TRUCK, CARGO, MEDIUM, MC2, 4×4, MERCEDES BENZ U1750L, W/Winch

DATA SUMMARY

This instruction is authorised for use by command of the Chief of Army. It provides direction, mandatory controls and procedures for the operation, maintenance and support of equipment. Personnel are to carry out any action required by this instruction in accordance with EMEI General A 001.

Truck, Cargo, Medium, MC2, 4×4, Mercedes Benz U1750L, W/Winch

General
1. This EMEI lists the basic data for the Truck, Cargo, Medium, MC2, 4×4, Mercedes Benz U1750L, W/Winch.

2. Role. The role of this vehicle is to carry unit equipment and general stores or personnel in support of RAAF operations. The vehicle is also capable of towing single and dual axle trailers up to 8 tonnes.

3. Description. The truck is a Mercedes Benz Unimog, model U1750L/38 4×4 cab chassis which has been fitted with a winch, cargo tray, side and tailgates, canopy bows and canopy.

Physical Data
4. Mass:
   a. Unladen:
      (1) Front Axle .................................. 4060 kg
      (2) Rear Axle .................................. 2740 kg
      (3) Total ...................................... 6800 kg
   b. Maximum Loading (highway):
      (1) Front Axle .................................. 4600 kg
      (2) Rear Axle .................................. 6000 kg
      (3) Total ...................................... 10 000 kg
   c. Maximum Loading (cross country):
      (1) Front Axle .................................. 4500 kg
      (2) Rear Axle .................................. 6500 kg
      (3) Total ...................................... 11 000 kg

5. Dimensions:
   a. Length Overall ................................ 6940 mm
   b. Width Overall .................................. 2490 mm
   c. Height Overall ................................ 3140 mm
      (1) Laden ......................................... 3020 mm
      (2) Unladen ........................................ 3140 mm
d. Height Reduced (canopy bows removed):
   (1) Laden ..................................... 2590 mm
   (2) Unladen .................................. 2625 mm

e. Shipping Cubage (unladen):
   (1) Overall ...................................... 54.3 m³
   (2) Height Reduced ........................ 45.4 m³

f. Wheel Base .................................... 3850 mm
g. Ground Clearance ................................... 470 mm
h. Pintle Hook Height (laden) .............. 740 mm
i. Track .............................................. 1840 mm
j. Internal Tray Dimensions:
   (1) Length .................................... 4050 mm
   (2) Width ..................................... 2375 mm
   (3) Height ...................................... 500 mm

6. Bridge Classification ......................... 12

General

7. Performance:
   a. Fording Depth ................................ 1200 mm
   b. Turning Circle (between curbs) .......... 16.8 m
   c. Approach Angle (approx) .................... 39°
   d. Departure Angle (approx) ..................... 33°
   e. Maximum Gradient ............................. 60%
   f. Recommended maximum gross combination mass:
      (1) Highway ..................................... 24 500 kg
      (2) Cross-Country ............................. 19 000 kg
   g. Fuel Consumption (approx) .............. 25 L/100 km
   h. Range (approx) ................................ 600 km

8. Wheels and Tyres:
   a. Wheels ........................................... 10.00V-20
   b. Tyres:
      (1) Make/Model ......................... Michelin Pilot XL
      (2) Size ........................................ 13.00 R20
   c. Tyre Pressures:
      (1) Highway:
         (a) Front ................................. 310 kPa (45 psi)
         (b) Rear .................................. 550 kPa (80 psi)
      (2) Cross Country:
         (a) Front ................................. 240 kPa (35 psi)
         (b) Rear ................................. 448 kPa (65 psi)

