

Electric Forklift

Used Electric Forklift Victorville - 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. Rechargeable battery options include lithium-ion or lead-acid. Producing electricity with a fuel cell is similar to using a battery source; however, the fuel cell needs refueling and will not be recharged from connecting to anything electrical. 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 source of power is the main difference between an internal combustion engine and an electrical forklift model. 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** 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** 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.

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

Sources of Electricity for Electric Forklifts

Battery Mostly, electric forklift models are used for interior applications on even, flat floors. Battery powered forklifts prevent the emission of harmful gases and are suggested for indoor facilities, such as healthcare and food-processing facilities. Refrigerated jobs prefer to use fuel cell forklifts. They make no emissions and are capable of working in colder locations without a power reduction, unlike battery-operated models.

Lead-acid battery The main type of rechargeable battery is lead-acid batteries. The lead-acid battery's ability to supply high surge currents means that it has a relatively large power-to-weight ratio. 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 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. Additionally, Li-ion batteries cost more compared to lead-acid batteries initially; although they need zero maintenance and provide better efficiency compared to lead-acid batteries. 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. Fuel cell-powered forklifts provide no emissions like battery-powered forklift trucks. One of the fuel cell power disadvantages is that they are approximately half as efficient as li-ion batteries. Fuel cell power offers better energy density and provides electric forklift trucks to run longer. Fuel cell powered forklifts also have the advantage of performing better in lower temperatures as lithium-ion batteries. The fuel cell models are preferred for colder applications such as warehouses that are refrigerated. Fuel cells are different from batteries in that they require a source of fuel to produce electrical current and so require refueling. Fuel cells only require approximately 3 minutes to refuel instead of the much longer recharging time for rechargeable

batteries. 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 Electric forklift trucks can often be a better option than internal combustion engine forklifts where a lift capacity does not exceed 12,000 pounds. There are many factors to consider in each specific application in order to determine whether an electric forklift is the best option. It is essential to discover the pros and cons of one forklift type to another prior to choosing a model. Specific advantages of electric powered forklift models vs. internal combustion engine models are listed below.

1. Battery-powered electric forklift models have lower operating costs due to the increasing cost of fuel required constantly by internal combustion models.
2. Electricity costs are more predictable than fluctuating fuel costs. This makes electric forklifts are more reliable choice in terms of operating expenses and budgets.
3. Battery powered electric forklifts also allow for recharging at charging stations. This eliminates the necessity for fuel transportation and fuel storage, both at the worksite and onboard the forklift itself.
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. 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. Numerous circumstances however still prefer internal combustion forklifts. 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. Electric forklift trucks cost more than internal combustion engine units.
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.

All in all, electric forklifts have many advantages over internal combustion engine forklifts but still are not appropriate in many outdoor applications, mostly due to weather and weight restrictions.