

**Technical specification of Fire Fighting Vehicle  
MAN TGM 18.320 4x4 [6500 + 500 ]**



Illustrative photograph

This specification covers the supply of a SZCZESNIAK SPECIAL VEHICLES Universal fire fighting vehicle, The vehicle has been designed for effective firefighting in high risk fire areas. It is equipped with a water tank and a foam compound tank, and is designed to operate from open water sources, fire hydrants or its own tank supplies. The vehicle is capable of operating at high ambient temperatures and in salt laden, high humidity atmosphere. In the design, simplicity of operation, ease of maintenance and repairs, have been given particular care, but special emphasis has been given to the vehicle's prime purpose, namely simple and speedy extinguishing agent discharge. The fire vehicle can be used with all types of foam making concentrate including AFFF and with soft, black or with sea water.

All components of this vehicle are based on approved products, constantly improved and developed. This is the guarantee for absolute reliability and safety of operation. The engineering and construction of all SV SZCZESNIAK products is conducted in conformity with procedures of the ISO 9001 standards. Moreover, SV SZCZESNIAK has been certified conform with the Environmental Management Standards as laid down by ISO 14001 / EN 14001, the sign of the company's constant ecological commitment towards protection of our environment.

## Chassis

Fire vehicle will be built on following chassis.

<ul style="list-style-type: none"> <li>• Model : MAN TGM 18.320</li> <li>• Cabin : 1+1</li> <li>• Drive: 4x4</li> <li>• Engine type: Euro V</li> <li>• Engine power: 320 HP// 235 kW</li> <li>• Wheelbase: 420 cm</li> </ul>	<ul style="list-style-type: none"> <li>• Total weight GVW: 18 000 kg</li> <li>• Suspension front: Steel suspension</li> <li>• Suspension rear: Steel suspension</li> <li>• Tires: twin tires</li> <li>• Color : RED</li> <li>• Cabin with A/C</li> </ul>
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## Control panel at driver cabin

In the driver cabin a control panel for operation and control of the superstructure is mounted at the original dashboard with an individual adjustable bracket. The control panel is visible from driver and co-driver. The following list of functions is only an example and it will be adjusted accordingly to the equipment of the vehicle.



## Sub frame

A channel section steel sub frame is fitted to ensure even weight distribution of the superstructure over the length of the chassis rails. The design and mounting method allows the chassis to flex independently from the sub frame without damaging the bodywork. All additional mountings and bracketry are fixed directly to the sub frame and treated to ensure low maintenance and maximum corrosion resistance.

### Water tank

**The water tank has a capacity of 6500 liters**, and is made of corrosion proof glass-fiber reinforced polyester (GRP), finished with a special and appropriate protective topcoat. The tank is equipped with removable baffle walls which are incorporated along transversal and parallel sections. The water tank is elastically mounted on the chassis runners, according to the "Technical Bodybuilders Handbook" of the chassis manufacturer.

#### Further outfit :

- 1 Manhole with seal and screw locks
- 1 Tank to pump suction connection.
- 1 Tank filler neck to refill the tank out of open water sources by the centrifugal pump.
- 2 Hydrant inlet, with fixed and blank cap and ball-shut-off valve.
- 1 Overflow pipe with overflow protection, also acting as airing and ventilation system.
- 1 Water tank level indicator at the pump stand.

### Foam tank

The rectangular **foam tank has a capacity of 500 l** and is entirely made out of glass-fiber reinforced polyester (GRP); resin according to ISO R75 A HDT 96°C, ISO-NPG, AFFF resistant. The foam compound tank, integrated in the water tank is suitably protected with removable baffle walls.

#### Foam compound tank outfit :

- 1 Tank to proportioning system connection with ball shut-off valve.
- 1 Filler and drainage with fixed and blank cap and ball shut-off valve.
- 1 Overflow pipe with overflow protection, also acting as airing and ventilation system.
- 1 Foam tank level indicator at the pump panel.



