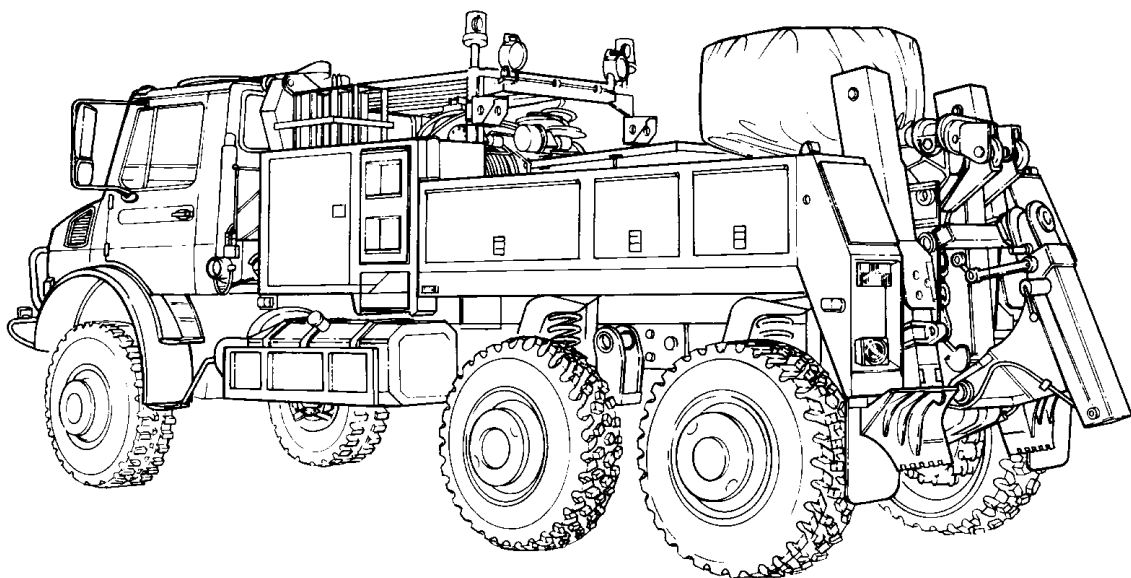
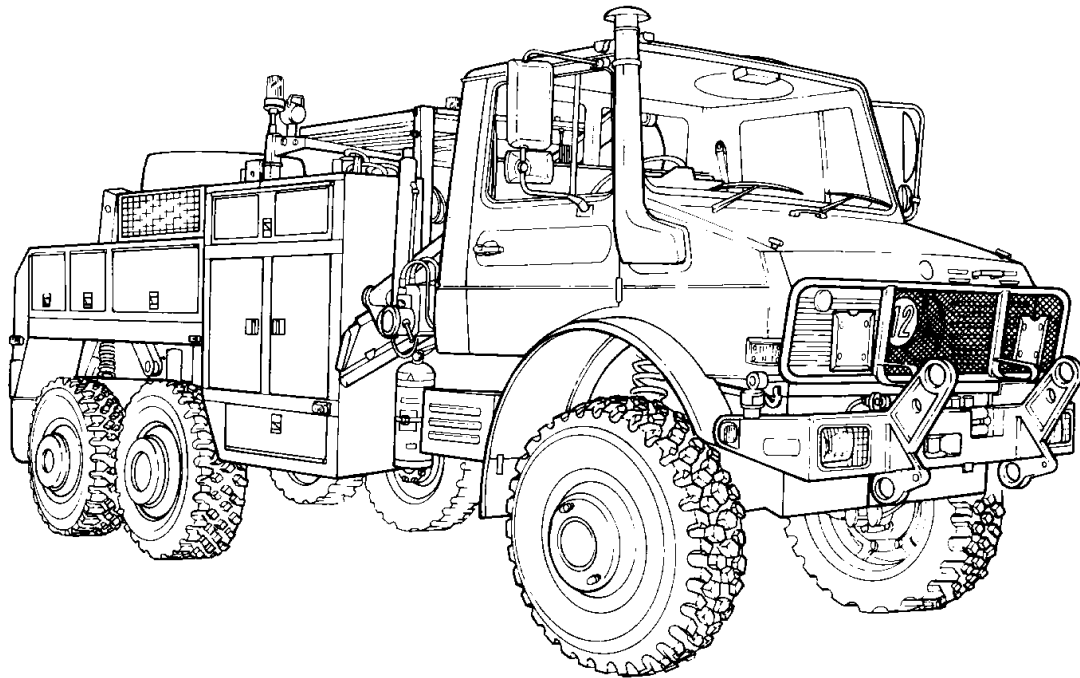


TRUCK, WRECKER, MEDIUM, MC2, MERCEDES-BENZ UNIMOG, U2450L

MEDIUM REPAIR

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.



