

Innovative, reliable lithium-ion technology

Rapid charging and opportunity charging ensure continuous availability of vehicles

High level of energy efficiency

Maintenance-free

Long service life



## Lithium-ion battery 80 V (500 Ah)

### Battery system based on lithium-ion technology

Efficient, maintenance-free and long-lived – those are the advantages of our lithium-ion battery. With fast charging times, no maintenance and a long battery life, you do not only benefit from reduced total costs. This form of energy storage also involves a high level of efficiency when charging and recuperating braking energy and facilitates energy savings of more than 20 percent.

The high-performance energy cells of the lithium-ion battery are characterized by very short charging times. After an opportunity charging time of only 53 minutes, the battery absorbs 50 percent of its capacity. After 105 minutes, it reaches its full charge status. The opportunity charging option enables you to use your vehicles continuously for up to 24 hours a day, 7 days a week without changing batteries.

Using the latest lithium-ion technology, we developed a totally maintenance-free battery featuring an impressive life expectancy of up to 3,000 full and significantly more partial discharge cycles. By comparison: The average service life for lead-acid batteries ranges from 900 to 1,200 cycles.

Battery, charger and vehicle are so fine-tuned to each other as to ensure the maximum degree of efficiency, reliability and convenience in daily operation. In addition, the battery is continually monitored by our innovative battery management system, which is already included.

Restrictions on the operation of vehicles due to escaping gases or acid from conventional lead-acid batteries do not apply to lithium-ion batteries. That means vehicles equipped with lithium-ion-based batteries can also be confidently used in food storage areas, for example. Because of the extended temperature range from –20 to 55°C the truck can be used indoor and outdoor

The tried and tested features of our vehicles – rugged design, powerful 3-phase technology and outstanding ergonomics – are perfectly complemented by this modern and highly efficient storage technology.



# Technical specifications

	Size S	Size M	Size L	
<b>Technical Data</b>	Nominal capacity			500 Ah
	Nominal voltage of battery			43,200 Wh
	Nominal voltage of truck			86.4 V
	Nominal energy content			80 V
	Cell chemistry			Lithium/iron phosphate
	Operating temperature <sup>1), 2)</sup>			-10°C to 55°C
	Operating temperature for charging <sup>2)</sup>			0°C to 55°C
	Protection rating / impact			IP54 / same as truck control system
	Weight (incl. Additional weight)			1,558 kg      1,863 kg      2,173 kg
	Dimensions in mm			1,028 x 711 x 784      1,028 x 855 x 784      1,028 x 999 x 784
<b>Charge</b>	Charge status display			in the truck display and while charging on the charger
	Charge time with external charger SLH090i 80 / 290			105 min
	Opportunity charging external charger			50 % of nominal capacity after 53 min
	Charge time with external charger SLH090i 80 / 160			200 min
	Opportunity charging external charger			50 % of nominal capacity after 100 min
<b>Trucks</b>	EFG 425k/430k EKX 516k ETX 515 EZS 7280	EFG 425/430/S30 EFG 535k/540k/545k EKX 516 ETX 515	EFG 540/S40/545/550/S50 EZS 7280	

<sup>1)</sup> Different temperatures may affect battery performance.

<sup>2)</sup> In terms of battery temperatures.

# Benefit from the advantages

## Long operating times

May be used continuously in economical multi-shift operation:

- Unrestricted opportunity and quick charging capacity.
- No more battery changing necessary.
- Available in combination with charger SLH 090i 80 V 290 A or 160 A.

## Optimised charging processes with high-frequency charger

Extremely short charging times guarantee high level of vehicle availability and great flexibility for day-to-day warehouse tasks:

- 50 percent battery capacity is reached after only 53 minutes of charging time, so that breaks and downtimes can be used for charging.
- Full charge is reached after only 105 minutes with SLH 090i 80 V 290 A.
- The charging can be interrupted at any time with no adverse effects.
- Convenient charging with the comfort charging plug is possible at any time.

