

Ambulance Fabrication Specifications-Tata Winger 3200 WB- MP

GVKEMRI/MP/FAB/06/2016/32 dated 29/06/2016



GVK Emergency Management and Research Institute

(Annexure - I)

Part A: Scope of Fabrication Work: (TATA WINGER 3200 WB High Roof)

1. Cabinet for storing Oxygen cylinders, partition wall

Dimensions:

a). Oxygen cylinders compartment: Width of 1600 mm to cover end to end width of

Fabricated ambulance, length of 400mm along the length of the patient cabin and height equivalent to 400 mm. GI sheet box with steel angular reinforcement frame structure has to be built to accommodate one oxygen cylinder trolley 'D' type cylinder inside across the patient cabin behind the driver's compartment along the partition wall for easy removal and replacement of cylinder from outside of the vehicle driver side .

b) Partition wall: 12mm plywood sheet width=1600 and height =1890 to have sandwich 4mm FRP panels fastened on both sides of the cold rolled MS tubes, size of tube used for frame should be of 25X.08 mm. A sliding glass window size 700mm width and 300 height be fixed in the center of the partition wall behind driver's seat. The window should be at a height equivalent to 1000mm from floor. Partition wall has to be PU painted on both sides. The wall panel width=1600, height=1890 and thickness=20mm

2). Wash basin and Water storage and supply and dust bins : A 300mm dia wash basin to be placed on top of the dust bins with placement of a fresh water storage tank of 10 liters plastic container behind the Co drivers seat on to the partition wall. This gets filled from the co drivers seat side and placed in such a way that by gravity the water reaches through pipe to wash basin. The used water storage tank to be placed under neath the wash basin . The Wash basin compartment to occupy a length of 400mm and width 510mm and height 530. (The wash basin to be of 300 mm dia and 160 mm depth)

Two Concealed Portable Steel Dust Bin to be fixed with at least two screws making it Immovable with spring loaded lids for waste disposal. The dimensions are 400mm Height (Including spring loaded lid) X 200 mm Dia. To be placed underneath wash basin and to be covered to the height of water basin with SS sheet of 304 grade .The wash basin to be placed along side the Left side wall behind the co-drivers seat to the partition wall. The drain water from the drain water collection tank to flow to the left side of the vehicle to the ground through pipe.

3) Steel and plywood Medical rack for storing medical equipment

Placed alongside the wash basin above the O2 compartment

Drawer's plywood thickness-12mm

The medical cabinet should be claded with 0.8 mm thick stainless sheet (SS-304) on all the sides exposed to patient compartment. The Length is 400 mm from the partition wall and width is 340mm from right side of wash basin wall and the Height of the cabinet is -530mm (above the O2 compartment). The opening of the medical racks is towards rear side of the patient compartment. The rack to be made into three shelves with equal height .The dimensions are Length 400 mm, width 340 mm and height 530mm(inclusive of three equal height drawers)

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The hardware like rails, channels, sliders, locks, catchers, hinges, handles should be best quality of imported material only (e.g. HETTICH) heavy duty renowned brands. The drawers should be provided with locking to secure them against unintended opening during motion of the ambulance along with the locking knob turntable for locking and unlocking at front right to each drawer.

4) EMT Seat

The EMT seat is placed to the Right side wall . The Length =400mm, Width 450 mm and Height 450mm along with back rest of 50mm thick, height 400 mm and width 450 mm. The seat is made of 70mm thick, 50 or higher density foam cushion. Fitted on to 12 mm water proof and fire retardant ply board. The same should be Upholstered top and bottom side of the seat with non absorbent Rexene of silver gray color. The EMT seat to be placed along side Right side wall behind driver seat and to the partition wall (The left over space 300 mm between EMT seat and the Medical rack can be used to place equipment. This will be free space)

5) Stretcher

The Existing stretcher to be used and to be Placed to the Right wall so that the total width it occupies to be 600 mm only to get the walk way distance of 400 mm. The length of the stretcher to occupy 1950 mm from start of the rear end of the patient compartment. Height is unaltered. The stretcher to be placed to the Right side wall duly changing the direction to 180 degrees from its original place as supplied along with the ambulance.

6) Attendant seat- with storage for EM rescue tools.

The available patient attendant seats to be utilized for the purpose. One seat of 880mm length to be taken out and the seat with 1180mm length to be placed to the Left side wall so that the width from wall to be not more than 610mm . The seat starting to be after leaving 200mm from the rear side of the compartment to the Left wall, for placing the Fire extinguisher. The bottom vacant space under neath the seat can be covered with GI sheet with PU paint for keeping Rescue tools.

