



WS No. 19 Mark III

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VARLEY , DRY TYPE BATTERYINITIAL CHARGING AND MAINTENANCEGeneral

1. The Varley dry type of lead-acid battery is now being introduced into the Service for use on motor cycles. It is of the normal lead-acid type, but is provided with absorbent separators, using glass wool. This renders the battery dry inasmuch as there is no free electrolyte. Special attention is required when initial filling is carried out; this is described in detail in the succeeding paragraphs.

Identification

2. The batteries are readily identified by the marking on the side of the battery case, i.e., Dry Type, "Varley" MC.7/12.

Specific gravity of electrolyte

3. Electrolyte of specific gravity 1.250 at 60° F. will be used for initial filling of batteries. The hydrometer readings must be corrected for electrolyte temperature obtaining. (See Power J 318, Fig. 3).

Initial filling

4. Initial filling may be carried out by one of the two following methods (method B being recommended when filling a large number of batteries). Each battery will absorb approximately one pound or two-thirds of a pint of electrolyte.

Method A. Introduce electrolyte into each cell vent by means of a hydrometer. Continue to refill each vent in turn, taking care to allow the air to escape, until no more electrolyte is absorbed by the battery. The operation will take $\frac{3}{4}$ to 1 hour.

Method B. Pour electrolyte on the top of the battery, covering the three cell vents. Continue pouring until the level of electrolyte rises to the top of the battery container. Leave for $\frac{1}{4}$ hour and then add further electrolyte until no more is absorbed by the battery. After initial filling remove any surplus electrolyte from the top of the battery and dry the surface.

Initial charging

5. Immediately after filling with electrolyte the battery should be given its first charge. During the initial charging it is essential that the cell vent stoppers be removed and cell vents be kept full of electrolyte (specific gravity 1.250 at 60 °F.) Do not allow the top of the battery to become flooded with electrolyte during charge. The initial charging rate is 1 ampere for 30 hours.

6. During the final state of charge the voltage of the battery should be 7.8 V, i.e., 2.6 V per cell, and every cell should be gassing freely.

Procedure after initial charging

7. (a) Allow the battery to stand for $\frac{1}{4}$ hour after charging.
 (b) Empty away all surplus electrolyte remaining in the cell vents by inverting the battery.
 (c) Remove the sealing strip from the vent holes in the cell vent stoppers.
 (d) Replace the cell vent stoppers.

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- (c) Wash the top of the battery with water, and dry off.
- (f) Apply lightly to the battery terminals, Mineral jelly G.S. (Cat. No. HA 0109) or Petroleum, soft (Cat. No. HA 6304), taking care that none comes into contact with the cell lids, container or sealing compound.

Note: ON NO ACCOUNT MUST GREASE, G.S. BE USED FOR THIS PURPOSE.

Topping-up

8. Water used for topping-up should, if possible, be perfectly pure (see Power J 318). Use distilled water for safety. Top-up every two weeks (one week in the tropics) adding distilled water until each cell will not absorb any more and the electrolyte commences to remain in the cell vents. Remove any excess electrolyte remaining in the cell vents (allowing the battery to stand at least $\frac{1}{4}$ hour before removing the excess electrolyte).

Recharging

9. Batteries removed from motor cycles should first be topped-up with distilled water (see para. 8) and then charged for 15 hours at 1 ampere.

Movement and storage

10. Paras. 94 - 97 of Power J 318 will apply. All filled and charged batteries held in store must be topped-up and given a freshening charge at least every month, especially in tropical theatres.

Note: Always top-up before recharging.

The freshening charge given monthly should be applied for 6 to 8 hours at 1 ampere.

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END