Battery Handling Safety

Forklift batteries are very heavy and potentially hazardous so MTC offers a variety of specialized equipment to assist businesses with safe battery changing and handling. Our equipment is versatile and expandable, so it adapts to customer needs ranging from small to large facilities supporting single-shifts or around-the-clock operations. MTC offers forklift battery changing products including man-aboard power changers, portable side removal equipment, and overhead removal systems.

FORKLIFT BATTERY INSPECTIONS

It is important to perform forklift battery inspections before a forklift is used and before and after the battery is charged. Persons performing battery inspections should follow all of the requirements and recommendations of the forklift's and battery's original equipment manufacturer (OEM). Consult with the appropriate manufacturer for instructions if you prefer to use following best practices and determine they do not match their guidelines.

WARNING: Persons are required to wear personal protective equipment (PPE) whenever workplace hazards exist including those related to forklifts and their batteries. Consult OSHA and other applicable regulations to determine and conform to PPE requirements before performing forklift battery inspections.

Best practices for forklift battery inspection include but are not limited to the following:

Battery Assembly

The entire forklift battery assembly—including the battery tray or tank, packing material, battery cells, intercell connectors and bolts, battery harness and connector, filling system, and electrolyte monitor—should be dry and clean. The presence of moisture or wetness indicates electrolyte spillage, and this creates a potential hazardous materials incident due to the presence of sulfuric acid. Dirt, especially if mixed with electrolyte, creates a potential safety hazard due to voltage leaking or electric arching.

Cables, Harnesses, and Connectors

Check for signs of physical damage. Connectors can become damaged cables can sustain insulation abrasions and cuts during operation and handling. Harnesses are susceptible to many forms of damage during charging. Swollen cables and intercell connectors indicate hidden acid damage and should be replaced. Batteries found to have cables or connectors showing signs of arcing, melting, or high-heat should not be used until they have been serviced by a technician. Any cables, harnesses, and connectors replaced must meet the requirements of the original battery manufacturer.

Vent Caps and Filling Systems

Confirm each battery cell is fitted with a proper vent cap or battery filling system that meets all requirements of the original battery manufacturer. When a battery filling system is present, confirm internal and external ports, valves, and tubing are undamaged and operating as designed.

Electrolyte

Battery electrolyte levels and specific gravities should be within their correct ranges. Otherwise, the battery requires maintenance by a qualified technician. When a battery electrolyte monitor is present, confirm it remains securely attached and all cables and devices are undamaged and operating as designed.

FORKLIFT BATTERY CHARGING SAFETY

The charging of forklift batteries should only be performed by trained staff to minimize avoidable

personal injury risk and damage to forklift, battery, and charging equipment. It is important for the person charging a battery to begin with an appropriate inspection of the battery and charger, following all of the requirements and recommendations of the battery's and charger's original equipment manufacturer (OEM).

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Best practices for forklift battery charging safety include but are not limited to the following:

Charging Area

In many countries including the U.S, regulations require forklift battery charging to occur in designated areas within a facility. In general, these regulations ensure these areas are equipped to appropriately support the process and ensure the safety of personnel. Companies located in the U.S. should consult OSHA and other applicable federal, state, and local entities for regulatory compliance information.

Battery Charging

For safety reasons, and due to the differences among types of forklifts, batteries, and chargers, it is important to follow all of the instructions of their manufacturer's when charging batteries. General best practices include working in a designated charging area only, properly positioning the forklift and applying brakes (if applicable), using personnel protection equipment, and performing a battery inspection before charging.

Battery Changing

Many businesses choose to change discharged batteries rather than charge them in the forklift to maximize productivity. It is important to use the appropriate equipment when changing batteries to protect forklifts, batteries, and staff from harm. MTC offers a variety of equipment and accessories to facilitate the process of changing and handling forklift batteries, including man-aboard power changer equipment, portable side battery removal equipment, and overhead battery removal equipment.

FORKLIFT BATTERY PERIODIC MAINTENANCE

Maintenance of lead-acid batteries involves exposure to dangerous levels of electricity, potential exposure to hazardous materials, and the movement of heavy items and equipment so it should be performed by trained technicians only. The processes involved during maintenance may vary for different forklifts, battery types and manufacturers, and servicing equipment. Therefore, a trained technician is the best person to determine the correct maintenance requirements for each situation.

WARNING: Persons are required to wear personal protective equipment (PPE) whenever workplace hazards exist including those related to forklifts and their batteries. Consult OSHA and other applicable regulations to determine and conform to PPE

requirements before performing forklift battery inspections.

Best practices for forklift battery periodic maintenance include but are not limited to the following:

Battery Washing

Maintaining clean and dry batteries is important for safety reasons and to ensure batteries can be used through their entire service life. MTC offers a variety of equipment to facilitate the battery cleaning, including wash racks, wash cabinets, and recirculating water systems.

Battery Equalizing

Most forklift lead-acid batteries must regularly endure an equalizing process to rebalance electrolyte concentrations and restore electrical plates to their normal operating conditions. Otherwise, the ability of batteries to retain and release charge will diminish until it reaches a point when the battery is no longer usable. Follow the recommendations of the battery and equalization equipment manufacturers for best results.

Battery Maintenance Log

Examples of data to record in a log include: date and time of service, name of service technician, forklift battery controller status, battery manufacturer and model, starting and ending specific gravity of each cell, starting and ending voltage of each cell, starting and ending voltage of each battery. If boost charge is used, then record the following data: boost current (amps), duration of boost charge (hours), end of charge specific gravities, end of charge voltages, end of charge temperatures.