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7) Fire extinguisher:

- i) A fire extinguisher of ABC class of 5 kg to be provided at the entrance before the Attendant seat to the left side wall with mounting bracket and Velcro mechanism to hold it. A space of 200mm width before the attendants seat to the Left side wall to be utilized for placing the Fire Extinguisher.
- ii) Provision to be given in pilot compartment for holding 1 kg fire extinguisher at TWO places

8) Oxygen Cylinder Compartment & Delivery System:

- i).A door for the Trolley to be cut and fabricated with bonnet type locking with a opening lever in the driver compartment.
- ii) The Door opening lever should be below the driver seat with flexible wire cage which is firm and flexible without steep bend en route.
- iii) The Cylinder compartment should be properly sealed from all sides along with the Door side to protect and avoid any chances of dust entering this compartment, door seating area.
- iv) This trolley should be designed with M.S. angle frames 40x4 to hold one D type Oxygen cylinder with a toggle clamp for fastening. Safety lock to be provided to prevent accidental opening of toggle clamp. Reliable and durable locking/unlocking the trolley and cylinders on trolley with auto locking provision to be provided.
- v) The compartment to have length of 1620 mm width =400 mm and height =400mm
- vi) Complete oxygen cylinder compartment (SIX sides of the compartment) should be riveted with 1mm thickness GI SHEET. Outer edges of the GI sheet to be welded with body to avoid sharp edges of GI sheet.
- vii) Vents to be inclining downward from inside
- viii) High Pressure medical oxygen Tubing: 280 bars/ 4060 psi test pressure, with male female (5/8 inches) bull nose Brass connectors (Only forged brass connectors to be used) at both the ends, to connect it from the oxygen cylinder to the pressure regulator inside the patient cabin;
2 No's each **Goodle make pipe/ISI standard for medical oxygen to be used**

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(e.g. Goodle make pipe/ISI standard for medical oxygen to be used. metal pipes/wire mesh pipes are not acceptable)

iX) Preset Pressure Gauge cum two stages Regulator, with static outlet pressure first stage of 20 Bars/290psi and second stage of 4.12 bars/ 60 psi Double safety valve type 2 No's each.

x) Humidifier Bottle: Poly Carbonate Bowl with metal Cap and T type inlet outlet nipples, 2 nos. All the Connectors should be of chrome plated on brass material. xi) Flow Meter: Brass with chrome plated body, Poly carbonate tube, to regulate the flow from 0 to 15 liters per mints. It should be a back pressure compensated.

xii) Humidifiers should be mounted @1100mm height from the floor on RH side wall in front of the EMT seat. The pipes to be rooted along with the oxygen compartment to the RH wall to the regulators.

xiii) Three plus one (3+1) four ports of Brass 3/8 inches nipple in size be provided in complete one assembly (One set) on a common rectangular Brass Tube (Rail) with two Needle Valves at both the ends. (Ask for Clarification if needed)

9) Reinforcement behind wall I paneling for medical equipment / oxygen regularots mounting

All the Panels, Parts Mounted and Provision for Medical Equipments to be Mounted, shall have 4mm thick Mild Steel (MS Fe 410) sheet reinforced behind the specified area

i) The MS sheet should be MIG welded to the body of the Vehicle structure as per Automobile Standards and be coated with PU Primer to avoid any rusting. (ARCH WELDING WILL NOT BE ACCEPTED)

10) Grab Rail:

i) A 1900mm long SS pipe of 30mm dia, 1.5 mm wall thickness to be placed as grab rail on the Ceiling with proper aluminum/plastic oval shape support brackets at four places in equal distance. All the brackets should be riveted with grab rail.

ii) A 600mm long SS pipe of 30mm dia, 1.5 mm wall thickness to be placed as Grab rail near the RHS rear door at LHS wall 500 mm from the floor with firm metal support brackets at the ends with proper reinforcement.

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11) Spine Board .

i) Provision should be made for securing the Spine board to the stretcher bench.

12) Window Covering:

i) All the rear side Windows and side windows and rear door glasses should have none Transparent white film pasted from inside, more than half of the height of the window to avoid Visibility into the ambulance.

Part B: Scope of Air Conditioning Work:

13) Air Conditioning System: As the Air conditioner is provided along with the Base vehicle providing A/C Machine is not in the scope of the Fabricator.

