

## Features

Truck	Standard	Options
48V permanent magnet synchronous drive motor	●	
Hydraulic power unit	●	
PU drive wheel	●	
1150mm fork length	●	
570mm outside fork width	●	
Lifting height limit: 1.8m	●	
Soft landing [only available for duplex mast]	●	
48V/80Ah lithium battery[EVE]	●	
Balance wheels	●	
Double load wheels	●	
Fork lift & lower adopts stepless speed regulating	●	
Different length of forks		○
Different width of outside fork		○
Different mast lifting heights		○
48V/105Ah lithium battery [EVE]		○
48V/125Ah lithium battery [CATL]		○
Load backrest		○
Controls and instruments		
Interactive meter	●	
Multi-function tiller	●	
PIN code access	●	
USB power supply	●	
Key switch		○
Electric steering[stand-on type]	●	
Systech controller	●	
Safety		
Emergency disconnect switch	●	
Turning deceleration[stand-on type]	●	
Mast protection		○
Horn	●	
Other		
48V30A charger		○
48V50A charger		○
Lithium battery(48V/80Ah,EVE) with the on-board charger(48V,20A)		○
Lithium battery(48V/105Ah,EVE) with the on-board charger(48V,20A)		○



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ISO 45001:2018



ISO 14001:2015



ISO 9001:2015



HANGCHA trucks conform to the European Safety Requirements.



# X SERIES

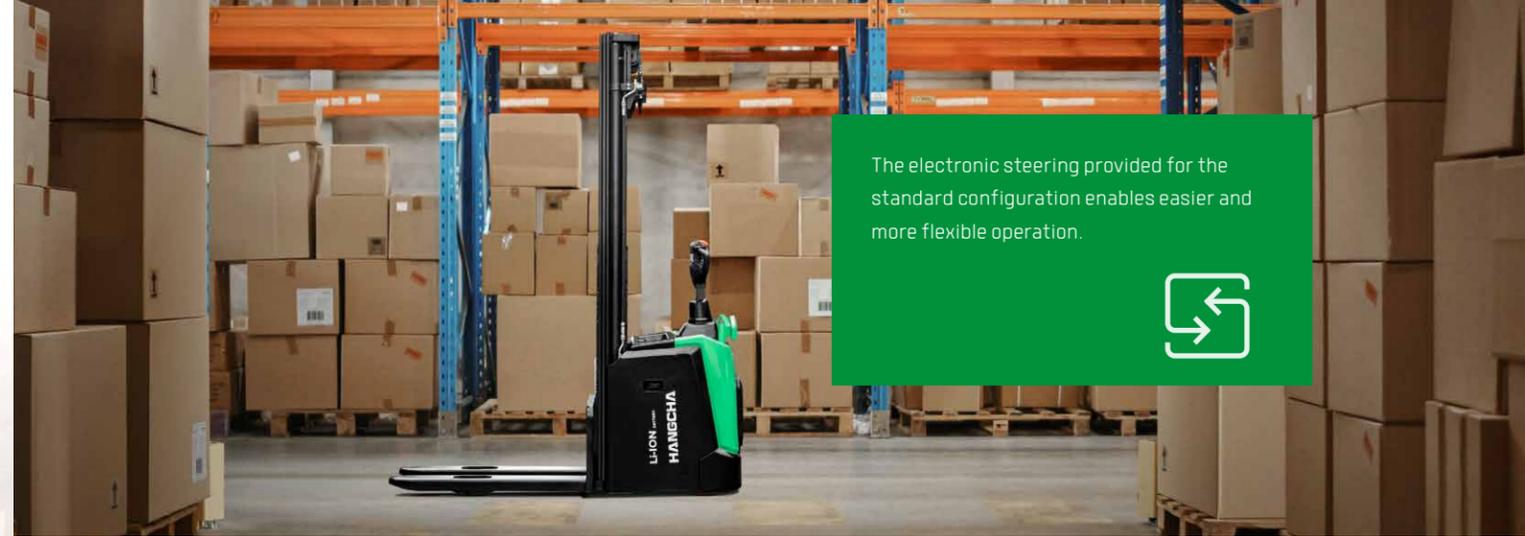
HI-RANGE ELECTRIC STACKER  
WITH LITHIUM POWER

With capacity of 1,200 to 2,000kg

# X SERIES HI-RANGE ELECTRIC STACKER

X series Hi-Range Electric stackers are a new generation of products newly developed by Hangcha for warehousing and logistics applications. Using the advanced permanent magnet brushless drive technology and equipped with a new 48V system, the products have advanced performance, comfortable, safe and reliable operations and low use and maintenance costs, and are ideal tools for loading, unloading and handling palletized goods in warehouses, supermarkets and workshops.

