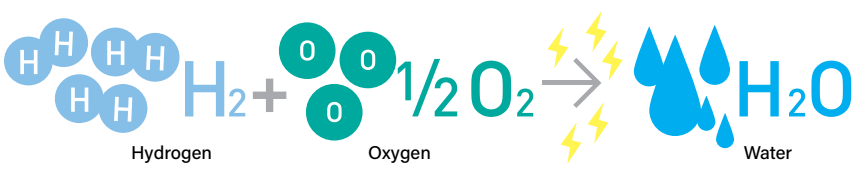
# FUEL CELL FORKLIFT

## Powered by Hydrogen and Producing Zero Carbon Dioxide - the Ultimate Eco-friendly Forklift


## Zero $CO_2$ Emissions - Power Generation Produces Only Water

The fuel that fuel cell forklifts use is hydrogen. Electricity is generated by causing a chemical reaction between this hydrogen and oxygen in the air, and this electricity is the forklift's source of power.

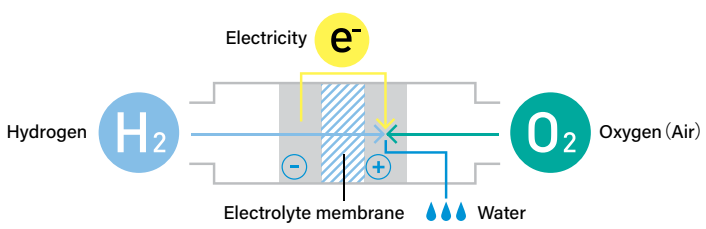



## The FC Stack: the Key to the Source of Power, and the Product of the Toyota Group's Prowess

An FC unit is what powers a fuel cell forklift. The key component in this unit is the FC stack, where the chemical reaction between hydrogen and atmospheric oxygen generates electricity and powers the forklift.

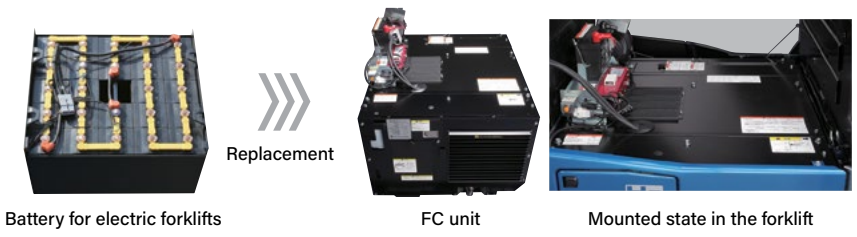

**High-efficiency power generation using the latest technology**

The FC cells that comprise the “FC stack” are the same as those used in Toyota Motor's first mass-produced fuel cell vehicle “MIRAI”. Cutting edge technology developed in-house has led to the world-leading level of high-efficiency power generation optimal for forklifts.




**Compact FC Unit**

This compact FC unit fits into the battery space of an electricl vehicle




## Aiming to Achieve a Hydrogen Society Through Environmentally Friendly Logistics

Through effectively using clean energy that produces no $CO_2$ emissions and pursuing planet-friendly logistics operations, we are contributing to bringing about a hydrogen society.

## Hydrogen: a Clean Fuel, and As Easy to Handle and Use As Gasoline and Diesel Fuel

Hydrogen results in no $CO_2$ emissions during operation, so it is extremely clean. What is more, refueling can be accomplished surprisingly rapidly. Its ease of use and ease of handling are on a par with gasoline and diesel fuel.

**0 $CO_2$**

**Zero $CO_2$ emissions during operation**

Hydrogen is a clean energy source that does not emit $CO_2$ at all. It plays a major part in reducing environmental load.

**3 minutes**

**Each filling of hydrogen takes about 3 minutes**

Filling of hydrogen takes about 3 minutes. This significantly reduces the downtime due to recharging, which is normally required for electric forklifts.

**8 hours**

**8 hours of operation※1 with a single hydrogen refill**

A fuel cell forklift can operate for approximately 8 hours, equivalent to an electric forklift with a lead-acid battery.
This is part of achieving efficient, waste-free operation.

**0 Space-saving**

**Space-saving※2**

The space normally taken for chargers or replacement batteries is not needed, which helps to save space.

**15 kW hours**

**Emergency external power supply function**

Each hydrogen refill can supply 1 kW x 15 hours of electricity, which can be used as a power source in times of emergency.

※1:Compared with JIS standard D6202:2011A-5 at 55% operation (at 100% hydrogen consumption). However, it varies by customer's usage conditions.
※2:Separate installation of hydrogen filling equipment is required.

## Specification of Fuel cell forklift (3wheel 1.8t truck)

| | |
|---|---|
| Max. load weight | 1,750 kg |
| Total length | 2,950 mm |
| Width | 1,075 mm |
| Height (up to head guard) | 1,970 mm |
| Min. turning radias | 1675 mm |
| Mast tilt angle (Forward/Back) | 5/6.5 deg |
| Driving speed(Loaded/Non-loaded) | 13.0/14.5 km/h |
| Lifting up speed(Loaded/Non-loaded) | 320/540 mm/s |
| Lifting down speed(Loaded/Non-loaded) | 530/550 mm/s |
| Weight | 3,090 kg |

*Operation temperature : 0～40 degree

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TOYOTA MATERIAL HANDLING

*Toyota Hydrogen Fuel Cell forklifts are available via rental only and limited to selected Toyota forklift models. Availability is subject to suitable hydrogen infrastructure being in place, including hydrogen supply and refuelling capability. Please contact Toyota Material Handling Australia for more information