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ASSOCIATED PUBLICATIONS

1. Defence Road Transport Instructions
2. MEMA Vol 3
3. Australian Army Books:
GM 120 Record Book for Service Equipment - Army
4. Complete Equipment Schedule (CES) No. 19634
5. EMEI GENERAL R 018 Inspection of Recovery Equipment
6. EMEI MISCELLANEOUS EQUIPMENT O Series
7. EMEI MISCELLANEOUS EQUIPMENT O 018 Cranes, Hoists and Winches - Inspection Data
8. EMEI VEHICLE A 029 Servicing of B Vehicles, Trailers, Stationary Equipment, Auxiliary and Small Engines
9. EMEI VEHICLE A 119-18 Repair of Vehicles Under Warranty Agreement, General Instruction
10. EMEI VEHICLE A 119-21 Air Conditioning
11. EMEI VEHICLE A 119-24 Medium Recovery Vehicle (MRV) - Unimog, U2450L
Repair of Vehicle Under Warranty Agreement - Policy Instruction
12. EMEI VEHICLE A 234 Painting of FFR Vehicles Antenna Bases General Instruction
13. EMEI VEHICLE A 234-1 Vehicle Painting - Acrylic Finish - Touch Up Repair and Repaint
General Instruction
14. EMEI VEHICLE A 591-1 Servicing of Dry Type Air Cleaners
15. EMEI VEHICLE D 390 Data Summary - Truck, Wrecker, Medium, MC2, Mercedes-Benz
Unimog, U2450L
16. EMEI VEHICLE D 392 Technical Description - Truck, Wrecker, Medium, MC2, Mercedes-
Benz Unimog, U2450L
17. EMEI VEHICLE D 393 Light Repair - Truck, Wrecker, Medium, MC2, Mercedes Benz Unimog,
U2450L
18. EMEI VEHICLE D 399 Servicing Instruction - Truck, Wrecker, Medium, MC2, Mercedes-Benz
Unimog, U2450L
19. EMEI VEHICLE G 619-10 Fitting of Caution Label and Manufacture and Use of Selector Lever
Locking Bracket
20. EMEI WORKSHOP E Series - Occupational Health and Safety
21. EMEI WORKSHOP E 406 - Material Safety Data Sheets
22. EMEI WORKSHOP E 651 - General Instructions Spray Painting and Spray Booths
23. EMEI WORKSHOP E 652 - Use of Polyurethane Paints and Solvents - General Instruction
24. EMEI WORKSHOP EQUIPMENT E 652 - Tyre Changing
25. NSN 7610-66-145-3217 Technical Manual - Operator Handbook Truck, Wrecker, Medium,
MC2, Mercedes-Benz Unimog, U2450L
26. NSN 7610-66-133-5220 Technical Manual - User Handbook for Single Channel Radio System-
Raven B Vehicles and Ground Installation
27. MRV Integrated Logistic Support Instruction
28. Manual of Occupational Health and Safety (MOHS)
29. Repair Parts Scale 02229

MAINTENANCE SUPPLY ITEM (MSI) IDENTIFICATION

Table 1 - Location of Identification Numbers on Maintenance Supply Items

Component	Identification Number Location
Chassis	On the outside of the right hand chassis rail, just forward of the front wheel.
Body	Right hand end corner of dash.
Engine	Right hand side of engine behind fuel injection pump.
Injection pump	Side of pump.
Splitter transmission	Plate, lower, centre of transmission housing.
Transmission and transfer case	Rear of transfer case adjacent to filler/check plug.
Hydraulic pump	Opposite end to drive shaft connection.
Front axle	Plate fitted to centre of differential housing.
Intermediate axle	Plate fitted to centre of differential housing.
Rear axle	Plate fitted to centre of differential housing.
Frame	Top face, rear left hand side.
Subframe	Front left hand side running vertically along crane bolt housing.
Winches	External face, left hand side.
Main boom	End of boom between fairleads, top of end plate.
Boom, lifting, folding, extension and spade cylinders	Cylinder body.
Boom extension	Top, rear, left hand face on left hand side of vehicle.
Towing pintle	Front face, top of locking jaw.
Towbar	Left hand front face, beside towing pintle.
Crane	Crane post, left hand side.
Front LHS cabinet assembly	Front left upright for storage platform (inside face).
Front RHS cabinet assembly	Front right upright for storage platform (inside face).
Rear LHS and RHS cabinet assemblies	Rear end bin on bottom door sill.

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SPECIAL TOOLS

1. Many of the procedures described require the use of special tools, jigs or fixtures. Table 2 lists the special tool, its NSN and Manufacturer's part number. All of the special tools have been given item numbers which are used as a cross reference in the text.