## No battery maintenance

The lithium-ion battery is absolutely maintenance-free and does not emit gas. That largely eliminates the costs of battery upkeep, maintenance and infrastructure:

- No need to add water.
- No need for special charging areas with ventilation.
- No unpleasant odours from gases or acidification.
- No expensive battery changing systems with their heavy drain on time and human resources.
- The enclosed design (IP54) makes the battery insensitive to outside influences.

## Integrated Battery Management System (BMS)

The Jungheinrich BMS continually monitors energy management and ensures reliable operation:

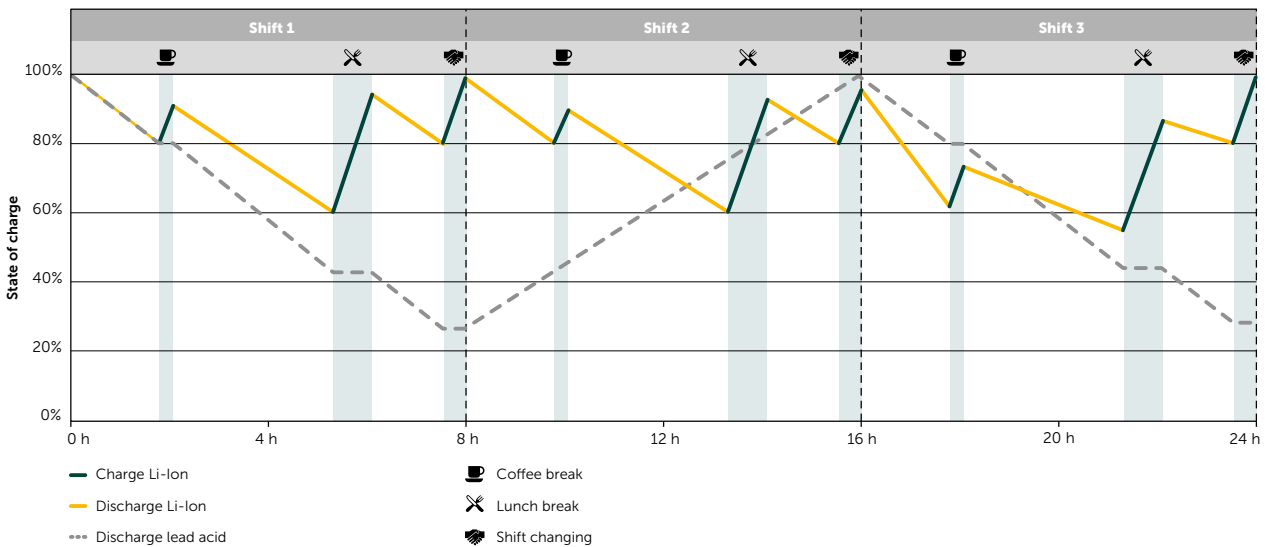
- Current charge state appears in the vehicle's display (SOC) including visualisation of recuperation (energetic recovery system).

## High level of energy efficiency

The increased efficiency in comparison to conventional technologies significantly reduces energy costs:

- Fast and efficient charging due to communication between battery and charger.
- Even under extreme power requirements such as full-load operation, the full energy of the battery is available (no voltage drop as in lead-acid batteries).
- High electrochemical efficiency level for charging and for discharging/driving/lifting.
- Battery, vehicle and charger are perfectly fine-tuned to each other to save electrical energy and reduce CO<sub>2</sub> output.

## Typical charge and discharge history:



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The German production facilities  
in Norderstedt, Moosburg  
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**ISO 14001**

Jungheinrich fork lift  
trucks meet European  
safety requirements.



 **JUNGHEINRICH**

The Jungheinrich logo, featuring a red upward-pointing arrow above the word 'JUNGHEINRICH' in a bold, black, sans-serif font.