

Service-Information



Group: 61 General Electrical	February 1982	Bulletin No.: 61 008 82 (2045)
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- For U.S.A. and Canada Only -

Re: Batteries - Preparation and Maintenance

There have been various complaints that the electrical capacity of our motorcycle batteries is too low, and we therefore would like to issue full details for the preparation of these batteries and their maintenance.

1. General Instructions

Never bring a naked flame close to a battery or into a room in which batteries are charged, nor produce any sparks, or permit smoking in such areas, or an explosion may result.

Exercise great care when handling battery acid, which could cause personal injury and damage clothing. Wear protective goggles.

If any acid splashes on the skin or clothing, rinse off immediately with large amounts of water.

If the skin is already broken or scratched, keep these areas away from lead (the metal used in battery cells); after working on or with batteries, always wash hands.

Do not place any tools on top of the battery, as this could cause a short-circuit between the terminal posts and result in an explosion.

Always use chemically-pure battery acid, having a specific gravity of 1,280 (or 1,230 for batteries used in tropical climates).

To dilute sulphuric acid, use only distilled or desalinated water.

Do not add any substances such as proprietary battery performance improvers or similar additives, or the warranty will be rendered invalid.

CAUTION: Always check and install breeder tube and routing correctly.

2. Preparing for Use

Remove cell plugs and take off any adhesive strips or sealing discs.

When filling the battery, it should be at a temperature of at least 50°F (the acid should also be at this temperature or above).

Fill the battery cells with the acid up to the acid level mark (if provided) or to a specified height of 6 mm above the plates (not above the separators).

Do not use a metal funnel to add the acid.

The best method of measuring battery acid level is to insert a thin glass or clear plastic tube until it rests on top of the plates, then close off the upper end with the finger, so that the depth of the acid can be seen when the tube is removed.

Allow the battery to stand for one hour or until cool, then shake or tilt it slightly to eliminate trapped air and add more acid if necessary until the level returns to the specified height.

Since batteries have only 60 percent of their nominal output capacity when filled, they must be charged.

The recommended charging current in Amperes (A) is 1/10 of the quoted battery capacity; that is to say, 2.8 A (or approximately 3 A) on a battery rated at 28 Ah.

During charging, the acid temperature must not exceed 131°F; if it does, interrupt the charging process or reduce the charging current until the temperature remains below this figure.

After charging has been completed, check the acid level and correct it if necessary by adding distilled or desalinated water up to the specified height above the tops of the plates in each cell. Do not top up with acid. Reinstall cell plugs.

We suggest the positive (+) side be attached first.

After connecting the cables, apply a light coat of acid-free, acid-resistant grease (e.g. Vaseline).

Keep the battery clean and dry.

Check acid level at monthly intervals. Top up with distilled water if evaporation occurs and the acid level in the cells

3. Treatment of Battery when Storing Motorcycle for Winter

If the vehicle is taken off the road or the battery is stored out of use for a lengthy period, the battery must either be trickle-charged continuously at a very low current, (approximately 0.03 A), or recharged at intervals of one to two months.

Never leave a battery to stand in a flat (discharged) state.

Batteries stored out of use must be kept cool and dry.

4. Troubleshooting - Batteries

Malfunction	Cause	Remedy
Acid level too low	Overcharging, evaporation (particularly in hot weather)	Top up with distilled or desalinated water (if the battery is still charged)
Acid overflows from cells.	1. Charge voltage too high	Check voltage regulator and adjust or renew as necessary
	2. Acid level too high	Draw off excess acid with the bulb-type hydrometer
Specific gravity of acid too low	1. Battery is flat	Recharge battery
	2. Alternator faulty	Check alternator
	3. Short-circuit in vehicle's wiring	Check electrical system
	4. Acid diluted--maintenance error	Restore acid to correct strength
Specific gravity of acid too high	Acid added instead of distilled water	Restore acid to correct strength
Battery output is too low; severe	1. Battery is flat	Recharge battery
	2. Charge voltage too low	Adjust or renew voltage regulator
	3. Connecting terminals loose or oxidized	Clean connecting terminals; grease lightly with Bosch Ft 40 v 1 grease, particularly on undersides. Tighten terminal bolts firmly
	4. Battery is discharging itself at too rapid a rate, due to impurities in acid	Renew the battery

Malfunction	Cause	Remedy
	6. Battery exhausted --paste fallen out of cell plates	Renew battery
	7. Acid level below tops of plates	Add distilled or desalinated water to specified height
Battery life is too short	1. Excessive vibration	Check resilient battery tray mountings
	2. Battery may be "sulphated"	Battery output too low. See section #5
	3. Impure battery acid	Renew battery
Battery regularly discharged	1. Fault in alternator, voltage regulator, or cable connections	Repair or renew alternator or voltage regulator. Make sure that wiring connections are clean and tight
	2. Too many items of equipment supplied from battery	If motorcycle is used mostly for short journeys (in town, at night), switch off unnecessary consumers (lights, heated handlebar grips, non- standard or additional driving lights, etc.)
Battery regularly overcharged	Fault in voltage regu- lator or possibly in alternator	Renew voltage regulator or have it adjusted; check alternator
Diode rectifier out of action (for machines with alternator)	Battery poles connected wrong way around (in- correct polarity	Discharge battery, then recharge to correct polarity

QUICK REFERENCE CHART

	GOOD BATTERY	SUSPECT BATTERY	ACTION	SPECIFIC GRAVITY CHART
PLATES	(+) CHOCOLATE (-) GREY	WHITE BROKEN OR CORRODED	REPLACE	<p>The chart plots Specific Gravity on the y-axis (1000 to 1300) against % of Charge on the x-axis (0 to 100). A solid diagonal line represents the relationship. Key annotations include: 'DEAD CELL' at approximately 33% charge (SG 1100), and 'RECHARGE' at approximately 67% charge (SG 1200). Dashed vertical lines connect these points to the x-axis.</p>
SEDIMENT	NONE OR VERY LITTLE	SEDIMENT UP TO PLATES (SHORTING OUT)	REPLACE	
VOLTAGE	ABOVE 12V	BELOW 12V	TEST CHARGE	
ELECTROLYTE LEVEL	ABOVE PLATES	BELOW TOP OF PLATES	FILL AND TEST CHARGE	
SPECIFIC GRAVITY	ABOVE 1.200 ON ALL CELLS NO MORE THAN 0.20 DIFF. BETWEEN CELLS	BELOW 1.100 OR A DIFF. OF MORE THAN 0.20 BETWEEN CELLS	TEST CHARGE	