

**WATER PURIFICATION EQUIPMENT, TRAILER MOUNTED, 20 000 LPH
NSN 4610-66-122-6617**

SERVICING INSTRUCTION

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.

Introduction

1. This EMEI lists the requirements for each level of servicing for the Water Purification Equipment, Trailer Mounted, 20 000 LPH, Cross Plate Clarifier (CPC 20), as follows:
 - a. Table 1 – Servicing Schedule - details the frequency of each level of servicing;
 - b. Table 2 – Servicing Requirements When in Use - details the actions to be performed at each of the levels of servicing when the equipment is in use;
 - c. Table 3 – Preparation for Storage Servicing Requirements – details the actions to be performed prior to placing the equipment into storage;
 - d. Table 4 – Servicing Requirements When in Storage - details the actions to be performed at the level of servicing when the equipment is not in use and is in storage; and
 - e. Table 5 – 24 Months Servicing Requirements (in Use or in Storage).
2. Servicing is based on hours run or calendar months that have expired. Unit commanders may reduce the period between servicing or add servicing operations to meet extraordinary requirements.
3. A scheduled service may be anticipated or delayed by 10% of the interval between services, to meet operational needs and permit workload planning.

Lubricants

4. All lubricants to be used are to be as specified in DEF(AUST) 206E – Handbook of Liquid Fuels, Lubricants and Allied Products.

Associated Publications

5. Reference may be required to the latest issue of the following documents:
 - a. EMEI Engr Equip W 630 – Water Purification Equipment – Data Summary;
 - b. EMEI Engr Equip W 636 – Water Purification Equipment – Authority for Use; and
 - c. EMEI Engr Equip W 636-1 – Water Purification Equipment – Maintenance Manual.
6. Refer to the following publications for safety of personnel and the prevention of damage to equipment:
 - a. EMEI Workshop E Series – Occupational Health and Safety Instructions;
 - b. Defence safety Manual (SAFETYMAN); and
 - c. Product Material Safety Data Sheets (MSDS) – product information sheets.

Servicing

7. Servicing of the CPC 20 is to be carried out by Vehicle Mechanic (ECN 229), Technician Electrical (ECN 418) and Fitter Armament (ECN 146) or Civilian Equivalent (Table 2). A qualified operator may be required to assist the tradesman or technical maintenance staff during servicing of the equipment.
8. Where varying limits are expressed (eg hours or months) the service is to be carried out at the expiration of the first occurring service interval.

Table 1 Servicing Schedule

Serial	Type of Service	Period	Responsibility
1	Minor service (in use)	250 hours or 6 months	First line
2	Major service (in use)	500 hours or 12 months	First line
3	Preparation for storage	Prior to placing into storage	Third Line Logistics Unit
4	Minor service (In storage)	6 months	Third Line Logistics Unit
5	24-month service	24 months	First Line or Third Line Logistics Unit (whoever is responsible for the equipment at the designated interval)

NOTE

When any equipment exceeds the servicing interval plus 10% maximum limit, it is to be classified **Do Not Use-XX** until the required service has been completed.

When equipment is to be removed from storage, a major service (in use) is to be completed by the Third Line Logistics Unit prior to issue.

9. Daily and weekly operator servicing is to be carried out as detailed in the Operator's Manual.

WARNING

Chemical substances are to be stored, used and handled in accordance with SAFETYMAN, MSDS and EMEI Workshop E Series.

CAUTION

All industrial safety, work practices equipment operating and maintenance instructions pertaining to this EMEI are to be adhered to.

NOTE

During servicing procedures, nuts and bolts that require re-tensioning or adjusting and have been assembled using thread sealant are to have the thread sealant renewed.

Functional Test

10. At the completion of the minor service (in use) and the major service (in use), the water purification system is to be tested to ensure that the system is functioning correctly.
11. At the completion of the preparation for storage servicing and the minor service (in storage) servicing, the generator is to be run for 20 minutes and the four hydraulic levelling jacks fully cycled.

