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Hydrogen Fuel Cells

Fuel cells can provide a good alternative solution to wet cell batteries. They currently operate in some of the largest and most demanding material handling centers in North America and Europe and are a viable power solution. Fuel cells fit seamlessly into existing electric forklifts, pallet jacks and other material handling truck fleets. Fuel cells allow businesses to streamline operations while maximizing fleet uptime and reducing greenhouse gas emissions within their facilities. Fuel cells may not be a fit for everyone however; careful research can easily determine when their use is viable.

Here are a few considerations:

- **Increased Productivity**
Battery-powered lift trucks lose approximately 14% of their speed over the last half of the battery charge. Fuel cells maintain constant power at all times, keeping the vehicle running at full speed throughout the entire shift.
- **Lower Operational Costs**
The fuel cell solution eliminates the need to change, charge and manage batteries. The units run longer than lead-acid batteries and can be fueled in as little as two minutes, substantially reducing vehicle and personnel downtime. Labor normally used to charge batteries can be tasked with other important business objectives. Fueling the fuel cell is as simple as fueling a car.

- **Zero Emissions**
Safe. Clean. Efficient. The fuel cell solution produces no harmful emissions and eliminates the costs associated with handling and storing toxic materials.
- **More Commercial Space**
Compact fueling stations replace large battery charging rooms, freeing up valuable warehouse space for other purposes. Battery rooms are no longer needed. Approximately 7% of the distribution center is recovered to set up inventory and revenue-generating operations.
- **Transparent Transition**
Fuel cell units fit seamlessly into the space occupied by batteries on all lift trucks, making them a simple and cost-effective solution for customers to adopt.

Other Considerations would include:

- **Hydrogen Supply**

A stable supply of hydrogen needs to be available to run forklifts. If hydrogen is sourced from an external supplier, operations can be adversely affected when a delivery isn't delivered resulting in extended forklift downtime.

- **New Technology Cost and Availability**

Due to hydrogen fuel cells being a relatively new technology the availability of equipment may not be widespread with limited manufacturers and suppliers. This lack of supply may also make the technology costs prohibitive to small operators who do not have the budget to cover the costs.

- **Fleet Size and Operational Requirements**

Fuel cells can cost up to five or six times more than a standard wet cell battery depending on the type of lift and size requirements. Operations that require forklift fleets of less than thirty lifts and operate less than three shifts per day may find it cost prohibitive to use hydrogen fuel cells. A case study may be required to show a proper ROI. The initial cost to set up hydrogen storage, piping infrastructure, and fuelling stations should be considered in a cost justification.

Hydrogen fuel cells provide a clean, zero-emission power solution that boosts productivity and reduces greenhouse gases. Depending on fleet sizes and potential high level production requirements, a fuel cell solution may be a good fit, especially if coupled with limited warehouse space where having large rooms for charging batteries is difficult to concede. For some, the newness of fuel cell technology, the availability of hydrogen and the cost requirements for smaller operations looking for a quick return on

investment can be a deterrent. Although an ROI is possible, it might be found easier in labor versus other items such as capital costs, fuel savings, and in environmental items. If there is any interest in determining if fuel cells are a fit for your company, please contact us to help.



Jamie Schreiner, Sales Territory Manager

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Composite Cylinder LP Tanks

Whether you own a grill at your home or a forklift, one of the common complaints is not having a good idea of the level of propane left in your tank. CMH Services is proud to now offer translucent, composite cylinder propane tanks that help to solve this problem.



Because the tanks are translucent, you can always see the level of gas remaining. This helps employees plan better when working and helps to minimize the risk of unexpectedly running out of propane and having to walk back to get a replacement tank.

In addition, the composite cylinder propane tanks are also lighter, noncorrosive, and safer in a fire than steel and aluminum tanks. If steel and aluminum tanks are ever caught in a fire, they are likely to explode. Composite cylinder tanks, on the other hand, are designed to burn in a controlled fashion.

To learn more about and purchase composite cylinder propane tanks, feel free to contact the parts department at your local CMH Services branch.



Kevin Kazimir, IT Manager

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Getting to Know Donna Glantz – CMH Services’ Charleston Parts Manager

What is your favorite childhood memory?

Going to the beach with my mom and siblings. My mother would get up early and cook fried chicken and make potato salad and baked beans. We would pile into the car with the food and drive to the beach. The entire car smelled like fried chicken, and we dug into the food as soon as we got to the beach. After lunch we would ask our mother if we could go into the water, and my mother always said, “You have to wait an hour before going in the water.” We would think to ourselves “she got us again!”

If you could play one instrument you aren’t able to play now what would it be and why?

Piano—When my husband and I were stationed in Guam there was a flea market. One of the items listed was a piano for \$50. I always wanted to learn how to play the piano so my friend and I borrowed a truck and drove across the mountain to pick up the piano. My husband and I lugged the piano on our next two moves, and I spent \$500 getting the piano tuned and operational. However I never did learn how to play the piano!

What are your top two favorite movies (or TV shows) and why?

Sound of Music—I love musicals, and when I was ten I had a crush on Christopher Plummer.

Remember the Titans—It has amazing music, and it has a great lesson for all of us - especially those who grew up in the South.

What is your favorite food?

Tomato soup and a grilled cheese sandwich.

What’s the best concert you’ve ever been to?

My mom took me to my first concert to see Jimmy Buffet when I was 13. It was inside, and we were in the nosebleed section. At that time, smoking was allowed in the auditorium. However, cigarette smoke was not the only type of smoke. My mother and I left the concert laughing and hungry.

If you could have dinner with anyone (past or present) who would you choose and why?

Robin Williams—It struck me that even though he was always smiling, laughing, and joking in pictures and in his movies, his eyes always looked sad.

If you could have one super power, what would it be?

I'd like to be able to time travel because I would like a "do over" for some of the decisions made by the younger me.

If you could be a professional athlete who would you be and why?

Simone Biles—Because I think she is so graceful (and I'm not).

What is your favorite thing about CMH Services?

The core people that have been here for years. You know you can count on them for anything. They are always there to boost you up.



Donna Glantz, Charleston Parts Manager

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Community Corner: Origin

On March 4, 2017, Josh Landreman and his wife Patricia, Joelle Smith, and Donna Glantz volunteered to help with the 7th annual youth financial education summit, Money Rocks, which is held at Charleston Southern University.

Money Rocks is a workshop run by Origin – an organization that teaches kids ages 12 to 21 to manage their money and to prepare for their futures. Participants leave the workshop knowing a lot more about budgeting, needs versus wants, investing, paying for college, job preparation, and healthy behaviors. Josh, Joelle, and Donna were part of the Life Simulation workshop. The kids were given a packet that included their job titles and pay. They had to rotate to different tables representing mortgages, child care, food, vehicles, fun stuff (vacation, cell phones, etc.), and manage their money based on their income. There were financial counselors on hand to help them if they got into "trouble" with their budget. Patricia stayed with one group all day to help them navigate the entire workshop.

Origin is a non-profit that helps SC residents with financial education, home ownership, homeless prevention, anger management, women's empowerment, and so much more. To learn more about Origin please visit www.originsc.org



Donna Glantz, Charleston Parts Manager