

## Reference Report: **Full electric Drilling Rig**



### Key facts

- Vertical drilling rig
- 55 t total weight
- Peak power 265kW
- Maximum drilling diameter 1500mm
- Maximum drilling depth 34.5m
- Battery working time 10 hours

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**LIEBHERR**

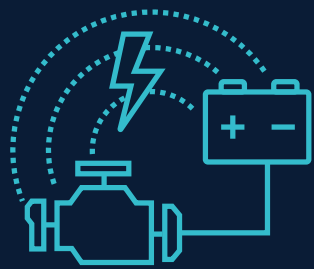
**SUNCAR**

Picture kindly provided by Liebherr-Werk Nenzing GMBH



# / The Challenge

To create a redundant HV supply for highest reliability of the drilling process where unplanned interruptions must be avoided.



## Pure battery

Pure battery for special working conditions like inner city work.



## Twin HV voltages

2 HV voltages 400V and 750V must be integrated: Various HV components can be combined.



## Redundant battery system

2 or more batteries must be coupled in a redundant way to create HV-system.

Flexibility: various battery voltages can be accepted.

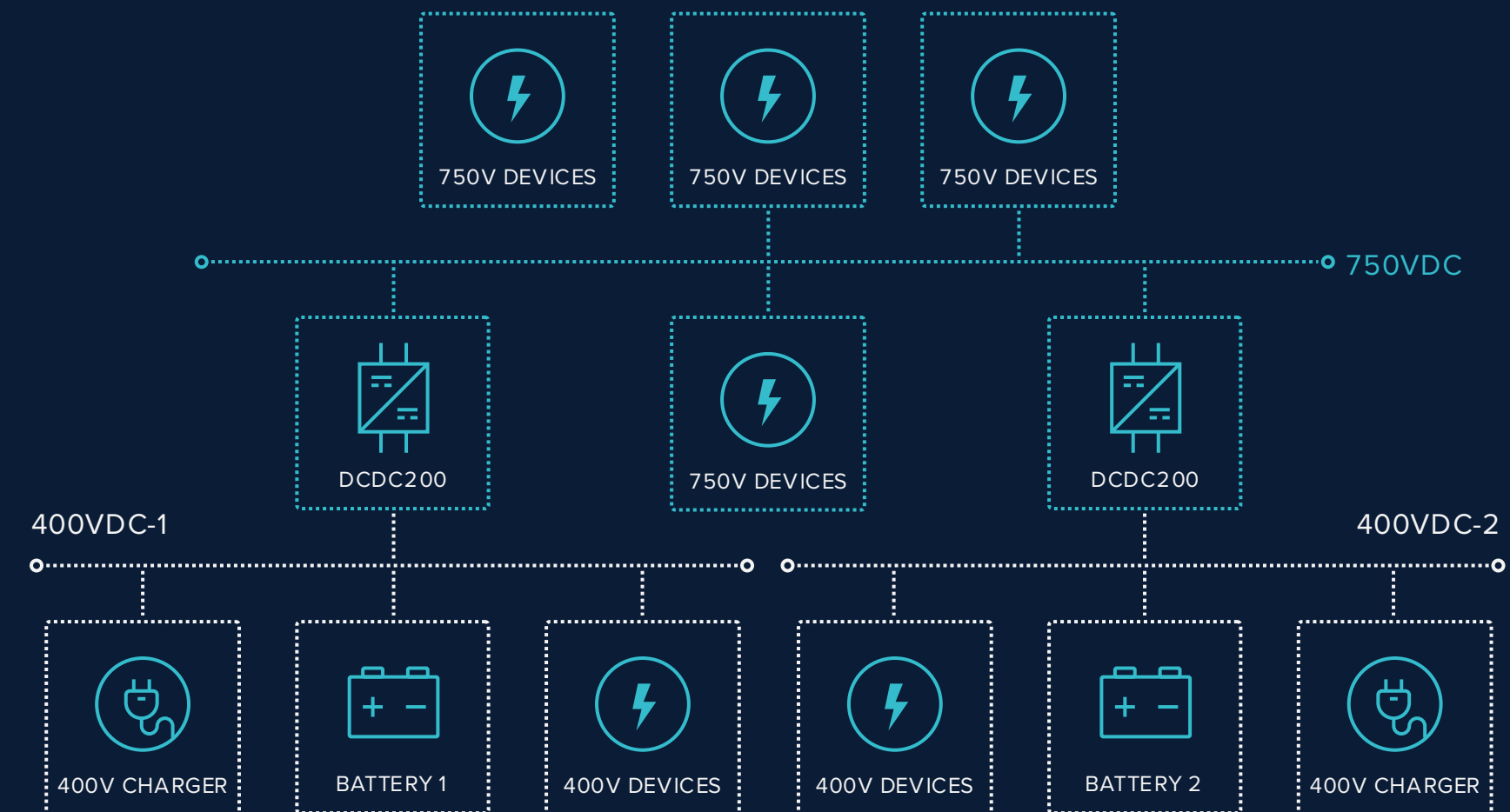
## / The Solution

2 batteries, coupled by DC/DC to HV



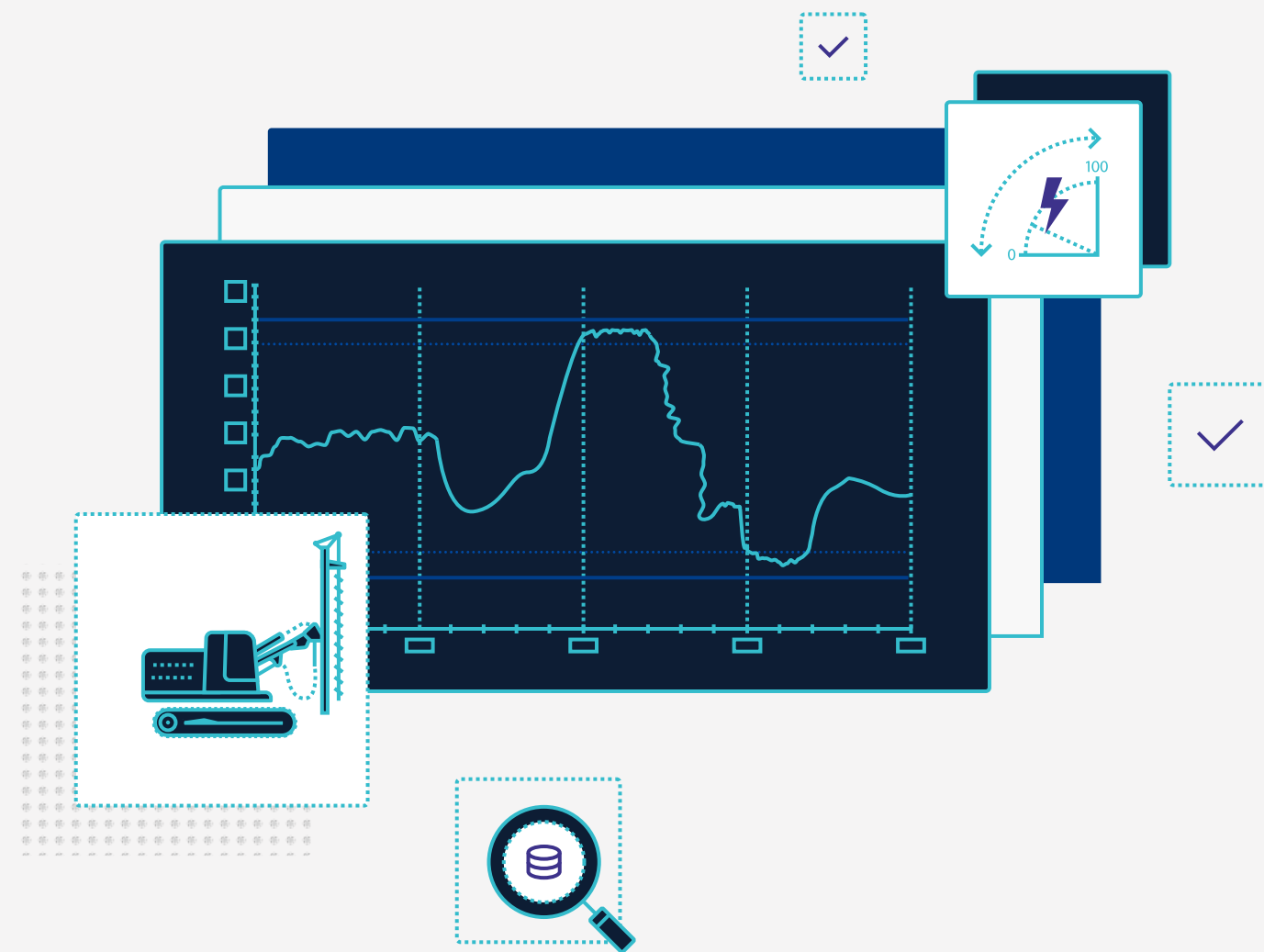
Redundant and fully flexible battery solution:

- 2 or more batteries with ARADEX DC/DC converters create a redundant HV system.
- HV level is set to 750VDC.
- Different battery voltages and topologies can be combined.
- Redundant solution for battery and charging.



# / The Solution

## Powermanagement with SmartDC



### The challenge: The overall Powermanagement

- Balance power and energy between the two batteries
- Including the asymmetric power needed at the 2 \* 400V subsystems
- Realize fall-back running mode for drilling in case of a problem of one of the 400V subsystems

## / The Solution

### SUNCAR as powerful partner



#### SUNCAR - Competences

- Feasibility study
- Prototype development
- Manufacturing series
- For more information visit [www.suncar-hk.com](http://www.suncar-hk.com)



#### Networking and partnership

- In this project SUNCAR was responsible for the whole project in partnership with the OEM.
- ARADEX was responsible for delivering the components and solution for combining 2 batteries.
- SUNCAR and ARADEX cooperate in several more projects and further expand their partnership.

# / Challenge us

## Review of your application

**Challenge us with your application, your demands and your ideas!**

- + Our engineers can work out or support the project planning for your application.
- + You receive the result as an electronic document: cornerstones of your project regarding electrification or hybridization including dimensioning done by our experienced project engineers.
- + Contact our sales team for more information.



Thanks for your attention!

**Optimized usability  
and performance  
for the best e-mobility**



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