
FORK LIFT BATTERY BEST PRACTICES THE ESSENTIALS





BASICS OF A FORKLIFT BATTERY

HANDLING, COST & CHARGING

If a forklift keeps your business moving, your forklift needs a battery that will keep it moving. A forklift battery is not only the power source of a forklift but it also provides counterweight to the vehicle which aids in its lifting capacity, as the batteries themselves can weigh from 800 to 6,000 pounds.

Without the battery, business stops. But keeping your batteries powered isn't just about keeping them charged. Because of the weight and construction of these devices, there are certain considerations that should be made when handling, purchasing, and charging them.

HANDLING

Because of the weight, no one person should attempt to lift a forklift battery on their own. Using specialized equipment such as a Walkie Pallet Jack is recommended and no matter what method you choose, steel-toed boots should always be worn.

Because of the materials present in all batteries, proper clothing should be worn when handling or moving them. In the case of forklift batteries, chemical-resistant protective gear should be worn while moving batteries along with protective eyewear. In case of any contact, an eye and hand washing station should be kept nearby.

When changing the battery, the use of a forklift battery changer is recommended. These are devices that assist in safe removal and installation of forklift batteries. The specifics of these devices can vary: some need to be driven up to the forklift and battery and some are permanent installations and the forklift will need to be driven to the changer.

BASICS OF A FORKLIFT BATTERY CONTINUED...

PURCHASING

When purchasing a new a forklift battery there are some things you should consider. Keep in mind that these batteries are a significant investment so you want to make sure you are doing your homework and getting a battery that will meet your needs.

BEFORE PURCHASING, ASK YOURSELF:

- What is the vehicle voltage?
- What is the compartment size?
- Will you need to purchase a cover?

Chargers for your battery are a separate purchase in most situations. The price will vary depending on the specifics of the charger. Do you need a portable charger that plugs into a standard outlet or one that is wired into a building's electrical system? Think long term in evaluating your needs and use to determine what is best for your application.

Once you've made your purchase, you want to make sure your investment lasts by taking care of it and providing proper maintenance.



5 STEPS TO FORKLIFT BATTERY MAINTENANCE

To keep a forklift running properly - and to extend its life - it is necessary to keep its battery working efficiently. A forklift battery should be able to last for a number of years if it is properly cared for.

But what is the best way to maintain a forklift battery and ensure that it lasts as long as possible? Just follow these easy steps.

1. CHARGE THE BATTERY CORRECTLY

It can be tempting to charge a battery whenever it is convenient, but the fact is that in order to properly maintain a forklift battery, it should only be charged at certain times and to certain degrees.

Charge a forklift's battery only when it dips below 30% charge and be sure to charge it until it is full and then stop charging it. Over or undercharging this type of battery can significantly decrease its lifespan. Never interrupt a charge cycle.

5 STEPS TO FORKLIFT BATTERY MAINTENANCE CONTINUED...

2. EQUALIZE BATTERIES REGULARLY

Flooded or wet cell batteries should be equalized on a regular basis. This process reverses the chemical process of stratification, when the battery acid becomes more concentrated at the bottom of the battery. When the acid and water become stratified, the battery is no longer able to hold a charge as well.

Equalizing rebalances the electrolyte concentration and also helps to remove sulfate crystals from the battery plates. Equalizing can only take place with a battery charger that has an equalizing setting. Many batteries need equalization approximately every five to ten charging cycles, but be sure to check the maintenance specifications for a battery before initiating the process.

3. CHECK FLUID LEVELS

Forklift batteries need to have the right amount of water to work at optimum capacity. Approximately every five charge cycles, be sure to check the forklift battery fluid levels by opening up the battery.

Check two to three cells and ensure that there is enough fluid to cover the plastic battery element. If unsure, check all cells. If there is not enough fluid upon inspection, move on to the next step and add water.

5 STEPS TO FORKLIFT BATTERY MAINTENANCE CONTINUED...

4. MAINTAIN WATER LEVELS

If the levels are not appropriate, top off the fluid in the battery. This will be necessary approximately every 10 charges if it is brand new by adding enough water to cover the battery's plastic element protector. Do not overfill the battery. Extra space is needed for the expansion that happens when the battery is in use.

Note that maintenance free batteries do not need to be topped off. Only top off a battery after the battery is fully charged. It is also important to use the right water, which measure between 5 and 7 on the pH scale and is within recommended limits for impurities. Impure water can lead to battery damage.

5. KEEP BATTERIES AT SAFE TEMPERATURE

Forklifts can be used in extreme environments, so it is essential to consider the ambient temperature for the battery when in use. Keeping any battery at a safe temperature, where its operating temperature does not exceed 45°C (113°F), will help to prolong its life. If this is not possible, be sure there is plenty of air circulating in and around the battery compartment for optimal cooling.

Even a Crown forklift battery, which are extremely durable and can last for years, need to be subject to proper maintenance in order to extend their lives. Luckily, this maintenance is easy to incorporate into any forklift maintenance routine.



BROKEN FORKLIFT BATTERIES: REPLACE OR REPAIR?

You may have been there before, an industrial battery for a forklift suffers damage of some kind and now needs either replacement or repair. But before simply recycling the unit and buying new, you might want to make a few simple checks to get a gauge of the severity of the damage to see if a minor repair can get the unit back up and running.

Here's a quick checklist of battery maintenance items to help make this determination

1. CHECK CABLES AND CONNECTORS

Investigate the appearance of the top area of the battery as well as all the cables and connections. If possible, remove any accumulation of corrosion. (Conduct this check only while disconnected from the charging unit and the forklift.) You can test connections by gently pulling on them and flexing the cable back and forth.

If you have a loose connection, it may be possible to repair the unit quickly by replacing a contact or connector. However, if the wires appear stiff or swollen at the battery connection points, this is a sign that replacement or repair may be necessary. Fusing or lead burning the cable terminations can be a potentially hazardous project requiring professional assistance.

BROKEN FORKLIFT BATTERIES: CONTINUED...

2. ANALYZE VOLTAGE

Ordinary DC voltmeters can provide voltage readings, but only the crudest of cell indications. When measuring an entire row of cells, a difference of a volt or more may identify an issue with a cell within that row. To take things a step further, get a voltage reading under the load on a fully charged battery.

For lift trucks, the mast must be tilted back against a stop to provide a short, but high-amperage load onto the battery. After doing so, observe the voltage results of each cell or group of cells. If any cells drop under 1.70 volts, they are suspect for problems.

3. REVIEW SPECIFIC GRAVITY LEVELS

Another measurement of importance when determining the state of charge and the electrochemical health of the battery is the specific gravity level. A hydrometer provides these readings and helps identify cells that are falling out of line with the rest of the battery.

Normal ranges are between 1.150 discharged and 1.290 when fully charged. If the meter shows a lower specific gravity than the others (usually around 25 points of difference) that showcases a failing unit that may need replaced.

4. SMELL IT

If you smell a strong hydrogen sulfide odor (resembles a rotten egg), that means the battery experienced damage beyond economical repair. This smell occurs if the unit has suffered some impact to the cell containers inside the unit, requiring professional assistance to fix it.

This checklist provides a simple review to gauge the overview of the health of the battery cell. If these checks aren't successful in determining the issue, the next step is conducting a complete capacity discharge test with a professional battery technician.



HOW TO BUY

Crown Battery partners with a world-class network of full dealers, distributors and business partners to deliver high-performance batteries, chargers, value-added accessories with comprehensive local support.

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