

Fuel Cell Forklift

Already commercially viable, fuel cell-powered forklifts are operating in large warehouses, distribution centers and manufacturing plants for large corporations like Ace Hardware, Wal-Mart and Bridgestone Firestone Tire Company. One of the first applications to enter the market, motive power fuel cell units are delivering economic, operational and environmental value to customers through improved productivity, the potential for additional commercial space, superior safety performance, reduced operational costs, and elimination of the handling and storage of toxic materials.

Crown Equipment Corporation – the world’s largest electric forklift manufacturer – is now developing fuel cell- powered forklifts in collaboration with Plug Power, Ballard, GrafTech and other fuel cell power pack providers

The Partnership: Ohio makes it happen

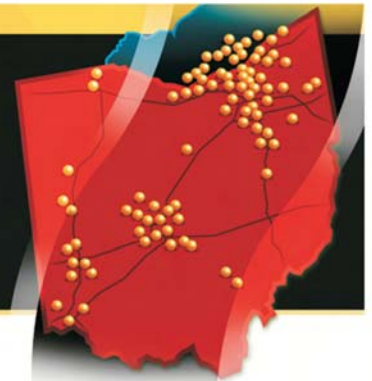
Based in New Bremen, Crown is carving out a niche as a leader in fuel cell vehicles for material handling environments. Plug Power manufactures the fuel cell system as a drop-in replacement for lead-acid batteries on Crown lift trucks. Parma-based GrafTech supplies its GRAFCELL™ flow field plate material, which helps increase the runtime and decrease the size of the fuel cell as graphite is light, corrosion resistant and electrically conductive.

What makes it better?

Clean and efficient, fuel cells provide many benefits over lead-acid batteries and internal combustion motors.

Fuel cell-powered forklifts run longer with significantly less downtime than their lead-acid battery counterparts. It takes 20 to 30 minutes to replace a lead-acid battery, while a fuel cell requires just a couple of minutes to refuel. Batteries must also recharge for eight hours and then cool for an additional eight hours before being placed back in the forklift. Productivity is increased and forklift operators, who are paid by the piece, benefit from the reduced downtime. Additionally, by eliminating storage of two to three batteries per truck, fuel cell forklifts preserve precious warehouse space. Employee injuries are reduced when battery swapping is eliminated. Lead-acid batteries also require special handling and storage for the toxic materials.

By eliminating emissions and improving air quality, fuel cells also have significant advantages over internal combustion engine forklifts. Hydrogen-powered fuel cells produce only heat and water as emissions, making the warehouse safer and healthier for all employees.



The applications

Fuel cell-powered forklifts are already in operation at a distribution center run by a major U.S. retailer in Ohio, as well as at distribution centers, warehouses and manufacturing plants in other states. Because they don't require recharging and don't produce harmful emissions, fuel cell-powered forklifts are ideal for high-throughput, indoor applications.

Input fuel

Crown's fuel cell-powered forklifts are fueled with pure hydrogen, which is supplied through an onsite fueling station. Refueling a fuel cell forklift is similar to refueling a gas- or diesel-powered model, and it takes only a couple of minutes before the driver is back on the floor.

The Fuel Cell Corridor: Where Clean Energy Goes to Work