

Electric Forklift

Used Electric Forklift Bakersfield - Electric forklift models do not rely on combustion engines but use an electric motor instead. The electricity source is derived from either a fuel cell or internal industrial batteries. Internal batteries often provide the electrical source. They are capable of being recharged by connecting the battery to a source that is electrically compatible. The rechargeable batteries are lithium-ion or lead-acid batteries. Electrical production by means of a fuel cell is similar to a battery source but cannot be recharged by connecting to an electrical source, instead requiring refueling. Electrical forklifts can do the same type of work as internal combustion engine forklifts. Both models utilize two power horizontal forks to load, transport and unload items. The main difference between these different forklift models is their source of power. Electrically powered forklifts are typically used in warehouses and other indoor facilities where an internal combustion engine would cause poor air quality for workers.

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 The Class 1 Electric Motor Rider Trucks are one of the classifications. These models have cushion or pneumatic tires. Cushion tires are generally used on smooth indoor surfaces and pneumatic tires are mostly used for exterior applications.
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 These forklifts are hand-controlled, which means they do not ride on the forklift but rather is positioned in front of the forklift. The operator controls the forklift using a steering tiller.
4. Class 6: Electric and Internal Combustion Engine Tractors This classification includes forklifts that allow for a broad application use. In the electric forklift version, they are usually used for indoor use or dry outdoor use.

The types of forklift trucks that are usually electrically powered include: electric counterbalanced trucks, pallet jacks, scissor lifts, rider low lift trucks, order pickers, cushion tire forklifts, rider low stacker, reach truck, walkie low lift trucks, towing tractor trucks and walkie low stackers.

Sources of Electricity for Electric Forklifts

Electric forklifts are predominantly used indoors on flat, even surfaces. Battery-powered forklifts are better suited for interior jobs as they do not emit poisonous gases; making them ideal for food-processing and healthcare applications. 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 most popular type of rechargeable battery is lead-acid models. Their capacity to supply high current surges allows for a significant ratio of power-to-weight. This, coupled with its affordability, make lead-acid batteries a popular option for use in electric forklift trucks. Lead-acid batteries require maintenance and may freeze during colder temperatures. These factors can shorten their lifespan.

Lithium-ion Battery

A lithium-ion battery or li-ion battery is another type of rechargeable battery used in electric forklifts. 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 are also more expensive than lead-acid batteries, at least initially. However, they provide more efficiency than lead-acid batteries and require no maintenance. The Li-ion batteries can function with a broader temperature range compared to lead-acid batteries.

Fuel Cell

Fuel-cell powered forklifts have some of the benefits of both battery operated forklifts and internal combustion engine forklifts. Similar to battery-powered forklifts, there are no local emissions delivered from fuel cell models. Fuel cell power efficiency is only forty to fifty percent which is roughly half as much as lithium-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. Refrigerated warehouses rely on fuel cell models due to their ability to function in cooler locations. Fuel cells need a fuel

source in order to create an electrical current and need refueling. However, they can be refueled in about three minutes, whereas batteries take much longer to recharge. It is beneficial for businesses that rely on many forklifts that operate numerous shifts to use fuel cell models since they don't have the same downtime for charging batteries.

Pros and Cons of Electrically Powered Forklifts

Advantages of Electric Forklifts

When a lift capacity doesn't have to be greater than 12,000 lbs. electric forklift trucks are often a better option compared to combustion engine forklift trucks. Numerous factors are considered to determine if the electric forklift truck is the most accurate choice. Taking a look at the pros and cons of electric forklifts versus internal combustion engine forklifts is necessary. 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. There are recharging stations for battery-powered electric forklift. This system eliminates the necessity for fuel storage and transportation for both the machine and the worksite.
4. Battery-powered electric forklift models and fuel cell electric forklifts generate no noise pollution or dangerous emissions. The back-up alarm is the main exception; however, this is a normal characteristic of internal combustion forklifts as well.
5. Operator equipment and fatigue is reduced in electric forklift models thanks to the automatic braking technology.
6. There are longer intervals between maintenance requirements for electric forklifts compared to internal combustion models due to less moving parts used by a battery-powered or a fuel cell unit.

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. However, there are still several applications that make electrical forklifts a less practical option. Key disadvantages of the electric forklifts in comparison to internal combustion engine are discussed 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. Battery powered electrical forklifts must be recharged and therefore require sufficient recharging stations to be installed at facilities where none are already present. This could amount to a significantly increased initial expense to the buyer.
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. Internal combustion engine forklifts are also less expensive compared to electric forklift models.
5. Certain older buildings may need to undergo electrical upgrades to accommodate increased voltage systems.
6. Battery powered forklifts sometimes require machinery to lift or lower the heavy batteries when replacement of batteries is necessary.

Electric forklift trucks have a wide range of benefits. They may not be adequate in certain working environments due to their weather and weight restrictions so check your job list accordingly.