Part C: Scope of Electrical Work

14) Light bar:

i) LED based Rhombic shaped, double layered structure, Combination of continually lit, turning lamps, (E.g. SOLPHIN/GRAND)

ii) Long life span, high luminance, Voltage: DC 12V, Power: 25W

iii) With integrated double diaphragm type Siren, Public Addressing System of 100W (PMPO) output Light bar to be mounted on front roof of the vehicle with MS frame with FRP cover(Grand/Shopping or Equivalent Indian brands only to be used with onsite warranty)

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15)Flashers, Spot Lights, Tube Lights

- i) (6Nos) high intensity Flashers (ONLY LED), red-orange pair on either side, and both red-orange on the rear of the vehicle. (Dolphin/Grand or equivalent Indian brand only)
- ii) (3Nos) Spot / flood lights on three sides, except on the front, in the middle of each pair of Flashers. (Grand or equivalent Indian brand only)
- iii) Spot lights 5 no's to be provided on sealing (5 no's DC Worming lights-non-external Lighting) along the length of the patient cabin inside the ambulance with one of the light coming above head of the patient.(LUMAX /AUTOLITE/GRAND MAKE OR EQUIVALENT AUTOMOBILE GRADE)
- iv) LED lights 5 no's with fixture and 12V DC powered on the both sides for internal lighting each on a separate circuit with a LED type. (METALITE, INNOVLITE OR ANY AUTOMOBILE GRADE) Voltage: 12V DC, Amps: 2.1, Lumens: 2175 Dimension (mm): 920.8x66.1x63.5 weight (kg): 0.953.

✂ All bulbs and lights should be sourced from renowned Indian brands only

16) Electrical Wiring:

I) All The main Components like,

- (a) Each of Internal Lightings (Led Lights),
- (b) Internal Lightings (Spot Lights),
- (c) External Lights (Flashers),
- (d) External Lights (Spot/Flood Lights),
- (e) Light Bars,
- (f) Each of Medical Equipments powering Sockets etc...

✂ should have separate circuits, (Power drawn directly from source (with proper cut off switch after Battery and a Fuse in it).

✂ A laminated copy of standard wiring colored diagram for Air conditioning, and DC wiring separately should be provided with each ambulance for reference.

✂ All precautionary measures should be taken in to consideration within the Scope of Auto Electrical work to avoid any accidental fire incidence during installation of any Electrical gadget, or any provision for that.

✂ Three pin socket provision for charging the mobile phone has to be given in the dash board

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17) Fuse and Other Safety Measures:

- i) Battery main cut off switch to be provided without naked wires or mounting.
- ii) A separate Fuse to each of the (as mentioned above) circuits to be given.
- iii) There should be an Indicating sticker to be pasted to each fuse on the fuse Box to identify the Fuse separately.
- iv) There should not be any joints be given within the Circuit Wiring,
- v) At any unavoidable wiring junction(s) the wires should be joined through Bakelite Connectors.
- vi) There should not be any loose wiring and loose joints.
- vii) Other than vehicle wiring harnesses, all wires/harness used for should be ((Flexi Cab, Finale or equivalent Make with fire retardant grade) All the wiring provided shall be copper with insulation having high temperature resistant.
- . viii) All wiring(including groundings), devices, switches, out lets etc except circuit breakers shall Be rated to carry at least 125% of the maximum ampere load.
- ix) Wiring necessarily passing through oxygen compartment should be protected from damage.
- x) All the holes drilled for wire routing, holes edges to be covered with rubber sealing (Grommet) to prevent wire damage.

18) DC connections Socket:

- i) Crabtree, 2 DC Sockets 12 V near Equipment area to be provided.

19) Roof / Wall mounted fans:

- i) Half Safety metal guard. Screw mounting. Oscillating, 200 mm fan blade, operated by DC 12V in 2 nos. in the Patient compartment,
- ii) One fan (same as above) in Pilot compartment. iii) Roof light to be fitted in pilot cabin

20) Exhaust Fan: One 200 mm bush less DC Exhaust fan to be mounted to partition between Pilot and ambulance compartment, to pump ambient air into the patient compartment.(Should be sourced from renowned Indian brand only with ISI certification)- (Havel's or Bajaj)

21) Spare Wheel fitment Provision: The spare wheel of dia 600mm to be placed adjacent to Patient attendant seat to its left side wall . The box length 250mm and width 650mm and height 650mm. The box of the tyre to be provided with wheels for rolling

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22) One Foot step Provision on foot rest of back side. The length of the foot step is 190mm and width as per the width of the patient cabin

23) The branding to be done as per the GVK EMRI specifications.

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