**48V**  
VOLTAGE  
WITH  
PERMANENT MAGNET  
SYNCHRONOUS DRIVE MOTOR



The electronic steering provided for the standard configuration enables easier and more flexible operation.



## HIGH PERFORMANCE

- With high power drive motor, provides fast travel speed and good gradeability.
- The permanent magnet synchronous drive system has excellent performance and low energy consumption. The 48V power supply system has less heat generated.
- With the VCU control, the vehicle can be controlled accurately, stably and more efficiently.



(Option) Lithium battery with the on-board charger (48V, 20A)

Pedestrian type		Stand-on type	
	<b>6.0</b> km/h Travel speed (laden)		<b>9.0</b> km/h Travel speed (laden)
	<b>8.0</b> % Gradeability (laden) [1.6t]		<b>10</b> % Gradeability (laden) [1.6t]



## RUGGED ON THE OUTSIDE.

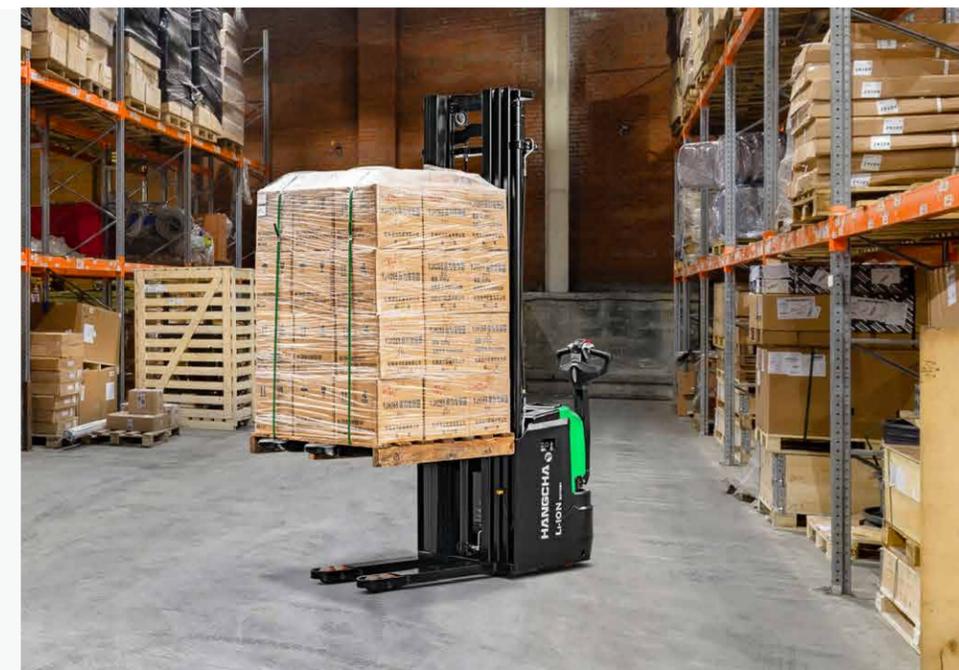
The X series Hi-Range Electric stackers adopts a professional industrial design of exterior and a series family design. The vehicle has a smooth vivid profile and a fully ergonomic design, following the latest exterior design trend.

Made of high-strength steel plates that are molded by stamping, the vehicle exterior is robust, durable and high-grade, and meets environmental protection requirements.



## SIMPLE OPERATION

System Stepless lifting and descending speed regulation is provided for the standard configuration, to and spillage more precise fork control and more stable goods lifting and descending.



# ENJOY YOUR WORK.

- Optimized designing structure to offer a good visibility and easy entrance of the pallet.
- The compact body and big rounded design provide an ideal operation in limited space, and the wedge designed chassis greatly increases the passing ability.



The standing driving pedal with shock-absorbing design significantly improves standing driving comfort and reduces long-time driving fatigue.



Customer can choose different width of outside fork and length of forks to fit variable pallet.

## NEW TILLER

With the newly developed compact and stylish tiller, all operations can be completed with one hand.



PIN code access

Displayed turtle speed function applied to move slowly and helps to stack goods in narrow spaces.



## MAINTENANCE

- Maintenance-free permanent magnet synchronous motor.
- The fault information can be checked directly via the interactive instruments instead of the manual.
- Rear cover can be completely open, operator can see all the components, so the maintenance is very convenient.
- All shafts installed lubricated shaft sleeve and oil cup, provide convenient maintenance and long service life.



