

## Electric Forklift

Used Electric Forklift Idaho - Electric forklift models do not rely on combustion engines but use an electric motor instead. The electricity is sourced from either internal industrial batteries or fuel cell. Internal batteries often provide the electrical source. They are capable of being recharged by connecting the battery to a source that is electrically compatible. Rechargeable battery options include lithium-ion or lead-acid. Electrical production with a fuel cell is close to a battery source but requires refueling to be recharged instead of connecting to an electrical source. Internal combustion engine forklift models and electrical forklifts can complete the same types of jobs. That is, they usually use two power-operated horizontal forks to load, transport for short distances and unload materials. The source of power is the main difference between an internal combustion engine and an electrical forklift model. Typically, electric forklift models are used indoors in warehouses and similar facilities that cannot rely on internal combustion engines due to interior air quality.

**Electric Forklift Classifications** The electric forklift truck can fall into one or more forklift truck classifications. They are:

1. Class 1: Electric Motor Rider Trucks These forklifts can have pneumatic or cushion tires. Pneumatic tires are used on forklifts primarily operated outdoors in dry areas and on uneven surfaces whereas cushion tires are better on forklifts used primarily indoors, on smooth surfaces.
2. Class 2: Electric Motor Narrow Aisle Trucks The Class 2 Electric Motor Narrow Aisle Trucks are another classification. These units function within very narrow aisle locations with limited space. This design enables maximum storage space. Class 2 models feature a modified design to limit the amount of space the forklift takes up.
3. Class 3: Electric Motor Hand or Hand-Rider Trucks Another classification is the Class 3 Electric Motor Hand or Hand-Rider Trucks. These machines are hand-controlled. The operator is positioned in front of the machine and relies on a steering tiller instead of riding on the forklift.
4. Class 6: Electric and Internal Combustion Engine Tractors The Class 6 Internal Combustion Engine and Electric Tractors are another lineup. This category includes forklifts that can be utilized for many jobs. The electric units may be used in exterior applications in dry situations and also function well indoors.

A list of forklift trucks that are typically powered by electricity are:

**Sources of Electricity for Electric Forklifts** Mostly, electric forklift models are used for interior applications on even, flat floors. Battery operated forklifts stop the emission of dangerous gases and are preferred for interior locations including food-processing facilities and healthcare. Fuel cell powered forklifts also produce no local emissions and are often used in refrigerated warehouses because, unlike batteries, their performance is not reduced by the lower temperatures.

**Lead-acid battery** The main type of rechargeable battery is lead-acid batteries. Their capacity to supply high current surges allows for a significant ratio of power-to-weight. Electric forklift trucks rely on lead-acid batteries that are affordable and durable. It's important to know that lead-acid batteries can possibly freeze during frigid temperatures and this type of battery requires on-going maintenance.

**Lithium-ion Battery** A Li-ion or lithium-ion battery is a different kind of rechargeable battery commonly used in electric forklift models. The main issue with these batteries is they contain a flammable electrolyte and pose a safety hazard if damaged or charged improperly which may lead to fires or explosions. Lithium-ion batteries initially cost more than lead-acid varieties, but they provide better efficiency and require no maintenance compared to lead-acid models. Another benefit is that the lithium-ion batteries can operate with a wider temperature range and better energy densities compared to lead-acid varieties.

**Fuel Cell Forklifts** that rely on fuel-cell power feature some benefits of both internal combustion and battery-operated forklift trucks. Similar to battery-powered forklifts, there are no local emissions delivered from fuel cell models. One of the fuel cell power disadvantages is that they are approximately half as efficient as li-ion batteries. Conversely, fuel cell power provides more energy density, translating to longer running time for electric forklift trucks. Fuel cell forklift trucks operate better in cooler temperatures compared to li-ion battery models. For this reason, fuel cell powered forklifts are often preferred for use in colder temperatures, such as refrigerated warehouses. Different from batteries, fuel cells

rely on refueling with a fuel source to create an electrical current. However, they can be refueled in about three minutes, whereas batteries take much longer to recharge. Many larger companies that have multiple forklifts in their fleet running numerous shifts benefit from using fuel cell models that can keep operating without long periods of time spent charging.

### Pros and Cons of Electrically Powered Forklifts

#### Advantages of Electric Forklifts

Electric forklift trucks can often be a better option than internal combustion engine forklifts where a lift capacity does not exceed 12,000 pounds. Numerous factors are considered to determine if the electric forklift truck is the most accurate choice. It is essential to discover the pros and cons of one forklift type to another prior to choosing a model. Some of the advantages of an electrically powered forklift over an internal combustion engine are listed below.

1. Operating costs can be much lower for battery powered electrical forklifts because of the ongoing and often increasing cost of fuel.
2. The cost of electricity is more predictable and more stable compared to combustible fuel; making electric forklifts a better choice when taking budgets and operating expenses into account.
3. Electric forklift trucks rely on recharging stations which eliminates the requirement of fuel transportation and storage for both the equipment and the job site.
4. Battery-powered electric forklift models and fuel cell electric forklifts generate no noise pollution or dangerous emissions. Both internal combustion engine forklifts and electric models have a back-up alarm that is noisy but necessary.
5. The automatic braking systems on electrical forklifts helps to reduce wear and operator fatigue.
6. Electric forklifts boast greater intervals between maintenance compared to internal combustion engine models. This is mainly because there are less moving parts required by a fuel cell or battery-powered forklift model.

#### Disadvantages of Electric Forklifts

For many of the reasons listed above, forklifts powered by electrical means have been more popular than power by internal combustion engines in recent years. Numerous circumstances however still prefer internal combustion forklifts. Some of the disadvantages the electrical forklift has when compared to internal combustion engine forklifts are set out below.

1. Since electric forklifts have a lift capacity of approximately 12,000 lbs. many jobs still choose to use an internal combustion model where there are heavy lifting requirements, even when they are only occasionally needed.
2. Facilities require recharging stations to accommodate electric forklift trucks. If there are none currently installed, this will cost significantly more.
3. Batteries also require that attention be given to the timing and length of a charge. This is because the life of batteries can be reduced if charged too frequently or not enough.
4. Electric forklift trucks are also initially more expensive than internal combustion engine forklifts.
5. Older facilities may require electrical upgrades for increased voltage systems to power battery forklifts.
6. Electric forklift trucks may need to use machinery to lift and lower the batteries into the unit during replacement due to their heavy nature.

Overall, electric forklift trucks provide numerous advantages compared to internal combustion engines however, they may not work in a variety of outdoor applications with their weight and weather restrictions.