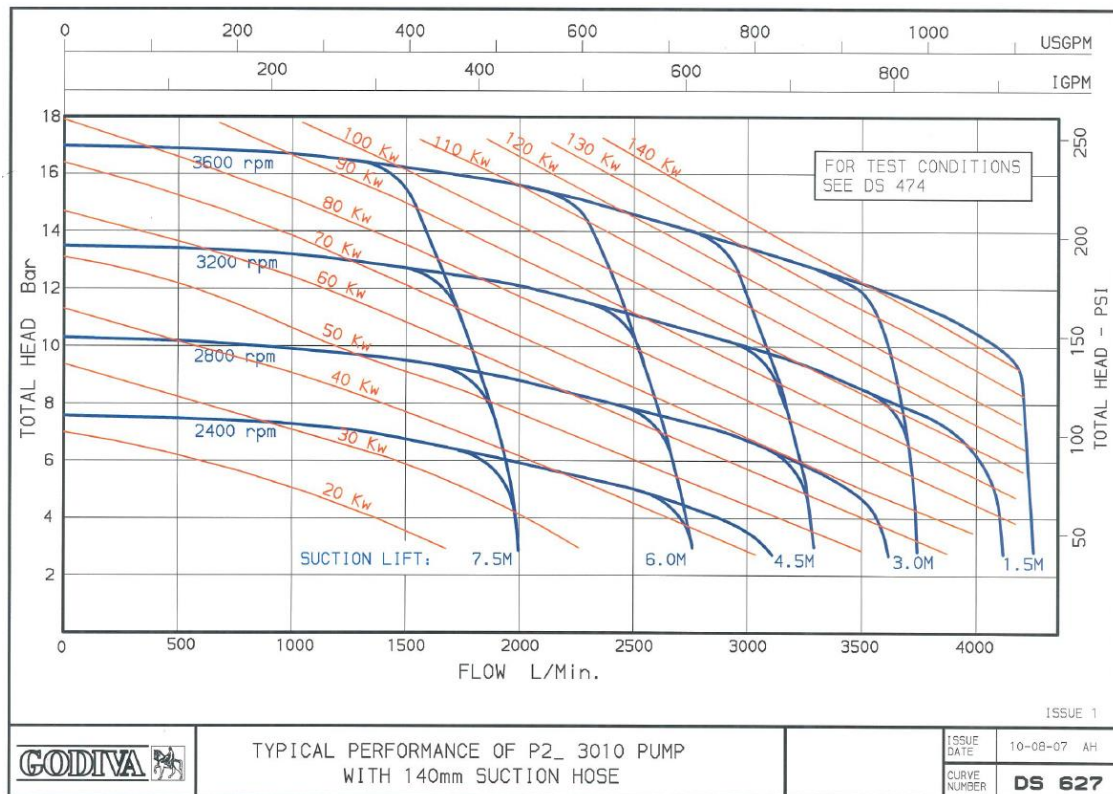


**Firefighting centrifugal pump**

Latest model fire pump **GODIVA** , twin-pressure, middle center rear mounted and powered by the central power take-off of the chassis, with fully automatic primer sucking water out of a suction height of 7,5 meters within 30 seconds. Nominal performance **3000 liter/minute at 10 bars** outlet pressure in low pressure operation and 250 liters/minute at 40 bar. The centrifugal pump will be driven by the vehicle PTO. Engagement of the PTO will be done from the cabin.

Pump can be used for feeding from open water sources (negative pressure) or from hydrants or other pressurized water points (positive pressure). Emergency manual overrides for the water tank and foam tank valves are located in the fire pump/foam-proportioning locker. All suction and delivery pipe work is manufactured from corrosion resistant stainless steel or high pressure flexible tubing and is sized to keep frictional pressure losses to a minimum.

**Pump curve :**



**Pump outlets :**

- 1 x Suction inlet 4" diameter, fixed with blank cap. Inlet provided at the rear central.
- 1 x Delivery manifold with the following outlets:
  - 4 x Low pressure delivery outlets at the rear left/ rear right side of the vehicle.
  - 1 x Low pressure outlet with shut-off valve for the monitor located on the roof
  - 1 x Low pressure outlet to the hose reels.

## Fire pump control

The fire pump control panel at the rear of the vehicle includes:

- 1 Engine revolution counter with hour counter
- 1 Engine throttle
- 1 Pump suction pressure gauge (manovacuummeter)
- 1 Low pressure gauge for waterpump
- 1 High pressure gauge for water pump
- 1 Water liquid tank level indicator
- 1 Foam liquid tank level indicator
- 1 Indicator warning light for engine oil pressure / engine water temperature
- 1 On/off indicator for water pump (engine)

Instrumentation panel is illuminated for night use. All instruments and gauges are water- and oil resistant and indications are in end user language.