Table 2 - Special Tools

Item No	Qty	Description	N.S.N.	Manufacturer's Part No
1.	1	Wrench, injector cap nut	5120-12-176-4841	000 589 68 03 00
2.	2	Handle, lifting, cylinder head	5120-66-135-3296	312 589 01 313 00
3.	1	Pliers, compressing, nipple assembly	5120-66-159-5787	312 589 01 37 00
4.	1	Puller, universal	5120-01-243-5333	355 589 00 33 00
5.	1	Remover/replacer, timing seal	4910-12-177-0961	435 589 00 43 00
6.	1	Handle, replacer	5120-12-176-6853	406 589 04 15 00
7.	1	Spanner, tube injector thrust bolt	5120-12-121-1676	000 589 75 09 00
8.	1	Spanner, tube injector nozzle	5120-12-171-0684	352 589 00 33 00
9.	1	Spanner, tube protective nozzle	5120-12-176-8023	346 589 00 07 00
10.	1	Spanner, ring, vibration damper	5120-12-343-3846	437 589 00 03 00
11.	1	Pump unit	4320-33-200-8794	422 589 00 71 00
12.	1	Supply tank		422 589 01 71 06
13.	1	Pipe, fuel		422 589 01 71 12
14.	1	Pipe, gooseneck		422 589 01 71 23
15.	1	Adapter set	4730-12-343-3261	403 589 00 91 00
16.	6	Valve, pressure limiting	4820-121-343-3854	442 589 00 91 00
17.	1	Shaft, pilot, clutch	5120-12-176-6862	425 589 00 61 00
18.	1	Bracket, lifting, main transmission	4912-12-176-6861	425 589 00 62 00
19.	1	Jig, shift linkage, transmission	4910-12-333-3998	425 589 01 62 00
20.	1	Jig, holding, transmission	4919-12-343-4251	437 589 00 62 00
21.	1	Plate, retaining, torque ball housing	5910-12-176-6875	425 589 00 59 00
22.	1	Bar, extension	5120-12-133-6180	000 589 01 14 00
23.	1	Retainer, wheel hub bearing	5120-12-333-5740	425 589 04 14 00
24.	3	Guide, hub drive housing	5315-66-135-3297	425 589 02 15 00
25.	1	Puller, hub drive gear	5120-01-246-9250	000 589 35 33 00
26.	1	Plate, puller	5120-66-135-3293	425 589 00 34 00
27.	1	Remover, steering knuckle bush	5120-66-117-2057	425 589 00 33 00
28.	1	Replacer, outer wear ring	5120-12-300-3531	406 589 02 61 00
29.	1	Replacer, hub needle bearing and seal	5120-12-343-3850	437 589 00 43 00
30.	1	Replacer, hub roller bearing	5120-12-311-1331	425 589 03 43 00
31.	4	Stud and special nut, hub gear replacing	5120-66-117-2056	425 589 02 33 00
32.	1	Replacer, small bearing	5120-12-311-1330	425 589 01 43 00
33.	1	Replacer, wheel bearing and hub seal	5120-66-117-2360	425 589 00 43 00
34.	2	Guide, disc brake and hub	5315-12-333-3997	425 589 01 15 00
35.	1	Wrench, torque pitman shaft	5120-01-243-5345	001 589 80 21 00
36.	1	Gauge, testing, steering pressure 0-160 bar	6685-12-343-3263	437 589 00 21 00
37.	1	Hose, fitting (for use with Item 36)	4720-12-343-3044	437 589 00 90 00
38.	1	Spanner - C, pivot pin nut	5120-99-136-6357	SKF HN18
39.	1	Sling, multipurpose	4910-12-176-6861	435 589 00 62 00
40.	1	Replacer, mechanical, seal	5120-33-200-8791	352 589 08 15 00
41.	1	Replacer, seal	5120-12-192-8053	360 589 00 15 00
42.	2	Kit, pressure testing, consisting of the following:		HYA437 586 00 42
42.1	2	Gauge, pressure, 0-25 bar	6685-12-180-4901	WABCO 543 004 009 0
42.2	2	Washer, sealing, aluminium, M22	5330-12-124-0979	WABCO 811-401-080-4
42.3		Adapter, reducing, hose to coupling, M22/M16	4730-12-333-5209	WABCO 893-101-164-4
42.4	2	Coupling, pneumatic	2530-12-121-9380	WABCO 542 200 000 0
42.5	1	Hose, plastic, reinforced, w/fittings, blue	4720-12-158-8569	WABCO 452 600 003 0
42.6	1	Hose, plastic, reinforced, w/fittings, clear	4720-12-313-8100	WABCO 452 600 004 0

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Table 2 - Special Tools (Continued)

