

Electric Forklift

Used Electric Forklift Mexico - An electric forklift is a forklift truck that uses an electric motor to generate power as opposed to an internal combustion model. The electricity source is derived from either a fuel cell or internal industrial batteries. If internal batteries provide the electrical source, the batteries can be recharged by joining the battery to something electrically compatible. These rechargeable batteries are lead-acid or lithium-ion battery. 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. Electrical forklifts perform the same types of jobs as internal combustion engine forklifts. They both rely on two horizontal forks that are power supplied to transport and unload and load items for short distances. The source of power is the main difference between an internal combustion engine and an electrical forklift model. Most electric forklift models are used for internal applications including warehouses and similar locations that cannot function with comprised 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 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 These types of forklifts operate in very narrow aisles, where space is limited. This allows for maximum use of storage space. Class 2 forklifts have a modified design to minimize the amount of space taken up by the forklift.
3. Class 3: Electric Motor Hand or Hand-Rider Trucks The Class 3 Electric Hand-Rider Trucks or Electric Motor Hand models are hand controlled. This means the operator uses a steering tiller and is positioned in front of the machine as opposed to 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

Electric forklift models are mainly used on even, flat surfaces indoors. Battery powered forklifts prevent the emission of harmful gases and are suggested for indoor facilities, such as healthcare and food-processing facilities. 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. The lead-acid battery's ability to supply high surge currents means that it has a relatively large power-to-weight ratio. 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 drawback of lithium-ion batteries is that they can be a safety hazard since they contain a flammable electrolyte that, if incorrectly charged or damaged can cause explosions and fires. 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 Forklifts that rely on fuel-cell power feature some benefits of both internal combustion and battery-operated forklift trucks. Like forklifts powered by battery, fuel cell power produces no local emissions. Fuel cell power efficiency is only forty to fifty percent which is roughly half as much as lithium-ion batteries. Fuel cell power offers better energy density and provides electric forklift trucks to run longer. 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. Different from batteries, fuel cells rely on refueling with a fuel source to create an electrical current. Fuel cells only require approximately 3 minutes to refuel instead of the

much longer recharging time for rechargeable batteries. Because of this, large operations which run several shifts and larger fleets of forklifts tend to benefit from the ability to keep the forklift operating without having to account for lengthy charging times.

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. Of course, there are many considerations to decide if the electric forklift model is the best choice for a particular application. Taking a look at the pros and cons of electric forklifts versus internal combustion engine forklifts is necessary. Specific advantages of electric powered forklift models vs. internal combustion engine models are listed below.

1. The operating costs of battery-powered electric forklifts are significantly lower compared to internal combustion models since fuel costs continue to increase.
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. Both fuel cell and battery-powered electric forklifts produce zero noise pollution or emissions. Both internal combustion engine forklifts and electric models have a back-up alarm that is noisy but necessary.
5. Operator fatigue and equipment wear and tear are reduced in electric forklift models with the automatic braking system.
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. There are numerous working conditions however that make electrical models less practical. Certain electric forklift models disadvantages as compared to combustion models are listed below.

1. Electric forklifts feature a lifting capacity of around 12k lbs. or less, limiting them from heavier jobs. This translates to using an internal combustion forklift on jobs where there is limited heavy lifting required.
2. Facilities require recharging stations to accommodate electric forklift trucks. If there are none currently installed, this will cost significantly more.
3. Battery life can be affected by improper charging. They need to be regularly monitored to ensure they are not being charged too frequently or infrequently.
4. Electric forklift trucks cost more than internal combustion engine units.
5. In some older facilities, the electrical system may need to be upgraded to accommodate an increased voltage requirement of battery powered 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.