Table 2 Servicing Requirements - When in Use

Serial	Item or Assembly	Tradesman	Minor Service 250 hrs or 6 Months	Major Service 500 hrs or 12 Months	Remarks
1	Generator- engine oil	Technician Electrical ECN 418	D	D	Lubricant – OMD 115 (O-238) (Ref EMEI Engr Equip W 636-1), Section 5 General Maintenance, Page 14.
2	Generator- engine oil filter	Technician Electrical ECN 418	R	R	(Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 14.
3	Generator- valve tappet clearance	Technician Electrical ECN 418		IA	Inspect/adjust clearance at 2000 hrs or 24 months. Tappet clearance when cold 0.10 mm, (Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 15.
4	Generator- cylinder cooling fins	Technician Electrical ECN 418	C	C	(Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 16.
5	Generator- oil cooler fins	Technician Electrical ECN 418	C	C	(Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 16.
6	Generator- cooling fan assy	Technician Electrical ECN 418	C	C	(Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 16.
7	Generator- space between sump and bottom plate	Technician Electrical ECN 418	IA	IA	For sufficient airflow the manufacturer recommends a minimum spacing of 150 mm.
8	Generator- engine fuel filter	Technician Electrical ECN 418		R	(Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 17.
9	Generator- air filter element	Technician Electrical ECN 418	IC	R	(Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 18.
10	Generator- fuel pump screen	Technician Electrical ECN 418		C	(Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 18.
11	Generator- nuts and bolts	Technician Electrical ECN 418	IY	IY	Check all nuts and bolts for tightness. Cylinder head bolts are not to be re-tightened. (Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 17.
12	Generator	Technician Electrical ECN 418		I	Check cables for fraying, deterioration or corrosion at terminals.
13	Cooling fan belt tension	Vehicle Mechanic ECN 229		I	Recheck tension 25 hours after fitting of new belt. (Ref EMEI Engr Equip W 636-1), Section 5- Drawings, General Maintenance, Page 22.
14	Hydraulic jack oil reservoir	Fitter Armament ECN 146	T	T	Lubricant - OM 65. Capacity 50 litres.
15	Hydraulic jack oil filter element	Fitter Armament ECN 146		R	
16	Raw water pump	Fitter Armament ECN 146	L	L	Lubricant – XG 279. (Ref EMEI Engr Equip W 636-1).
17	Treated water pump	Fitter Armament ECN 146	L	L	Lubricant – XG 279. (Ref EMEI Engr Equip W 636-1).
18	Axle bearings	Vehicle Mechanic ECN 229		ILA	Lubricant – XG 279.
19	Brake camshaft bearings	Vehicle Mechanic ECN 229	T	T	Lubricant – XG 279.
20	Brake linings and drums	Vehicle Mechanic ECN 229		I	Replace shoes if necessary

Table 2 Servicing Requirements - When in Use (Continued)

Serial	Item or Assembly	Tradesman	Minor Service 250 hrs or 6 Months	Major Service 500 hrs or 12 Months	Remarks
21	Brakes	Vehicle Mechanic ECN 229		A	
22	Gear operated valve	Fitter Armament ECN 146	L	L	Lubricant – XG 279.
23	Compressor air filter (diaphragm)	Fitter Armament ECN 146	C	C	(Ref EMEI Engr Equip W 636-1)
24	Suspension	Vehicle Mechanic ECN 229		I	
25	Batteries, cables and connectors	Vehicle Mechanic ECN 229		IC	(Ref EMEI Engr Equip W 636-1), Hatz Repair Manual - Section 3.24 Electrical System.
26	Lights	Technician Electrical ECN 418	I	I	
27	Hydraulic lines and connections	Fitter Armament ECN 146	I	I	
28	Fuel lines and connections	Vehicle Mechanic ECN 229	I	I	
29	Wheel nuts	Vehicle Mechanic ECN 229	IY	IY	Tighten to 270 N.m.
30	Fuel tank	Vehicle Mechanic ECN 229	I	I	Check fuel tank for contamination
31	Oil pressure switch	Fitter Armament ECN 146		I	(Ref EMEI Engr Equip W 639-3).
32	All electrical lines and points 50 volts and above	Technician Electrical ECN 418		I	Inspection shall be performed as specified in AS3001, Section 3.10

Notes:

Serial numbers shown indicate the order which servicing tasks are to be performed.

