with Control Valve made of light alloy	No.	1		
7.	Collecting Breaching -63mm size made of light alloy	No.	1		
8.	Suction wrenches for 100mm suction couplings Universal types	Pair	1		
9.	Long line 50 mm circumference 30 meters long each	Length	1		
10.	Short line 50mm circumference 15 m long	Length	1		
11.	Hose Bandages rubberized	Nos.	10		
12.	Hose Clamps	Nos.	2		
13.	Hydrant Valve Key and Bar	Set	1		
14.	Fog Nozzle made of gunmetal with extension applicator with fog head	No.	1		
15.	Gunmetal nozzle if sizes 12 mm, 16mm, 20mm, 25 mm and 32 mm (one each)	Nos.	5		
	Adaptor for 100mm suction female screw coupling and 63 mm male instantaneous	Nos.	2		
	Adaptor double female instantaneous patten 63 mm	Nos.	2		
	Adaptor double male instantaneous patten 63mm	Nos.	2		
16.	Nozzle spanner	Nos.	2		
17.	Hydrant Standpipe two ways	No.	1		
18.	First Aid Box of 12 Person	No.	1		
19.	Asbestos gauntlets (in case)	No.	1		
20.	Axe-Large	No.	1		

  
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21	Spade	No.	1		
22	Pickaxe	No.	1		
23	Crowbar	No.	1		
24	Sledgehammer	No.	1		
25	Carpenter's saw	No.	1		
26	20 Ton capacity Hydraulic Jack	No.	1		
27	Fire Hook	No.	1		
28	Tool Kit	No.	1		
29	ABC Multipurpose type Fire Extinguisher, 2 kg Capacity	No.	1		
30	Fire Proximity Suit Complete set as per EN469 Standards. Certificate of the above standard to be submitted along with the bid.	No.	4 set		
31	Portable Fire Fighting pump as per Annexure – 1	No.	1		
32	Constant Flow Handheld Nozzle as per NFPA standards. Certificate of the above standard to be submitted along with the bid.	No.	2		
33	Portable Emergency Inflatable Lighting Tower of minimum 4.5 meters that is to be powered by 1.5 KVA Genset.	No.	1		

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Annexure - 1

Specification of Portable Fire Fighting Pump

Required specification		Offered specification
Pump	Singe Stage centrifugal	Make: Model: Country of Origin:
Rated Performance	275 LMP @ 4.2 kg/cm <sup>2</sup>	
Maximum Discharge	500 LPM	
Fuel	Petrol/diesel	
Engine	Briggs & Stratton or Equivalent Single Cylinder 4 stroke Gasoline Engine	
Engine Power	6.5 HP @ 3600 RPM	
Priming System	Hand Priming System, capable of lifting from min 7.5 mts depth	
Suction	75 mm	
Deliver Outlets	63mm x 1with screw down type valve	
Weight	Not more than 58 kg (With Battery & Oil)	
Dimensions	Not exceeding L – 500 x W – 450 x H – 450 mm	
Authorization	Authorization letter from Manufacturers company is compulsory. <b>The Bidder shall submit Manufacturers Authorization letter for Chassis, Pump, PTO and ladder during the time of delivery.</b>	

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