43	1	Extractor drive gear	5120-12-126-4953	000 589 29 33 00
44	1	Extractor drive gear	5120-12-126-4954	000 589 30 33 00
45.	1	Puller, hook	5120-12-126-4954	655 589 07 63 00
46.	1	Pliers, clamping plastic hose	5120-12-181-6233	387 589 02 37 00
47.	1	Remover, ball joint	5120-12-348-1949	001 589 44 33 00
48.	1	Adapter, remover ball joint	5120-12-146-2825	000 589 40 33 00
49.	1	Kit, pressure testing, consisting of the following:		YA 437 569 00 00
49.1	1	Gauge, pressure, 0-250 bar		Q STF SPG63-250-1-SB
49.2	1	Ring, sealing, 1/4" gauge, buna		Q STF NBR-5.28 X 1.78
49.3	1	Cover, gauge, rubber		Q STF 72.500-00
49.4	1	Hose, plastic w/fittings		Q STF SMS20M1/4-500A

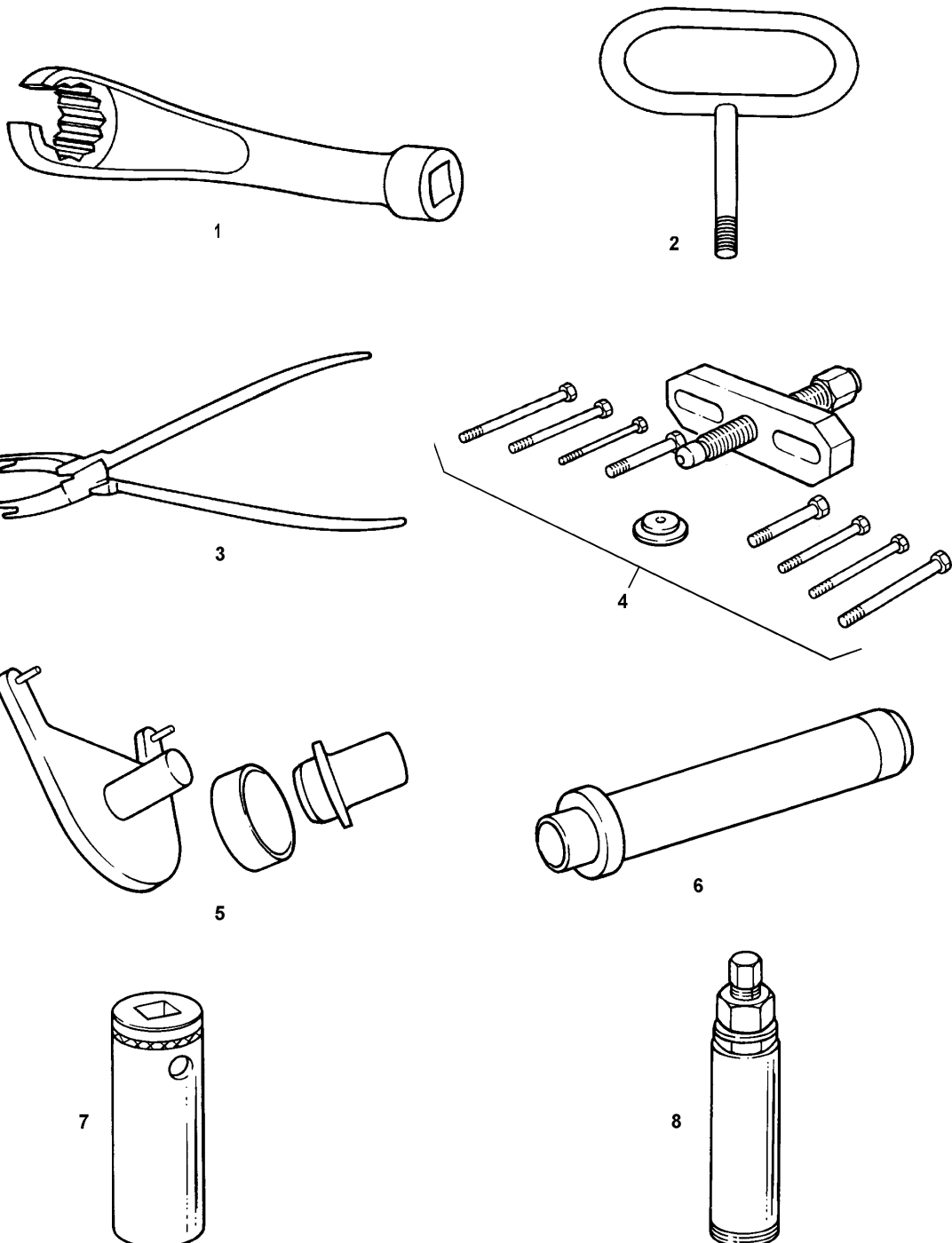
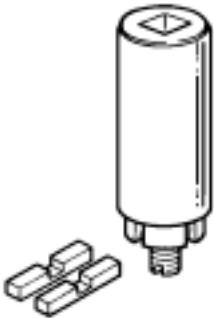
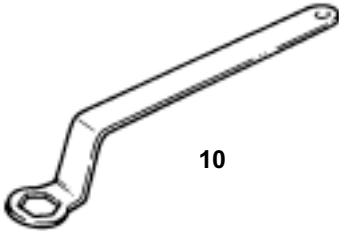


