



## Storage and maintenance of batteries during periods of non-use.

Batteries of older design types such as lead-antimony (such as often found on “classic” vehicles) tend to self-discharge in storage more quickly than the more modern lead-calcium or sealed “MF” batteries which retain their charge for several months if stored in a cool ambient.

Sealed “MF” or “AGM” motorcycle batteries (whose acid electrolyte is held by “Absorbent Glass Mat” separators) retain their charge in storage better than starter batteries with filler caps, but are more difficult to recover once truly deep-discharged. The warmer the ambient temperature of the storage area the faster the battery’s tendency to self-discharge. Batteries not in regular use which for any reason cannot be maintained by a good maintenance charger are thus best stored in cold ambient, BUT NOT FREEZING !

If you know not be used for several weeks or months it is best to remove it from the vehicle for maintenance by an appropriate charger as described below in isolation from the vehicle’s wiring system.

However most motorcycles are now fitted with alarms or immobilizers which require the battery to be maintained while remaining connected to the vehicle’s wiring system. In such cases it is vital to select a maintenance charger whose parameters are “gentle” enough to avoid causing problems with the vehicle’s electronic systems. An in-line fuse between charger & positive battery terminal is wise to protect alarms from disablement by thieves & where a failing car bonnet or other accident could short a charger cable.

Battery manufacturers recommend that engine-start batteries are best kept fully charged at all times. All batteries have finite life-spans, often referred to by manufacturers in terms such as “so many duty-cycles” (under certain specified procedures of use & recharging). Maintaining the battery fully charged throughout periods of non-use therefore avoids using up some of the battery’s “lives”. Some chargers sold as “battery conditioners” for medium term maintenance, which charge, then stop, then “kicks in” again only when a battery has discharged to a certain level, are therefore not recommended. Far better are more advanced chargers such as OptiMate (12V), AccuMate (selected 6V/12V), & AccuMate PRO (selectable 12V/24V), which by a combination of both voltage & current sensing during & following the main constant current charging stage, automatically “double-check” that the battery is truly fully charged at the conclusion of the main (constant current) charging stage & then only proceed into “float charge” to offer the battery whatever current it needs periodically, but continuously, thereby ensuring a permanently fully charged battery. The important advantages are firstly that these chargers do ensure the battery IS fully charged BEFORE passing to a (lower voltage limit) “float charge mode”, and that in this mode it is the battery which signals to the charger and draws from it just the amount of current needed to support the load of alarms, accessories or current “leaks” in the vehicle wiring.

Only by both current & voltage sensing can “truly smart” circuitry be sure the battery is fully charged before passing into the lower voltage-limited “float charge” stage. Sensed voltage alone may indicate a “full” battery in cases of abnormal resistance due to deep discharge. The OptiMate & AccuMate circuits which monitor both current & voltage, check that the battery does not “draw” significant current during trial initiation of the maintenance “float charge” stage, BEFORE fully engaging this stage, (& indicating “battery ready” – green LED). Both chargers thus revert automatically to constant current mode if the monitored parameters indicate that the charging mode has prematurely passed into maintenance mode. This ensures the battery is really ready for the maintenance stage even in cases of an irregularly rising voltage characteristic during the constant current stage.

Removal of filler caps of non-sealed batteries connected to an AccuMate or OptiMate is unnecessary.

Automatic charging current regulation according to monitored charger temperature (such as with the AccuMate) enhances charger service life while providing most effective charging. Charging voltage variation according to the battery’s casing temperature is the best way to ensure perfect long term maintenance for sealed batteries. This feature is offered as an option with TecMate’s AccuMate Pro, which comes as standard with an ambient temperature sensor which varies the charge voltage. The AccuMate PRO has a built-in fan which blows away any heat that might otherwise influence the sensor. Even better technically, an optional 2m long sensor allows monitoring of the actual battery casing which accordingly automatically varies charging voltage settings.