

**TRUCK, FIRE FIGHTING, RURAL MC2 – MERCEDES BENZ
NSN 4210-66-100-8941**

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.



Figure 1 Truck, Fire Fighting, Rural MC2 – Mercedes Benz

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General

- 2. This EMEI lists the basic data for Truck, Fire Fighting, Rural (TFFR) MC2 – Mercedes Benz (Figure 1).
- 3. **Role.** The role of the TFFR is the suppression of bush, grass and some structural fires by unit and base fire teams.
- 4. **Description.** The TFFR is a commercial 4X4 fire appliance, containing a 2800 L water tank, a Hatz diesel engine coupled to a Darley pump and two live hose reels.

Detail

5. Dimensions:

- a. Height:
 - (1) Overall (to Top of Exhaust) 3000 mm
 - (2) Top of Cab/Chassis Roof 2710 mm
- b. Length (Overall) 6934 mm
- c. Width (Overall) 2420 mm
- d. Wheelbase 3600 mm

- e. Track:
 - (1) Front Axle 2020 mm
 - (2) Rear Axle 1745 mm
- f. Ground Clearance:
 - (1) Front Axle 250 mm
 - (2) Rear Axle 250 mm
- g. Rail Transportability..... contact relevant state railway authority

6. Mass:

- a. Gross Vehicle Mass (GVM) 12 500 kg
- b. Maximum Loading:
 - (1) Front Axle 5450 kg
 - (2) Rear Axle 7600 kg

7. Wheels and Tyres:

- a. Wheels (Front and Rear) single
- b. Rims split type
- c. Tyres and Tyre Pressures..... in accordance with EMEI Vehicle A 291-5

8. Cab/Chassis:

a. Engine:

- (1) Manufacturer Mercedes-Benz
- (2) Model OM352A
- (3) Type four-stroke, turbo charged, direct injection, diesel
- (4) Displacement..... 5.675 L
- (5) Compression Ratio 16:1
- (6) No of Cylinders six in-line
- (7) Cooling System:
 - (a) Capacity 24 L
 - (b) Type water cooling with thermostat
- (8) Lubrication System forced feed lubrication with oil cooler
- (9) Fuel Pump plunger pump comb, with injection pump
- (10) Minimum Compression (Hot) 1960 kPa
- (11) Maximum Power (Nett) 124 kW at 2800 rpm
- (12) Maximum Torque (Nett) 490 N.m at 1600 rpm
- (13) Idling Speed 600 rpm
- (14) Injection Order 1-5-3-6-2-4
- (15) Valve Clearance (Cold):
 - (a) Inlet 0.25 mm
 - (b) Exhaust 0.40 mm
- (16) Oil Filter combined full-flow (paper)
- (17) Oil Cooler full-flow filtration
- (18) Fuel Filter felt dual element

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- (19) Air Cleaner.....oil bath air filter , 1017 to 1617 paper filter
- (20) Oil Pressure (Minimum):
 - (a) Maximum rpm 250 kPa
 - (b) Idle Speed 50 kPa
- (21) Operating Temperature70°C to 95°C
- (22) Air Compressor Capacity..... 130 to 137 L/min at 8 bar back pressure

b. Transmission:

- (1) Manufacturer..... Mercedes-Benz
- (2) Model..... G3/50-5/8.5
- (3) Type 5 speed all synchromesh
- (4) Gear Ratios:
 - (a) First..... 8.42:1
 - (b) Second 4.47:1
 - (c) Third 2.58:1
 - (d) Fourth 1.566:1
 - (e) Fifth 1.00:1
 - (f) Reverse 7.77:1

c. Transfer Case:

- (1) Manufacturer..... Mercedes-Benz
- (2) Model..... VG500-3W
- (3) Type three-shaft transfer case
- (4) Shift Method pneumatic shifting of front axle drive and Low range
- (5) Gear Ratios:
 - (a) High Range (4X2, 4X4)..... 1.05:1
 - (b) Low Range (4X4) 1.64:1

d. Axles:

- (1) Manufacturer..... Mercedes-Benz
- (2) Front Axle:
 - (a) Model..... AL 3
 - (b) Type..... reinforced fully floating with hypoid gear reduction
 - (c) Wheel Joints constant velocity at wheel hubs
 - (d) Ratio 5.714:1
- (3) Rear Axle:
 - (a) Model..... HL 4
 - (b) Type..... fully floating with hypoid gear reduction and differential lock
 - (c) Ratio 5.714:1

e. Steering System:

- (1) Manufacturer..... Mercedes-Benz
- (2) Type LS5, re-circulating ball power assisted
- (3) Power Assistancehydraulic power steering pump, gear driven

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f. Electrical System:

- (1) Type of System 12 V
- (2) No of Batteries two
- (3) Terminal Earthed..... negative
- (4) Alternator 14 V, 55 Ah

g. Brakes:

- (1) Footair/hydraulic
- (2) Parkingmechanical to rear wheels

h. Performance:

- (1) Fuel Consumption35 L/100 km (approx)
- (2) Fording Depth 820 mm
- (3) Turning Circle 18.6 m
- (4) Angle of Approach:
 - (a) Unladen 36°
 - (b) Laden 34°
- (5) Angle of Departure:
 - (a) Unladen (Step-down) 19°
 - (b) Laden (Step-down)..... 18.3°
 - (c) Unladen (Step Restrained to Maximum Height)..... 36°
 - (d) Laden (Step Restrained to Maximum Height) 35.2°

i. Fuels and Lubricants:

- (1) Fuel:
 - (a) Type Diesel
 - (b) Capacity135 L
- (2) Crankcase Oil:
 - (a) Type O-238 (OMD 115)
 - (b) Capacity (Maximum) 14 L (approx)
- (3) Oil Filter:
 - (a) Type O-238 (OMD 115)
 - (b) Capacity (Maximum) 2.5 L (approx)
- (4) Gear Box Oil:
 - (a) Type OX 46
 - (b) Capacity5 L
- (5) Transfer Case Oil:
 - (a) Type O-226 (OEP 220)
 - (b) Capacity4.5 L

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- (6) Front Axle Oil:
 - (a) Type..... O-226 (OEP 220)
 - (b) Capacity 5 L
- (7) Rear Axle Oil:
 - (a) Type..... O-226 (OEP 220)
 - (b) Capacity 5.25 L
- (8) Power Steering Oil:
 - (a) Type..... OX 46
 - (b) Capacity 2.8 L

j. Trailer Facilities:

- (1) Type (Where Fitted)..... pintle hook
- (2) Socket Type NATO 12 pin
- (3) Brakes nil
- (4) Trailer:
 - (a) Type..... Trailer, Cargo, Light, MC2 (1250 kg Haulmark)
 - (b) NSN 2330-66-147-1212

9. Fire Pump Unit:

- a. NSN..... 4320-66-139-1418
- b. Mass (dry) 586 kg (approx)
- c. **Dimensions:**
 - (1) Length 1660 mm
 - (2) Width 980 mm
 - (3) Height 760 mm
- d. **Hatz Engine:**
 - (1) Manufacturer..... Hatz Diesel
 - (2) Model..... 4L40C
 - (3) Type four-stroke, diesel
 - (4) Fuel Injection direct injection, multi-hole-nozzle
 - (5) Firing Order 1-3-4-2
 - (6) Displacement 3432 cm³
 - (7) Compression Ratio..... 18:1
 - (8) Tappet Clearance (Cold) 0.10 mm
 - (9) Starting System electric (using vehicle battery)
 - (10) Air Filter dry type air cleaner integrated to engine
 - (11) Oil Filtler..... Hatz 40065300
 - (12) Cooling:
 - (a) System forced air cooling
 - (b) Type..... belt driven axial-type blower fan with integrated alternator
 - (13) Lubricating System oil, pressurised system with in-line filter and cooler

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e. Darley Pump:

- (1) Manufacturer W.S. Darley & Co
- (2) Model HE500, Champion
- (3) Type geared, high speed, single stage, single suction, centrifugal
- (4) Mounting Type direct to engine
- (5) Inlet Hose Connection one 100 mm diameter port and two 63 mm diameter ports
- (6) Outlet Hose Connection two 63 mm diameter ports

NOTE

The Darley pump impeller shaft is packed with a special, Darley plastallic packing, which is inserted into the pump seal. It is important to ensure that correct adjustment (tightening) of the seal packing plunger screw is achieved. The pump seal is to be completely filled solid with packing and the plunger screw adjusted to provide a constant drip rate of 10 to 60 drips per minute at normal operating pressures (Ref EMEI Vehicle F 876-3). Never use a substitute for Darley plastallic packing.

- (7) Pump Seal:
 - (a) Type Darley HE500 Pump Seal (packing assembly)
 - (b) NSN 5330-01-270-1629

f. Fire Pump Unit – Fuels and Lubricants:

- (1) Fuel:
 - (a) Type Diesel
 - (b) Capacity as detailed in Para 14
- (2) Hatz Engine Oil:
 - (a) Type OMD 115
 - (b) Capacity 13 L
- (3) Darley Pump Gearcase Oil:
 - (a) Type OMD 115
 - (b) Capacity 0.1 to 0.2 L
- (4) Primer Tank Oil:
 - (a) Type OMD 115
 - (b) Capacity 1.5 to 2.5 L

NOTE

The Hatz/Darley pump utilises the vehicle main battery for electric starting. If performing a cold weather start or the vehicle battery is in poor condition, the pump may only start with difficulty or not start at all.

g. Fire Pump Unit – Electrical System:

- (1) Type of System 12 V or 24 V
- (2) Alternator:
 - (a) System integrated into the axial blower fan (with mounted regulator)
 - (b) Type three-phase ac

h. Fire Pump Unit – Performance:

- (1) Nominal Output (Maximum) 2270 L/min at pump pressure of 2500 kPa
- (2) Operating Time six hours (approx)