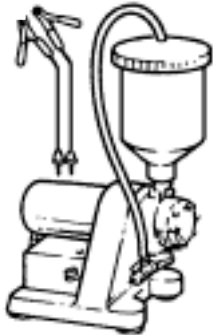
Figure 1 - Special Tools



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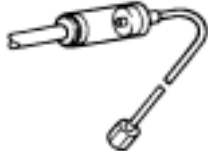
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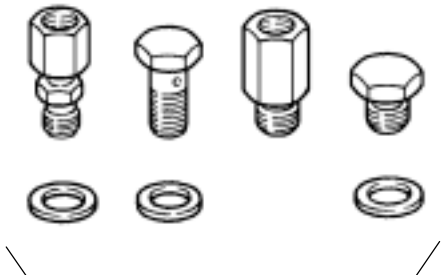
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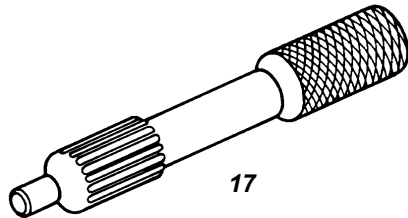
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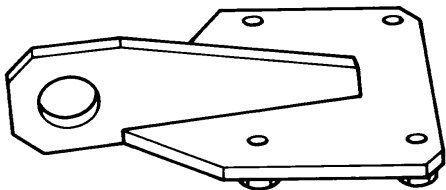
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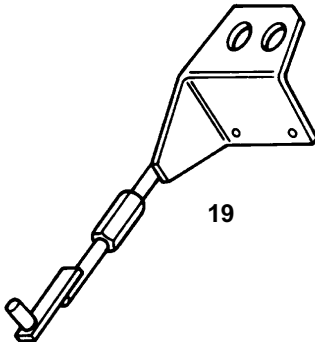
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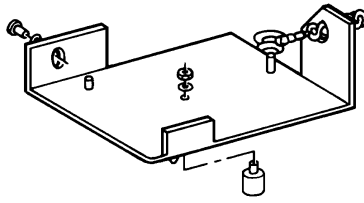
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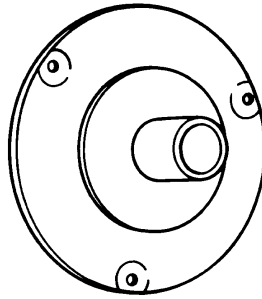
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Figure 1 - Special Tools (Continued)

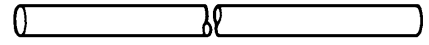
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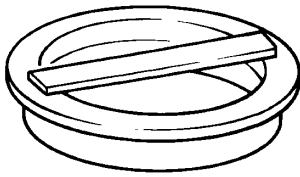
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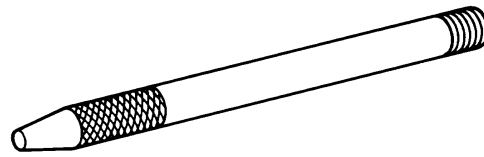
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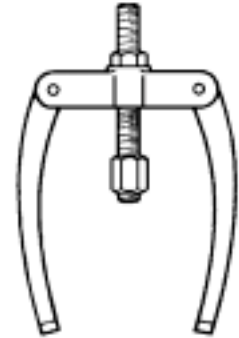
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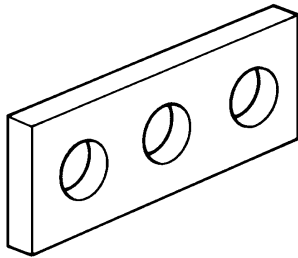
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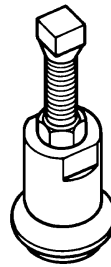
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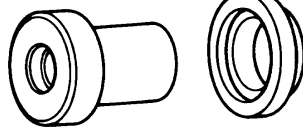
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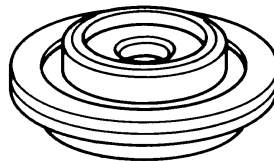
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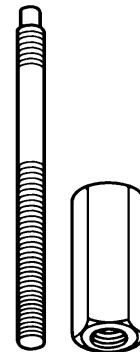
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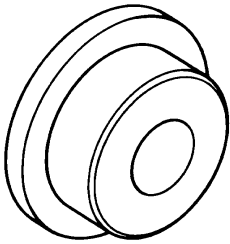
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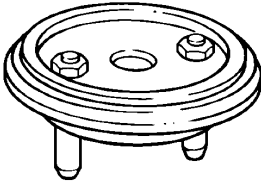
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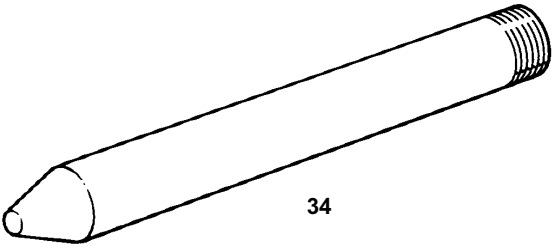
Figure 1 - Special Tools (Continued)