## Foam generator

An **manual adjustable around the pump foam admix system** is installed. The foam admixing ratio can be selected manually from 3 % till 6 %. Water/foam mixture will be available at all low pressure delivery outlets, the monitor and at the hose reels. Both from tank either external source. Admix system made out of brass material.



### **Roof Monitor**

A water and foam monitor, equipped with a foam aspirating tube, is installed on top of the pump compartment, at the rear of the vehicle, and can be operated from the roof. The monitor made out of stainless steel is suitable for water and for both AFFF and FP foam agents.

Monitor is capable to traverse horizontally by 360 degrees, to be elevated by 80 degrees from the horizontal, and to be depressed by 20 degrees, which is largely sufficient for all types of interventions. **The roof monitor are 1600 – 2400 liter per minute water/foam mixture at 8 to 10 bars.**



### **Mid pressure hose reel (1)**

A high pressure handline hosereel is provided, fitted in the rear compartment next to the pump compartment, holding min 60 meters diameter (DN25) rubber hose, equipped with multi-purpose hand control branch pipe. The reel is equipped with a friction brake in order to keep the reel in position. Appropriate guide rollers, with ball bearings, chromium plated, are provided. Unwinding is executed manually. Rewinding is done with the help of an electric engine. In case of electric failure, rewinding can be done manually by means of a convenient worm-gear system.



### Electrical outfit

- 2 Head lights groups containing the direction indicators, the stand light, the high beam and the low beam. Headlamps are protected.
- 2 Tail light groups containing the direction indicators, the stop light, and the reverse
- 2 Reverse lights coming on automatically, when the reverse gear is engaged.
- 1 Fully automatic interior illumination for the pump and equipment lockers.
- 2 Blue flashing lights at the front of the vehicle, mounted on the radiator grill.
- 2 LED beacons, blue color, on the roof of the crew cab.
- 1 LED beacons, blue color, on the top of the superstructure body.
- 1 Siren/public-address system with vehicle amplifier, loudspeaker and microphone. The microphone contains the volume adjuster; the P.A. system overrides the audible warning system by only pushing the volume regulator of the microphone. The minimum output of the P.A.-system is 100 watt.
- 7 Scene lights on the superstructure, 3 at each side of the vehicle and 1 at the rear side.





## **Bodywork**

All materials used for the construction of the superstructure are completely new and free of defects. Very close attention is paid to the choice of the different materials and the anti-corrosive treatment. The bodywork of the vehicle is made of aluminum profiles and anti-corrosion treated hot-galvanized steel or aluminum panels. The main structure is made of anodized extruded aluminum profiles, optimized strength and weight, built on a sub frame and solutions that offer integrated multi-function with a significant benefit in the usable space inside compartments.



**A total of 5 roller shutters are provided:** 2 on each side of the vehicle and 1 at the rear of the vehicle. The roller shutters are made of light alloy double profiled units, which are fixed together by means of a synthetic joint. This synthetic profile is self-lubricating and resists extreme temperature changes. The roller shutters are water and dust tight.





All materials and equipment are fixed in such a way that damage or blocking of the roller shutters is avoided. Place for extension ladder and the suction hoses are stowed on the roof, a stable ladder with non-slip steps is fitted at the rear of the vehicle for easy access. The roof is covered with non-slippery plates and is bordered by a gallery. The necessary protection plates and hand rails are provided.



All equipment in superstructure are securely fastened by means of rattle-free fixings. Heavier equipment is fixed on telescopic runners or on sliding frames.

### **Painting and identification**

Rims, protection grid in front of the engine, chassis frame  
Crew cabin, fire-fighting superstructure

Black or dark grey  
Red RAL 3000

**Similar vehicles / illustrative photograph**



The data and information given in this specification are not covered by the automatic update Service. We reserve the right to make general design modifications and technical improvements. SZCZESNIAK SV also reserves the right to substitute alternative items of equipment should original equipment envisaged become obsolete or unobtainable. We guarantee however that any such substituted parts or equipment will be of equal or superior design and quality. Drawings and photographs may show optional equipment available at extra charge only. Optional features, if selected, may influence the weight of the appliance.