Legend: C – Clean, A – Adjust, I – Inspect, L – Lubricate, T – Check and top up, D – Drain and refill, O – Overhaul, R – Replace,
Y – Tighten

Table 3 Servicing Requirements - Preparation for Storage

Serial	Item or Assembly	Tradesman	Service Requirement	Remarks
1	Generator- cylinder cooling fins	CE to Technician Electrical ECN 418 or Vehicle Mechanic ECN 229	C	(Ref EMEI Engr Equip W 636-1), Section 5-Drawings, General Maintenance, Page 16.
2	Generator- oil cooler fins	CE to Technician Electrical ECN 418 or Vehicle Mechanic ECN 229	C	(Ref EMEI Engr Equip W 636-1), Section 5-Drawings, General Maintenance, Page 16.
3	Generator- cooling fan assy	CE to Technician Electrical ECN 418 or Vehicle Mechanic ECN 229	C	(Ref EMEI Engr Equip W 636-1), Section 5-Drawings, General Maintenance, Page 16.
4	Generator- air filter element	CE to Technician Electrical ECN 418 or Vehicle Mechanic ECN 229	IC	(Ref EMEI Engr Equip W 636-1), Section 5-Drawings, General Maintenance, Page 18.
5	Generator	CE to Technician Electrical ECN 418 or Vehicle Mechanic ECN 229	I	Check cables for fraying, deterioration or corrosion at terminals.
6	Hydraulic jack oil reservoir	CE to Fitter Armament ECN 146	T	Lubricant - OM 65. Capacity 50 litres.
7	Raw water pump	CE to Fitter Armament ECN 146	L	Lubricant – XG 279. (Ref EMEI Engr Equip W 636-1).
8	Treated water pump	CE to Fitter Armament ECN 146	L	Lubricant – XG 279. (Ref EMEI Engr Equip W 636-1).

Notes:

Serial numbers shown indicate the order which servicing tasks are to be performed.

Legend: CE – Civilian equivalent, C – Clean, A – Adjust, I – Inspect, L – Lubricate, T – Check and top up, D – Drain and refill, O – Overhaul, R – Replace, Y – Tighten

Table 4 Servicing Requirements - Minor Service in Storage

Serial	Item or Assembly	Tradesman	Service Requirement	Remarks
1	Generator	CE to Technician Electrical ECN 418	I	Check cables for fraying, deterioration or corrosion at terminals.
2	Hydraulic jack oil reservoir	CE to Fitter Armament ECN 146	T	Lubricant - OM 65. Capacity 50 litres.
3	Batteries, cables and connectors	CE to Vehicle Mechanic ECN 229	IC	(Ref EMEI Engr Equip W 636-1), Hatz Repair Manual - Section 3.24 Electrical System.

