

# **SCOPE OF WORKS PERFORMED DURING OVERHAUL AND MODERNIZATION OF CAS 32 T 148 6X6 FIREFIGHTING VEHICLE**

## **VEHICLE DESCRIPTION**

Water Tender built on three-axle chassis, equipped with centrifugal water pump, 6000 litre water tank capacity, 600 litre foam concentrate tank capacity, roof monitor and hose reel with 60 metres of hose.

## **CONTENTS:**

1. Chassis
2. Superstructure
  - 2.1. Body
  - 2.2. Tanks
  - 2.3. Pumping equipment
  - 2.4. Monitor
  - 2.5. Wiring
3. Surface finish
4. Warranty
5. Other provisions
6. Appendix No. 1, Standard accessories layout

## **1. CHASSIS**

- Engine overhaul, including engine testing on test bench
- Gearbox overhaul
- Auxiliary gearbox overhaul
- PTO overhaul
- Front axle overhaul
- 1<sup>st</sup> rear axle overhaul
- 2<sup>nd</sup> rear axle overhaul
- Steering overhaul
- Frame overhaul, main parts of vehicle frame are sand-blasted separately
- Air system overhaul, including overhauls of all components
- Cab overhaul; it is equipped with a new upholstery and anatomically shaped driver's seat. Seat for two passengers equipped with integrated B.A. brackets and head-rests.
- Electric wiring overhaul
- Chassis lubrication
- Installation of voltage converter 24 V/12 V
- Installation of fog lamps
- Installation of map reading light near officer's seat
- Installation of compressed air connection located close to the driver's entry, including protective cap
- Overall chassis & cab painting, including anticorrosive treatment of cavities and cab bottom.

Only genuine spare parts are used for the chassis overhaul.

## **2. SUPERSTRUCTURE**

### **2.1. BODY**

- New body sides (extrusions replaced with flat sides)
- New panelling made of double-sided galvanized plates bonded to body frame and sealed
- New shape of rear mud-guards
- New enclosed rear compartment with cabinets for accessories on both sides and at rear (cabinets and shelves for accessories made of aluminium plates and profiles)
- Front aluminium roller shutters are enlarged towards driver's cab – new storage spaces for accessories are created
- Openings in the rear compartment and on both vehicle sides are closed with aluminium roller shutters
- Storage space accessible from the rear is closed with aluminium roller shutter
- Installation of electronic water & foam concentrate level gauges, with indicators on left and right control panels
- New modernized pumping equipment control panel
- Modification of pumping equipment ball cocks acc. to up-to-date model
- Flap for suction from tank is pneumatically operated with possibility of emergency manual control
- Pump and ball cock drainages are discharging into one point underneath the vehicle body

- Piping for tank filling from hydrant is below the rear roller shutters
- Installation of electric hose reel in the rear compartment
- New DN 25 non-collapsible hose, 60 m long, including SUPON TURBO 25 multipurpose nozzle
- Installation of reflective boards on the rear wall of the vehicle
- Temporary location of spare wheel on the top platform
- Electric wiring reconstruction
- Aluminium box for suction hoses and sapper tools on the top platform
- Rear part of the vehicle is not designed for installation of hitch for 900kg trailer
- Exhaust pipe discharging above the vehicle superstructure
- Superstructure painting

### **2.1.1. Layout of accessories**

- Standard accessories are stored in shelves and drawers made of aluminium plates and profiles.
- Metal holders and brackets are galvanized.
- Standard accessories layout is described in Appendix No. 1. (Accessories are not included in the price of the vehicle.)

### **2.1.2. Top floor**

- New top floor made of nonslip aluminium plate
- Top floor is fixed with putty and sealed
- Installation of aluminium box for accessories
- Delivery of short tow bar (model 8025) including brackets

## **2.2. TANKS**

### **2.2.1. Water tank**

- New tank made of steel plate

### **2.2.2. Foam concentrate tank**

- New tank made of stainless steel plate
- Foam concentrate tank filler neck complete with collar for easy filling

## **2.3. PUMPING EQUIPMENT**

### **2.3.1. Pump**

- Complete repair
  - blasting,
  - old/damaged components replaced with refurbished or new components.
- Pump testing
- Pump parameters measuring
- Painting

### **2.3.2. Foam proportioning system**

- Foam proportioning system reconstruction
- Foam proportioning system parameters measuring
- Painting

### **2.3.3. Fittings**

- Blasting and disassembly into basic elements
- Complete repair of fittings - old/damaged components replaced with refurbished or new components
- Replacement of all rubber parts and seals
- Painting

### **2.3.4. Primer**

- Repair or replacement, if necessary
- Painting

## **2.4. MONITOR**

- Blasting and disassembly to basic elements
- Complete repair - delivery of refurbished or new components
- Change of number: only one monitor instead of two monitors
- Replacement of all rubber parts and seals
- Painting