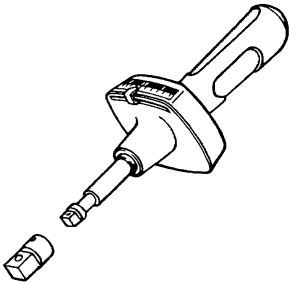
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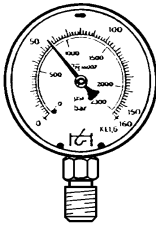
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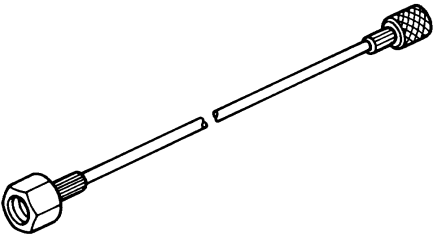
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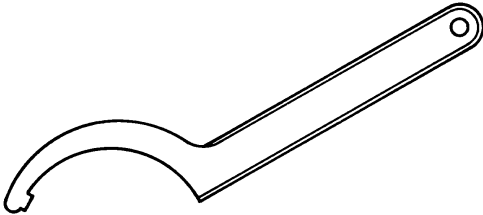
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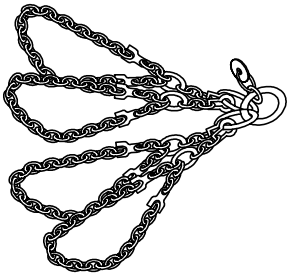
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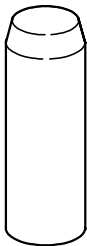
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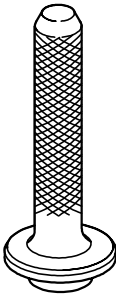
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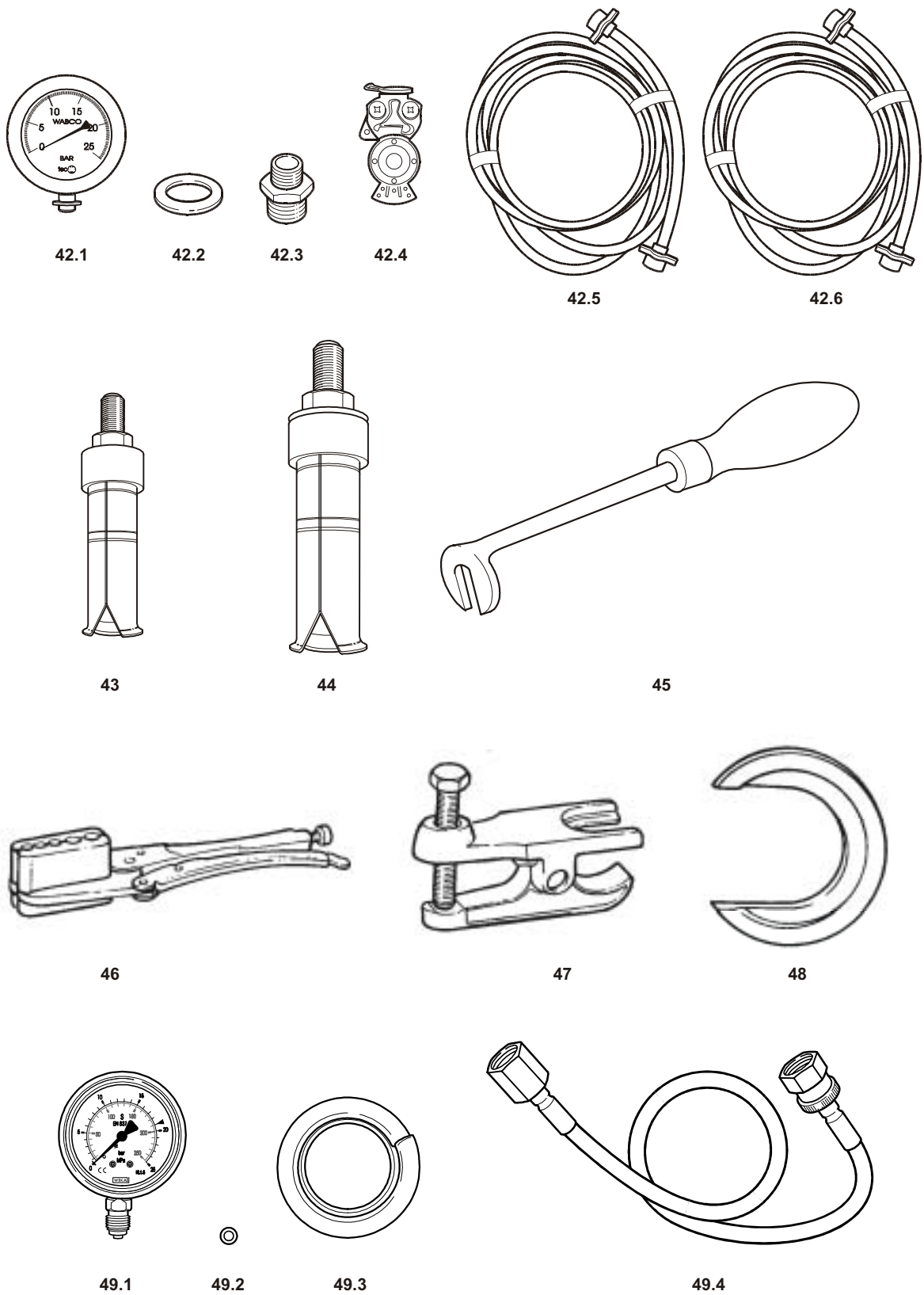
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Figure 1 - Special Tools (Continued)