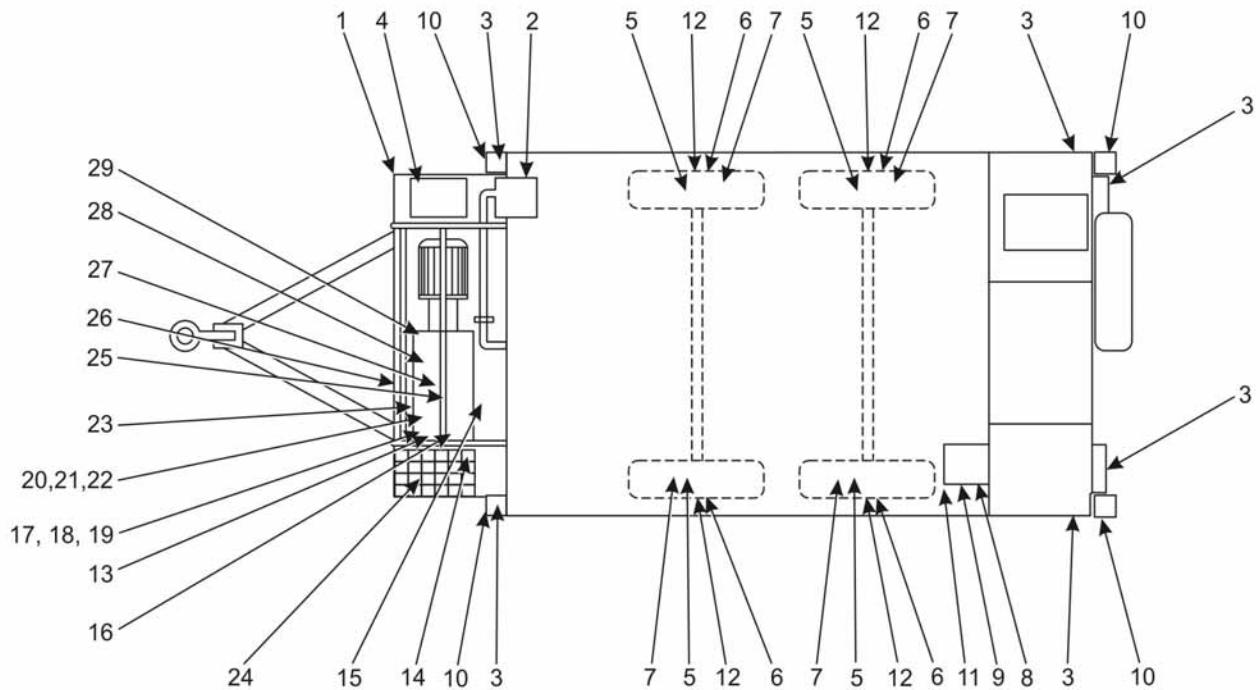
Notes:

Serial numbers shown indicate the order which servicing tasks are to be performed.

Legend: CE – Civilian equivalent, C – Clean, A – Adjust, I – Inspect, L – Lubricate, T – Check and top up, D – Drain and refill, O – Overhaul, R – Replace, Y – Tighten

Table 5 24 Months Servicing Requirements - In Use or in Storage

Serial	Item or Assembly	Tradesman	Service Requirement	Remarks
1	Manifold nuts	Vehicle Mechanic ECN 229 or CE	Y	
2	Engine	Vehicle Mechanic ECN 229 or CE	C	Steam clean
3	Mounting nuts and bolts	Vehicle Mechanic ECN 229 or CE	Y	
4	Fan hub and pulley	Vehicle Mechanic ECN 229 or CE	CI	
5	Alternator bearing	Technician Electrical ECN 418 or CE	CL	Check, regrease as necessary or after major overhaul
6	Check and clean induction motor	Technician Electrical ECN 418 or CE	CA	Check and clean. Refer to EMEI Engr Equip W 636-1, Low Voltage Squirrel Cage Induction Motors (page 152)
<p>Notes:</p> <p>Serial numbers shown indicate the order which servicing tasks are to be performed.</p> <p>Legend: CE – Civilian equivalent, C – Clean, A – Adjust, I – Inspect, L – Lubricate, T – Check and top up, D – Drain and refill, O – Overhaul, R – Replace, Y – Tighten</p>				



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Figure 1 Servicing Points for CPC 20

Table 6 Servicing Point Locations for CPC 20

Item	Item or Assembly	Item	Item or Assembly
1	Hydraulic jack oil filter element	16	Generator - cooling fan assy
2	Raw water pump	17	Generator - space between sump and bottom plate
3	Lights	18	Generator - engine fuel filter
4	Hydraulic jack oil reservoir	19	Generator - air filter element
5	Brake linings and drums	20	Generator - fuel pump screen
6	Wheel nuts	21	Generator - nuts and bolts
7	Adjust brakes	22	Generator - cooling fan belt tension
8	Gear operated valve	23	Generator - oil cooler fins
9	Treated water pump	24	Batteries, cables and connectors
10	Hydraulic lines and connections	25	Generator - cylinder cooling fins
11	Suspension	26	Generator - fuel tank
12	Check wheel bearing adjustment	27	Generator - valve tappet clearance
13	Fuel pump, fuel lines and connections	28	Generator - engine oil filter
14	Oil pressure switch	29	Generator - engine oil
15	Compressor air filter (diaphragm)		

END

Distribution List: **ENGR W 04.0 – Code 2 (Maint Level)**
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