9. Fuels, Lubricants and Coolant .... refer Table 1

Table 1 – Fuels, Lubricants and Coolant

<table>
<thead>
<tr>
<th>Assembly</th>
<th>Capacity</th>
<th>Type/Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
<td>160 L</td>
<td>Diesel</td>
</tr>
<tr>
<td>Cooling system</td>
<td>20 L</td>
<td>TEC50</td>
</tr>
<tr>
<td>Engine crankcase</td>
<td>15 L (max)</td>
<td>12 L (min)</td>
</tr>
<tr>
<td>Main transmission</td>
<td>10.5 L</td>
<td>OMD 115</td>
</tr>
<tr>
<td>PTO transmission</td>
<td>5.75 L</td>
<td>OMD 115</td>
</tr>
<tr>
<td>Front axle</td>
<td>2.5 L</td>
<td>OEP 220</td>
</tr>
<tr>
<td>Front drive hubs</td>
<td>600 ml</td>
<td>OEP 220</td>
</tr>
<tr>
<td>Rear axle</td>
<td>2.5 L</td>
<td>OEP 220</td>
</tr>
<tr>
<td>Rear drive hubs</td>
<td>600 ml</td>
<td>OEP 220</td>
</tr>
<tr>
<td>Steering system</td>
<td>2.25 L</td>
<td>OX 47 (grade 10)</td>
</tr>
<tr>
<td>Brake system</td>
<td>1 L</td>
<td>OX (Aust) 8</td>
</tr>
<tr>
<td>Clutch system</td>
<td>200 ml</td>
<td>OX (Aust) 8</td>
</tr>
<tr>
<td>Grease nipples</td>
<td>as required</td>
<td>XG-291</td>
</tr>
<tr>
<td>Winch case</td>
<td>2 L</td>
<td>OEP 220</td>
</tr>
</tbody>
</table>

10. Engine:
   a. Make and Model .................. Mercedes Benz, OM 366A, six cylinder in-line diesel, direct injection with exhaust gas driven turbo-charger
   b. Displacement ....................... 5675 cm³
   c. Bore Diameter ........................ 97 mm
   d. Stroke Length .......................... 128 mm
   e. Compression Ratio .................. 17.25:1
   f. Compression Pressure ............... 28 bar (measured on a warm engine)
   g. DIN Output ..................... 125 kW at 2600 rpm
   h. Torque Output ... 560 Nm at 1400-1700 rpm
   i. Firing Order .................... 1-5-3-6-2-4
   j. Valve Type ........ OHV (mechanical tappets)
   k. Coolant Temperature .............. 95°C
   l. Oil Pressure:
      (1) Normal .......................... 2–5 bar
      (2) Hot Low Idle ............ 0.6 bar (minimum)
   m. Idle Speed ..................... 700 rpm
   n. Governed Speed ................... 2600 rpm
11. **Clutch:**
   a. Type .................................. hydraulically operated, single plate dry clutch
   b. Pressure Plate:
      (1) Make .......................... Fitchel and Sachs
      (2) Model ............................. GFM 300K
   c. Clutch Plate:
      (1) Make .......................... Fitchel and Sachs
      (2) Model ............................. 330 GSBL

12. **Main Transmission:**
   a. Type .......................... UG 3/40-8/13.01 GPA
   b. Make ....................................... Daimler Benz
   c. Gear Ratios ............................... refer Table 2

   **Table 2 – Gear Ratios**

<table>
<thead>
<tr>
<th>Forward</th>
<th>Ratio</th>
<th>Reverse</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13.01</td>
<td>1</td>
<td>12.60</td>
</tr>
<tr>
<td>2</td>
<td>9.02</td>
<td>2</td>
<td>8.74</td>
</tr>
<tr>
<td>3</td>
<td>5.96</td>
<td>3</td>
<td>5.78</td>
</tr>
<tr>
<td>4</td>
<td>4.38</td>
<td>4</td>
<td>4.24</td>
</tr>
<tr>
<td>5</td>
<td>2.97</td>
<td>5</td>
<td>2.88</td>
</tr>
<tr>
<td>6</td>
<td>2.06</td>
<td>6</td>
<td>2.00</td>
</tr>
<tr>
<td>7</td>
<td>1.36</td>
<td>7</td>
<td>1.32</td>
</tr>
<tr>
<td>8</td>
<td>1.00</td>
<td>8</td>
<td>0.97</td>
</tr>
</tbody>
</table>

   e. Transfer Case ..................... front axle drive engaged by pneumatically operated dog-clutch mechanism.