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Figure 1 - Special Tools (Continued)

LIST OF LUBRICANTS

Table 3 - List of Lubricants

Equipment	Lubricant	Capacity (litres)
Engine (including filter)	OMD-115	14.5
Engine Mounts	Anti-Friction Paste	As required
Engine Brake Linkage	High Temperature Lubricating Paste	As required
Engine Start Pilot	Ether	0.05
Transmission w/Transfer Case & Power Take-off	Castrol Syntrans 75W/85	12.0
Splitter Transmission	Castrol Syntrans 75W/85	2.8
Power Divider	OEP-220	3.5
Differentials (All)	OEP-220	2.5
Drive Line Universal Joints	XG-274	As required
Wheel Hubs (All)	OEP-220	0.6
Power Steering System	OX 47 Grade 10	3.2
Steering Knuckle Bearings and Steering Linkage	XG-274	As required
Brake Hydraulic System Total Capacity	OX (AUST) 8	1.0
Clutch Master Cylinder Total Capacity	OX (AUST) 8	0.2
Radiator Inhibitor (Water and Inhibitor 50/50 Mix)	Castrol Anti Freeze DB, or BP Coolant 007/400F	20
Hydraulic System Capacity (Dry)	At ambient temperatures 5°C to 40°C (max oil temp 80°C) - Hydraulic fluid, Petroleum, Antiwear Grade 68 (Tellus 68)	135
	At ambient temperatures minus 6°C to 25°C (max oil temp 60°C) - Hydraulic fluid, Petroleum OM 33	135
Hydraulic System Capacity (Wet)	At ambient temperatures 5°C to 40°C (max oil temp 80°C) - Hydraulic fluid, Petroleum, Antiwear Grade 68 (Tellus 68)	94
	At ambient temperatures minus 6°C to 25°C (max oil temp 60°C) - Hydraulic fluid, Petroleum OM 33	94
Towing Boom All Lubrication Points	XG-274	As required
Earth Anchor Legs	XG-274	As required
Winch Cable Rollers and Fairlead (front)	XG-274	As required
Winch Cables	Wire Rope Lubricant	As required
Crane Lubrication Points	XG-274	As required
Towing Pintle	XG-274	As required
Windscreen Washer Reservoir	Water	9.0
Air Conditioner Compressor	Emkarate RL375	0.15
Air Conditioner Refrigerant	R 134a	2000g