## MORE PROTECT

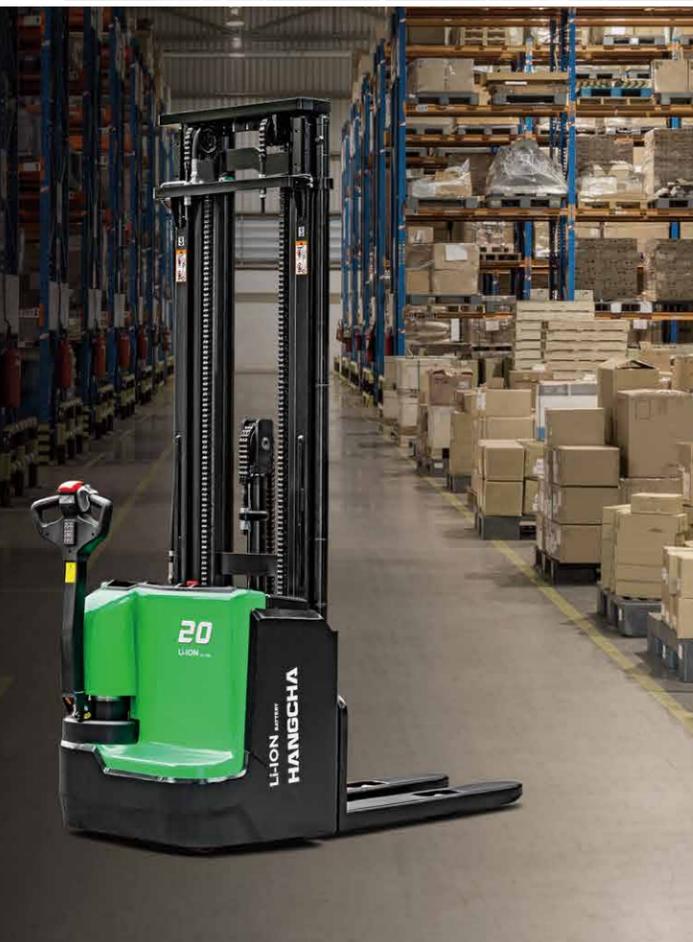
- With the four-point low center of gravity design and a high-strength steel frame structure, the vehicle frame has a large residual load capacity and a long service life.
- Using non-contact proximity switch, it can provide long life and reliable operation.
- H-type mast profile section to provide more stable and rigid performance.
- The battery is reliably fixed and the battery cover is supported by soft materials, so that the vibration and noise generated during the operation of the vehicle are reduced.



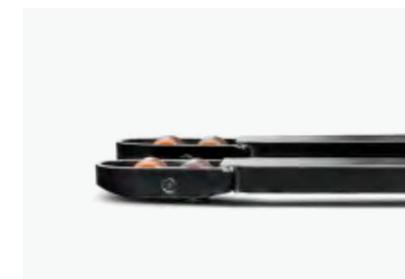
Pedestrian type use the new design drive system, the drive motor will not accompany the tiller rotation, it can keep all the cable connect to the drive motor avoid being bent.



With a low noise and low vibration hydraulic power unit to enable stable and reliable lifting and descending.



The power plug is fixed on the truck body to avoid damage from battery installment.



Punch-formed forks to provide more strength and tip guide to provide higher efficient operation.



Water-proof plugs and connectors applied to provide a reliable protection to electric system.

**With three braking types:**

Releasing brake, reversing brake and emergency brake, the driving safety has been ensured.



The applied slope anti-slip function ensures the safety of the operation.



The emergency button on the tiller head can effectively avoid the harm to the driver.



# ADVANCED SAFETY FEATURES

- 

After fork lifting 500mm.