## **2.5. WIRING**

- New superstructure wiring
- Installation of side marker lamps
- Installation of front and rear side lamps
- Installation of ZKW rear combined lamps
- Installation of roller shutter limit switches and cabinet lighting
- Installation of audible alarm for reverse gear engagement
- Installation of VNL 024F BbSbB light bar with two blue flashing beacons, the siren with tone selection ("WAIL", "YELP", "HI-LO") and the loud-speaker for public address. The light bar is fitted with a protective tubular frame.
- Installation of two auxiliary blue LED lights on the front part of the vehicle
- Installation of blue flashing beacon on the rear part of the superstructure
- Installation of TC-LED 1067 warning alley with orange lights on the rear of the vehicle
- Installation of a battery-charging connection with MAG CODE connector located close to the driver's entry

### **3. SURFACE FINISH**

#### **3.1. PRE-SURFACE FINISH**

- Steel grit blasting
- Degreasing

#### **3.2. BODY SURFACE FINISH**

- Primer paint sprayed-on - epoxy paint
- Sealing and grinding - polyester putty
- Intermediate layer sprayed-on - acrylate filler
- Top coat sprayed-on - two-pack acrylic enamel

#### **3.3. COLOUR FINISH**

- Basic colour - red RAL 3000
- Wheel discs - black RAL 9005
- Bumpers, front mud-guards, rear mud-guards and waist stripe - white RAL 9003

#### **3.4. ANTI-CORROSION TREATMENTS**

- Body panelling - double-sided galvanized plates
- Closed profile inner surfaces - special wax-based substance sprayed-on
- Wheel housings - rubber-based insulating anti-noise and anti-abrasive substance sprayed-on
- Exhaust manifold - melted aluminium sprayed-on

### **4. WARRANTY**

#### **4.1. CHASSIS**

One-year warranty for the work performed and supplied chassis components.

#### **4.2. SUPERSTRUCTURE**

Two-year warranty for superstructure, three-year warranty against corrosion perforation for sheet metal panels.

### **5. OTHER PROVISIONS**

The vehicle will be handed over along with the spare parts catalogue and the operation manual.

**Note:** The actual condition of the vehicle will be examined during the vehicle takeover for repair (e.g. damages caused by an accident, abnormal wear etc.). Extra work and additional material costs will be agreed upon, if necessary.

Appendix No. 1**LIST OF ACCESSORIES LAYOUT FOR CAS 32 - T148 6x6**

## Driver's cab:

|          |   |
|----------|---|
| 2 pcs    | EXPERT 3810 rechargeable halogen flashlight |
| 2 pcs    | Breathing apparatus                         |
| 2 pcs    | Spare cylinder for breathing apparatus      |
| 2 pcs    | Safety belts cutter                         |
| 10 pairs | Surgical gloves                             |

## Rear left compartment:

|       |                         |
|-------|-------------------------|
| 2 pcs | Branchpipe 75           |
| 2 pcs | Fog branchpipe 52       |
| 2 pcs | Shut-off branchpipe 52  |
| 2 pcs | Coupling spanner 75/52  |
| 3 pcs | Hose, 75 mm x 20 m      |
| 2 pcs | Hose, 75 mm x 5 m       |
| 2 pcs | Fork for rope           |
| 1 pc  | Valve line, 8 mm x 25 m |
| 1 pc  | Belt line, 10 mm x 20 m |
| 2 pcs | Bag for binders         |
| 2 pcs | Hose binder 52          |
| 4 pcs | Hose binder 75          |

## Rear right compartment:

|       |                                       |
|-------|---------------------------------------|
| 2 pcs | Coupling spanner 125/75               |
| 1 pc  | Hydrant standpipe                     |
| 1 pc  | Hydrant wrench                        |
| 1 pc  | Wrench 27/430 for underground hydrant |
| 4 pcs | Hose, 52 mm x 20 m                    |
| 2 pcs | Foam-making branchpipe P6             |

## Rear compartment:

|       |                       |
|-------|-----------------------|
| 1 pc  | Plastic box for seals |
| 1 pc  | Hose adaptor 110/75   |
| 2 pcs | Hose adaptor 75/52    |
| 1 pc  | Flat crowbar          |
| 1 pc  | Dividing breeching    |
| 1 pc  | Suction strainer 110  |

## Top platform:

|       |   |
|-------|---|
| 1 pc  | Four-section wooden scaling ladder                          |
| 4 pcs | Suction hose, 110 mm x 2.5 m (stored in box)                |
| 1 pc  | Ceiling hook (stored in box)                                |
| 1 pc  | Tow bar   |
| 2 pcs | Shovel 7110/2 with handle (stored in box)                   |
| 1 pc  | Pickaxe 250 with handle (stored in box)                     |
| 1 pc  | Foam-making branchpipe 350 (medium expansion foam)          |
| 1 pc  | Foam-making branchpipe 12 (stored in box)                   |
| 1 pc  | Foam concentrate suction hose with adapter (stored in box)  |
| 1 pc  | Fire searchlight with articulated bracket (on rear railing) |
| 1 pc  | Fire axe (stored in box)                                    |

Note: Layout of accessories is based on the vehicle project and may be different in the final design.