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- 10. Water Tank:**
- a. Capacity 2800 L
- 11. Foam Tanks:**
- a. Capacity (Total) 200 L (approx)
 - b. Quantity/Size (Where Fitted) two 100 L (approx)
- 12. Hose Reels:**
- a. Manufacturer Hannay
 - b. Model A 886166 – electric and manual rewind
 - c. Model B 886270 – manual rewind
 - d. Hoses:
 - (1) Length (Model A) 60 m
 - (2) Length (Model B) 30 m
 - e. Nozzle:
 - (1) Type Elkhart, Select-O-Matic, SM-3FG
 - (2) NSN 4210-66-140-8001
 - (3) Output (Maximum) 230 L/min at a pressure of 700 kPa (102 psi)
 - f. Rewind Motor:
 - (1) Manufacturer Hannay
 - (2) Model P56AN227
 - (3) Type 12 V, 35 A
 - (4) Revolutions 650 rpm
- 13. Packaging Data:**
- a. Shipping Cubage:
 - (1) Normal Height Overall 72.12 m³
 - (2) Height Reduced 65.15 m³
- 14. Restrictions on Use:**
- a. The fire pump unit, Hatz diesel engine, draws its fuel directly from the vehicle fuel tank. The system is designed so that the pump will run out of fuel when there is only 25% (35 L) of the vehicle’s fuel remaining. This reserve is to prevent the vehicle from running out of fuel and to allow it to drive away from a fire in an emergency.
- 15. Ancillary Equipment:**
- a. Rescue and Salvaging Kit Hydraulic SCES 17890
 - b. SCBA Centurion (RAAF and IRR) SCES 17865
 - c. SCBA Contour (IRR and 4RAR) SCES 17942
 - d. SCBA Propak (RAAF, IRR) SCES 18543

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16. Manufacturer's/Supplier's Details:

a. Vehicle Cab/Chassis Manufacturer:

Mercedes-Benz Australia Pty Ltd
Lexia Place
MULGRAVE VIC 3170

Customer Service Help Line: 1 300 363 642
Special Projects Manager: (03) 9566 6238
Fascimile: (03) 9561 7088
Email: DPAC@daimlerchrysler.com
<http://www.daimlerchrysler.com>

b. Vehicle Rear Body Work Manufacturer:

Varley Special Vehicles Pty Ltd
21 School Drive
TOMAGO NSW 2322

Phone: (02) 4964 0400
Fascimile: (02) 4964 0499
Mobile: 0417 421 425
Email 1: vsv@varleygroup.com
Email 2: defence@varleygroup.com
<http://www.varleygroup.com/>

c. Hatz Diesel Engine Supplier:

Hatz Australia Pty Ltd
Unit S2, 391 Park Road
REGENTS PARK NSW 2143

Service Phone: (02) 8788 7913
Spare Parts Phone: (02) 8788 7924
Freecall 1 800 025 049
Fascimile: (02) 9743 8000
Email: engines@hatz.com.au
<http://www.hatz.com.au/>

d. Darley Pump Supplier (pump & outlet components):

SEM Fire and Rescue
17 Trewin Street
WENDOUREE VIC 3355

Phone: (03) 5339 3109
Fascimile: (03) 5338 2691
Mobile: 0408 570 654
Email: info@semfirerescue.com.au
<http://www.semfirerescue.com.au/>

e. Darley Pump – Australian Agent (pump & inlet components):

W.S. Darley & Co Australia Pty Ltd
32 Yarrabee Road
GREENHILL SA 5140

Mobile: 0407 901 474
Fascimile: (08) 8390 1474
Email: twing@picknowl.com.au
<http://www.emergency-directory.com/details.php?id=1178>

17. Point of Contact:

ADFLM, Fire Vehicles
CSV SPO, DMO
Victoria Barracks
St Kilda Rd
SOUTHBANK VIC 3006

Phone: (03) 9282 5954
Email: ybm.firevehicles@defence.gov.au

18. Associated Information:

- a. EGC..... 4210-374C
- b. SIGC 4210-0002
- c. NSN..... 4210-66-100-8941
- d. RPS (Cab/Chassis) 02144
- e. CCES..... 19034
- f. Specification..... Army (AUST)6223
- g. Other EMEI:
 - (1) Vehicle F 876..... Authority for Use
 - (2) Vehicle F 876-1Hatz Diesel Engine Repair Manual
 - (3) Vehicle F 876-2Hatz Diesel Engine Operators Manual
 - (4) Vehicle F 876-3 Darley HE500 Pump Operator/Maintenance Manual
 - (5) Vehicle F 876-4 Mercedes Benz Workshop Manual
 - (6) Vehicle F 877 series..... Modification Instructions
 - (7) Vehicle F 879 series..... Miscellaneous Instructions
- h. ILSI ALI MM 10-42

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END

Distribution List: **VEH F 05.0 – Code 1** (Maint Level)
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