

DIRECTORATE GENERAL BORDER ROADS

GENERAL MAINTENANCE INSTRUCTION NO. 132

ON

SNOW PLOUGH ROLBA R – 12000 (MONO FORCE)

INTRODUCTION

1. Battery is a costly fitment in a vehicle or equipment. Proper care and daily maintenance of the battery to optimise its life, therefore, needs no emphasis. It must be- remembered that 'ROTARY SNOW PLOUGH ROLBA R-1200 (MONO FORCE)':

(a) Is a Specialist equipment and is vital for snow clearance during winter.

(b) Cannot be tow started with the help of another vehicle or equipment.

(c) DULTZ engine, the prime mover of the ROLBA snow clearing machine, can be started only when the two lead-acid batteries (12 Volt 138 Ampere Hour each) are in a serviceable and well charged condition.

2. To prevent Lead Acid Batteries getting discharged at rapid rate under severe cold conditions existing in the heavily snow bound areas, where these machines have to actually operate, this should be kept always in charged condition.

AIM

3. To lay down instructions on the daily maintenance and care of Lead-Acid Batteries (12 Volt 138 Ampere Hour each).

4. (a) User Units. Carry out maintenance tasks regularly as per details given below.

(b) Field Workshops (GREF). Check serviceability of the batteries, whenever a ROLBA machine comes to Field Workshop (GREF) for periodic inspection/repairs.

ITEMS AFFECTED

5. Two numbers 12 Volts 138 Ampere Hour each e 24 volts system of Rotary Snow Plough ROLBA R -1200 'MONO FORCE'.

DETAILS

6. The following maintenance and preservation instructions on lead Acid batteries as recommended by manufacturers will be strictly followed.

7. The batteries have fully charged plates and may be used without prior charging 20 minutes after filling with sulphuric acid.

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8. Storing of unfilled batteries. Further care of the unfilled batteries is not required. The stores should be dry and clean.

9. Preparation for service. When filling, batteries and acid should have a temperature of atleast + 10 C (50 F).

10 Fill the battery with acid just before installing it into the vehicle.

(a) Remove vent plus : remove and discard the card board disks and/or the adhesive tape, if any.

(b) Fill the cells with pure accumulator acid of 1.28 specific gravity (in tropical climate 1.23) – at on acid temperature of 20 C (68 F) – up to the acid level indicator or 15 mm (5/8”) above top of the plates (not top of the separators).

(c) Allow the battery to be stand for 15 minutes, them slightly shake the battery and re-adjust acid level, if necessary.

(d) Screw on the vent plugs firmly.

(e) Battery is ready for use and may be installed into the vehicle.

SERVICE OF THE BATTERY:

(f) If due to too low temperature or unfavorable storing conditions the battery does not supply it is not installed into a vehicle with in 4 week after filling with sulphuric acid, the battery should be charged.

(g) The state of charge of a battery can be determined by measuring the density of the acid.

(h) If the density of acid is below 1021 (at a temperature of 20 C (68 F) and correct electrolyte level) the battery should be given a charge.

(i) Battery is to be charged with D.C. only. Connect positive (+) battery terminal to positive terminal of charge and negative (-) battery terminal to negative terminal of charger.

(j) For charging current we recommend 1/10 of the value of the capacity of the battery, e.g. at a capacity of 44 Ah = 4.4 A.

(k) The battery may be charged with higher current until gassing starts (at 2.4 volts per cell).

(l) During charge the temperature of the acid should not exceed 55 C (131 F) otherwise interrupt charge or reduce charging current to allow acid to cool down.

(m) Continue the charge until the specific gravity of the acid and the voltage remain constant for two hours. The specific gravity of the acid changes by 0.01 for every 14 C (57 F) difference of temperature the density decreases at lower temperatures it increases. Example : At a temperature of 84 C (93 F) the reading of the acid density must be increased by 0.01 to obtain the correct value in relation to an acid temperature of 20 C (68 F).

(n) Fix the battery firmly in the vehicle and make sure that it is correctly connection.

(o) Keep the battery clean and dry. Terminals and clips should be slightly greased with acid-free and acid resistant grease, e.g. Vaseline.

(p) Check acid- level approximately every four weeks and, if necessary, either and distilled or deionized water until acid – level indication mark is reached or 15 mm (5/8”) above top of plates.

TREATMENT OF BATTERY WHEN NOT IN USE :

(q) If car or battery is not used, the battery must either be continuously trickle – charged by a trickle- charger with a very low current of about 0.06 A or must be given a surcharge every month and be discharged every third month and them immediately be recharged again. Never keep a battery standing idle in a discharged condition.

(r) Batteries taken out of service should be kept cool and dry.