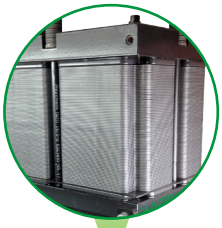
NUVERA®

Fuel Cell Systems
for Electric Lift Trucks

Performance and efficiency distinguish the power offered by Nuvera.

Nuvera has developed fuel cell stacks specifically for motive power, proven in demanding conditions both on- and off-road since 2000. The Nuvera® stack, the core of the fuel cell system for fast-fueled electric trucks, is our eighth generation fuel cell stack.

Now part of Hyster-Yale Group, Nuvera combines our hydrogen technology expertise with the know-how of a major industrial truck manufacturer. The result is a line of products built and supported by people who understand the demands of materials handling applications inside and out.



Core Component Design

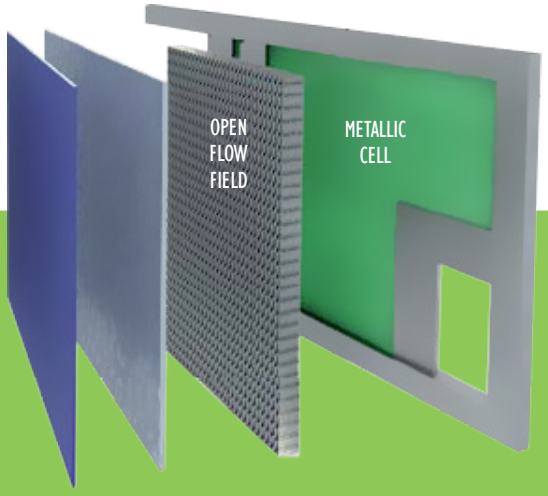
The Nuvera® fuel cell system is developed around a fuel cell stack designed for motive power by Nuvera and proven in service.

Fuel Cell System Design for Battery Box Replacement

The Nuvera® fuel cell system is engineered to meet the power, weight, and performance requirements of the truck.

Truck Design Know-How

The Nuvera® fuel cell system is built and tested by professionals who understand the demands of materials handling service.



The state-of-the-art Nuvera® fuel cell stack features a proprietary design architecture uniquely suited to the demanding needs of materials handling.
A rugged metallic cell and open flow field results in high durability, power density, and efficiency.

Rugged Metallic Construction

Metallic bipolar plates provide superior resistance to shock and vibration in industrial settings. Metallic components have the additional advantages of high-volume manufacturability, and cost effective repair.

Remanufacturable & Recyclable

Core electrochemical components and individual cells within the stack can be replaced at a fraction of the cost of a new stack. The catalyst can be recovered and recycled.

High Power Density

A unique open flow field architecture distributes reactants within the fuel cell, resulting in industry-leading power density. This translates into compact, high-efficiency stacks.

Nuvera® fuel cell systems span a range of truck classes, sizes, and voltage ratings, to repower electric forklifts of many makes and models.

Optimized efficiency with hybrid design

More power to meet peak operational demands

Long runtimes and fast fills

Full power over a wide temperature range

NUVERA® FUEL CELL SYSTEM SPECIFICATIONS

Seamless Fit
Standard system sizes and electrical connectors make the Nuvera® fuel cell system an easy drop-in battery replacement for electric industrial trucks

Fast Refueling
Can fill most lift trucks in as little as three minutes.

Weight
The Nuvera® fuel cell system meets the weight requirements specified by the truck manufacturer

Fuel Storage
Designed when possible to meet or exceed the run-time of the battery being replaced.

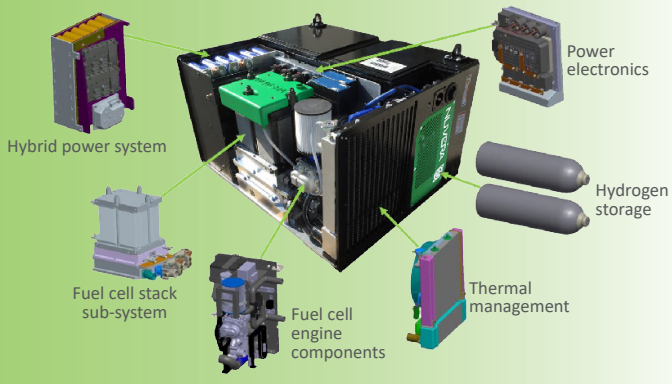
C-Series
for Conventional Battery Box (CBB) Electric Riders (Class I)

N-Series
for Narrow Aisle (Class II)

M-Series
for Motorized Hand Trucks (Class III)

Unless noted otherwise, performance ratings are at standard conditions of temperature at 20°C (68°F) and absolute pressure at 100 kPa (14.5 psi).

Maintenance-Friendly 'Engine' System



Series	Model	Voltage	Nominal Dimensions X x Y x Z (inches)	Typical Truck
C	C95A-27	48	38.6 x 26.4 x 22.6	1-2 ton DBB
	C95A-30	48	38.6 x 29.4 x 22.6	2-3 ton CBB
	C95A-33	48	38.6 x 32.2 x 22.6	2-3 ton CBB
	C95B-36	48	38.6 x 35.6 x 22.6	2-3 ton CBB
	C95C-40	48	38.6 x 38.8 x 22.6	2-3 ton CBB
N	N95A-21	36	38.6 x 20.4 x 30.9	Reach/Order Picker
M	M55A-13	24	30.9 x 13.0 x 31.1	Pallet Rider

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NUVERA®
Making hydrogen make sense.