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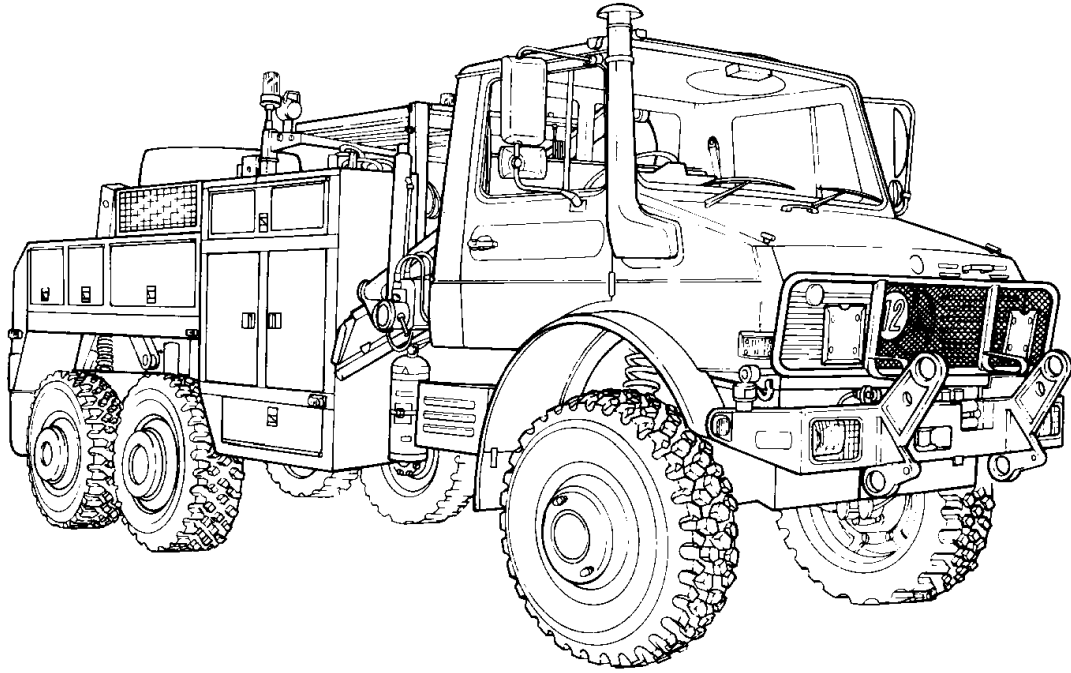


Figure 2 - Truck, Wrecker, Medium, MC2, Mercedes-Benz Unimog, U2450L

INTRODUCTION

1. This EMEI contains procedures for inspection, removing, dismantling, repairing, assembling, installing and testing various components. Where applicable, instructions for the adjustment, lubrication and minor servicing of these items are included.

WARNING

ALL INDUSTRIAL SAFETY WORK PRACTICES AND EQUIPMENT OPERATING AND MAINTENANCE INSTRUCTIONS PERTAINING TO THIS EMEI ARE TO BE ADHERED TO.

2. Protect the vehicle from dust and inclement weather when performing any of the tasks contained in this EMEI. If practical perform these tasks in a sheltered or enclosed area.

CAUTION

DO NOT USE ADHESIVE TAPE TO SEAL FUEL OR OIL OPENINGS. THE ADHESIVE ON MOST TAPES IS SOLUBLE IN FUEL OR OIL AND CAN CAUSE CONTAMINATION. REMOVE TEMPORARY COVERS BEFORE ASSEMBLING.

3. Prevent dirt and foreign objects from entering any component. Place clean temporary covers on all exposed openings. All open hoses, tubes and lines are to be protected with plastic or metal caps or plugs.

CAUTION

ISOLATE THE VEHICLE BATTERIES TO PREVENT SHORT CIRCUITS AND OVERHEATING OF ELECTRICAL EQUIPMENT BEFORE REMOVING ANY ELECTRICAL SYSTEM COMPONENTS.

4. When disconnecting electrical connectors, hoses and fittings, remove clamps as required to gain slack and avoid damage to connectors and fittings.

5. Use only those fuels and lubricants specified in the Servicing Instruction (EMEI Vehicle D 399), Light and Medium Repair Instructions and the Operator Handbook and when replenishing fuel or lubricants.

WARNING

THE HANDLING, STORAGE, USE AND DISPOSAL OF CHEMICAL SUBSTANCES, FUELS AND LUBRICANTS IS TO BE IN ACCORDANCE WITH MOHS, MSDS AND EMEI WORKSHOP E SERIES REQUIREMENTS.

6. Discard all contaminated fuel and lubricants drained from the vehicle in accordance with current instructions.
7. Discard all used gaskets, seals, cotter pins, tab washers, lock pins, key washers and lock washers.
8. Any fastenings or fittings being tightened to prescribed torques are to have dry, clean threads unless specified. Thread sealants are to be applied to dry, clean, oil-free threads.

WARNING

THE COMPRESSED AIR ACCUMULATORS ARE PRESSURE VESSELS. UNDER NO CIRCUMSTANCES ARE PRESSURE VESSELS TO BE HEATED, BRAZED OR WELDED. A DAMAGED AIR ACCUMULATOR CAN EXPLODE WHEN PRESSURISED. LETHAL INJURIES GENERALLY RESULT FROM SUCH AN EXPLOSION.

9. Before removing any pneumatic components from the vehicle, exhaust all compressed air accumulators through their respective drain valves.