13. **Power Take Off Transmission:**
   a. Make ........................................ Daimler-Benz
   b. Special; Version Number .......... SA35737
   c. Ratio ....................................... 4.32:1

14. **Winch:**
   a. Type ...................................... F64M1 SW05
   b. Make ........................................ Werner and Co
   c. Line Pull .................................. 62 kN (maximum)
   d. Cable Length .......................... 30 m (maximum)
   e. Cable Diameter ....................... 14 mm

15. **Front Axle:**
   a. Type ...................................... 737.204
   b. Make ....................................... Mercedes Benz

16. **Rear Axle:**
   a. Type ...................................... 747.209
   b. Make ....................................... Mercedes Benz
   c. Ratios:
      (1) Overall .................................. 6.38:1
      (2) Differential ............................ 2.18:1
      (3) Wheel hub drives ...................... 2.92:1

17. **Brakes:**
   a. Parking Brake ....................... spring applied actuation on rear brakes, pneumatic release.
   b. Foot Brake .............................. pneumatically controlled, hydraulically operated disc brakes with single calipers on rear discs and dual on the front
   c. Engine Brake ........................... pneumatically operated exhaust manifold butterfly
   d. Operating Pressures:
      (1) Pneumatic .............................. up to 950 kPa (without trailer)
      (2) Hydraulic .............................. up to 15 MPa
   e. Trailer Brake System:
      (1) Type ..................................... dual line
      (2) Operating Pressure ................... up to 730 kPa

18. **Steering System:**
   a. Type ...................................... LS3B
   b. Make ....................................... Mercedes Benz
   c. Design ..................................... hydraulically assisted recirculating ball
   d. Hydraulic Supply:
      (1) Flow Rate .............................. 12 L/min (maximum)
      (2) Pressure ................................. 13.5 MPa (maximum)
   e. Ratio ....................................... 19.33:1

19. **Electrical System:**
   a. Voltage ...................................... 24 V dc
   b. No of Batteries ........................... 2 x 12 V
   c. Battery Capacity .......................... 120 Ah
   d. Earth Polarity .............................. negative
   e. RF Suppression ......................... Mill Std 461A. RE05
f. Bulb Types ....................... refer Table 3

Table 3 – Bulb Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Capacity @ 24 V</th>
<th>Bulb Shape to Din 72601</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front Lights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High/Low beam headlights</td>
<td>55 W/50 W</td>
<td>A24 V</td>
</tr>
<tr>
<td>Parking lights</td>
<td>4 W</td>
<td>HL24 V</td>
</tr>
<tr>
<td>Blackout marker lights</td>
<td>18 W</td>
<td>R24 V</td>
</tr>
<tr>
<td>Turn indicator lights</td>
<td>21 W</td>
<td>RL24 V</td>
</tr>
<tr>
<td>Clearance lights side mirrors</td>
<td>4 W</td>
<td>L24 V</td>
</tr>
<tr>
<td>Reduced headlight</td>
<td>18 W</td>
<td>R24 V</td>
</tr>
<tr>
<td>Rear Lights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop/Tail lights</td>
<td>21 W/5 W</td>
<td>SL24 V</td>
</tr>
<tr>
<td>Blackout tail lights</td>
<td>2 W</td>
<td>H24 V</td>
</tr>
<tr>
<td>Blackout brake lights</td>
<td>2 W</td>
<td>H24 V</td>
</tr>
<tr>
<td>Reversing lights</td>
<td>10 W</td>
<td>G24 V</td>
</tr>
<tr>
<td>Clearance lights</td>
<td>4 W</td>
<td>HL24 V</td>
</tr>
<tr>
<td>Convoy cross lights</td>
<td>2 W</td>
<td>H24 V</td>
</tr>
<tr>
<td>Interior Lights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control/indicator lights</td>
<td>2 W</td>
<td>H24 V</td>
</tr>
<tr>
<td>Map reading light</td>
<td>2 W</td>
<td>H24 V</td>
</tr>
<tr>
<td>Cabin roof light</td>
<td>10 W</td>
<td>H24 V</td>
</tr>
</tbody>
</table>

20. **Trailer Facilities:**
   a. Socket Type ...................... NATO 12 pin, 12 V and 24 V sockets
   b. Pintle Hook ...................... fully rotating
   c. Safety Chain Hooks .............. 2
   d. Brakes .......................... dual line, pneumatic

21. **Associated Information:**
   a. NSN .................................. 2320 66 149 2005
   b. CES .................................. 11753
   c. RPS .................................. 02156
   d. Warranty ......................... EMEI Vehicle A 119-21
   e. Technical Description ............ EMEI Vehicle G 652
   f. Unit Repair ..................... EMEI Vehicle G 653
      (pending)
   g. Field Repair .................... EMEI Vehicle G 654
      (pending)
   h. Base Repair ...................... EMEI Vehicle G 654-1
      (pending)
   i. Servicing Instruction ......... EMEI Vehicle G 659
      (pending)