



# MAINTAINING *YOUR* BATTERY



BATTERY CARE TIPS

# BATTERY CHARGING THE BASICS



- 1 **Establish good maintenance practices.** The investment in Motive Power batteries can be considerable. To protect this investment, it is recommended to have regular inspections of voltage and specific gravity readings to avoid major repairs. Always use a face shield, goggles and rubber apron when working on the battery. Record and maintain written records of PM's (Planned Maintenance for batteries and chargers).
- 2 **Charger must be properly sized to match the Amp Hour capacity of the Battery.** Use only approved chargers that have correct DC amp output and finish rate. Always be sure the charger is OFF before disconnecting from the battery.
- 3 **Establish good connections.** Insure that all connector and contacts on the battery, including those on the charger and the truck are in good condition. A defective connection can cause sparking and will create impedance (hindering proper charging and proper voltage delivery to the forklifts electrical components).
- 4 **Add water ONLY after a COMPLETE CHARGE.** DO NOT ADD WATER to a PARTIALLY DISCHARGED BATTERY, and NEVER attempt to add acid (this should only be done by a trained professional under controlled conditions). Check the electrolyte level on a regular basis, intervals are determined by your facility's operations as multiple shift or high-utility operations may require more frequent watering. Do not overfill as this will dilute the electrolyte and cause overflow. For most batteries, fill each cell to 1/4" over the Moss Guard (this is the perforated shield visible when looking inside the cell thru the vent cap opening). Note that some batteries are designed to "Water Less" and they may require different watering intervals. A battery operated with a low electrolyte level will have diminished run time and can cause damage to the forklift's electrical components. General Rule regarding Tap Water is that if the water in your facility is drinkable, it is suitable for the battery. If in doubt you could purchase a de-ionizer or use distilled water, consult your local Motive Power Supplier or forklift service provider.
- 5 **Keep the battery clean and dry** as an abundance of accumulated dirt and debris can cause a battery to discharge even when not in use. Most industrial batteries should be washed at least once a year depending on the amount of dirt, or waste generated by your facility and this service should be performed by trained personnel who can dispose of the residual hazardous waste. For extreme conditions semi-annual or quarterly washing may be required.
- 6 **Avoid shorts.** Hydrogen gasses are emitted from the battery during charge cycles. These gases are explosive. Avoid sparks or flames near the battery charging area. Do not rest tools on the battery. If an external short occurs, check the voltage of the shorted cells before putting the battery back on charge. Call a qualified service representative if required.
- 7 **Do not remove the battery's vent caps while charging.** Keep the vents caps closed only remove them or open the "flip top" to inspect water level or to add water. Be certain to check the water level in all cells as some may consume more water than others.
- 8 **Keep the battery cool and ventilated.** Normal charging will increase the battery temperature, insure that the charging area is well ventilated, and that the battery is not near a heat source. If the battery is charged in the lift truck, ventilate the lift truck as much as possible. Excessive temperatures will reduce the battery life. If this is a cold storage application, certain charging procedures should be followed that could affect the above (consult your service provider for cold storage recommendations).
- 9 **Avoid overcharging the battery.** Overcharging will not increase battery capacity, it will decrease battery life due to high temperature effect (thermal runaway). If overheating does occur, have the battery and the charger inspected by a trained professional immediately. A warm battery is normal but if the battery is too hot to the touch it needs to be checked out to avoid permanent damage.
- 10 **Repair damages to the battery or charger immediately.** If operated continuously while in need of repair, this could result in permanent and irreparable damage leading to costly battery replacement. Remember that one of the benefits of using an electric lift is that the battery is nearly 100% recyclable, this is not only a huge environmental plus, but the battery will have a scrap value. Consult with your local service provider as the scrap value can fluctuate.

Viking Power hopes that you will find this general information helpful for watering procedures on most flooded lead acid batteries, however due to the many different facility applications and ever evolving battery technologies we strongly recommend that you contact your battery manufacturer or your local Motive Power Supplier in your area for a complete and comprehensive evaluation of your battery fleet and appropriate watering intervals that suit your application. Always use PPE (Personal Protective Equipment) when working on or watering industrial forklift batteries

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