

CASE STUDY

Mini Excavator


Customer:

JCB, one of the world's largest construction, material handling, and agricultural machinery manufacturers

The Problem:

With increased regulation and pressure to reduce emission in the construction industry – as well as an increase in customer demand for work indoors, underground, and close to people – the manufacturer wanted to bring a fully electric mini excavator to market quickly.

The Challenge:

To gain a competitive edge, JCB had a short timeline for bringing the electric mini excavator to market. They needed an electrification partner with proven experience and technology that could help them expedite the development of the concept and then meet demand as production levels increased. Specifically, they were looking for:

- Voltage and capacity
- Compact, light-weight battery that fits the vehicle dimensions
- Fast-charging, long-lasting battery suited to a very harsh off-highway application

The Solution:

We provided four Hyperdrive lithium-ion battery packs delivering a total energy capacity of 20kWh.

The Results:

JCB was able to take advantage of early entry into the electric vehicle market and establish a leadership position by delivering a fully electric mini excavator with a long battery life and the ability to work anywhere, anytime. It achieved:

- Zero emissions, helping JCB make progress toward sustainability goals
- Quiet operation, enabling use on more urban and indoor sites and for extended hours
- Preservation of performance capabilities and matched productivity of diesel model


HY Energy STANDARD

Pack Arrangement: **4P**

Voltage Range: **37-50V DC (44V Nominal)**
per Battery

Energy: **5kWh per Battery**

Max Power: **6.5kWh per Battery**

Current: **130A per Battery**

Benefits of a fully electric mini excavator for end customers:


Sustainable

100% electric excavator with zero emissions to meet regulatory requirements and help customers reduce their own carbon footprint.


Safe

Safer for the environment with zero carbon emissions and safer for operators with lower noise levels.


Quiet

Quiet operation ideal for jobs in urban areas, indoor work, and operation outside normal hours with 7 dBA lower noise than a diesel machine.


Economical

With fewer parts, electric vehicles are more reliable and require less maintenance. Plus, they are less expensive to operate since they don't require expensive fossil fuels.