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Decrease speed when turning


  - 

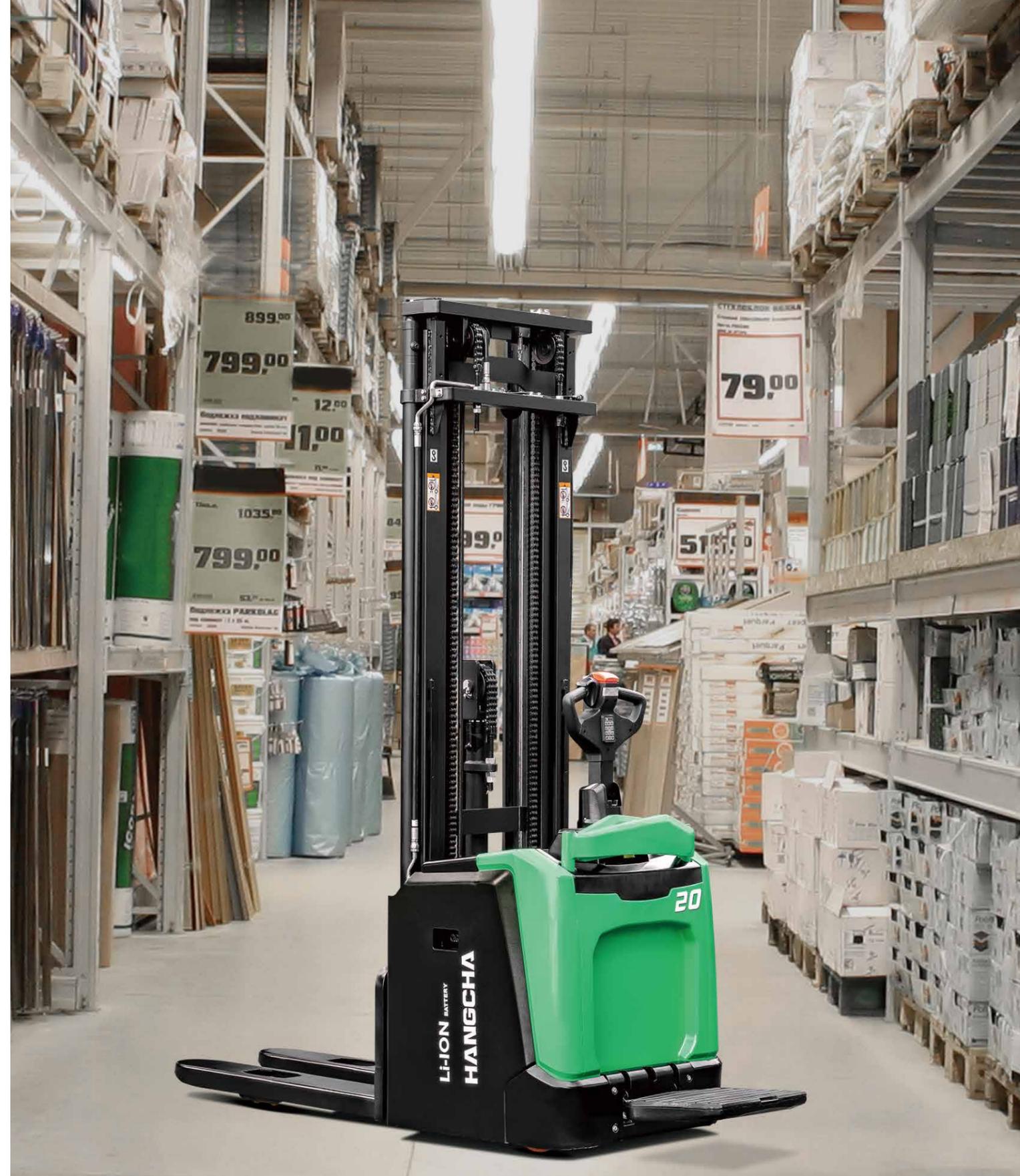
Soft Landing (Lift)


  - 

Soft Landing (Lowering)


  - 

1800mm
- Travel speed will be automatically reduced after fork lifting 500mm.
  - Turning speed is automatically reduced when steering only for stand-on.
  - A lifting soft landing is provided for the standard configuration so as to ensure the safety of the vehicle when the fork is lifted to the top. (only available for duplex mast)
  - It has an intelligent soft landing that automatically slows down the lowering speed when the fork is less than 100mm above the ground, effectively protecting cargo safety. (only available for duplex mast)
  - For the standard configuration, a function of stopping lifting when the lifting height reaches the limit of 1.8m and resuming the lifting after the guardrails are retracted is provided to facilitate personnel to escape when high-position goods fall.



HANGCHA provides Li-ion battery (LiFePO4) with 6 years or 12000 hours warranty.



# LITHIUM POWERED

EMPOWER YOURSELF  
WITH THE BEST



Li  
Lithium

POWER THE POSSIBILITIES  
RELIABLE LITHIUM-ION TECHNOLOGY



## LITHIUM BATTERY ADVANTAGES



### Long service life

4000 full charging cycles with at least 75% residual capacity.



### Cold area application

Li-Ion batteries maintain high performance at temperatures below freezing.



### Return on investment

Add flexibility to your operation, cost-saving in the long term, increased efficiencies.



### High safety and reliability

Intelligent battery management monitoring every important function, no emission of battery gasses.



### Maintenance free

No topping up of water or checking acid levels.



### Opportunity charging

Full performance during several shifts thanks to effective interim charging.



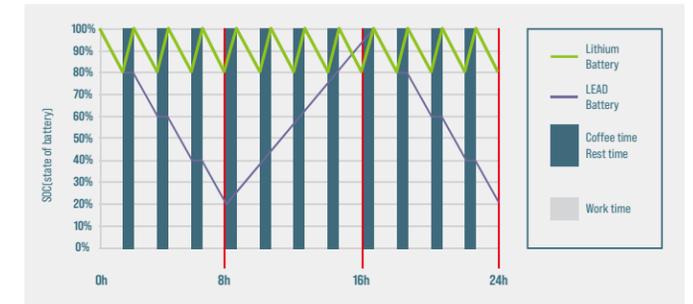
### High energy density

The high energy density of the Li-Ion battery ensures long working times and increases the high availability.

## FEATURES & BENEFITS THE HANGCHA DIFFERENCE

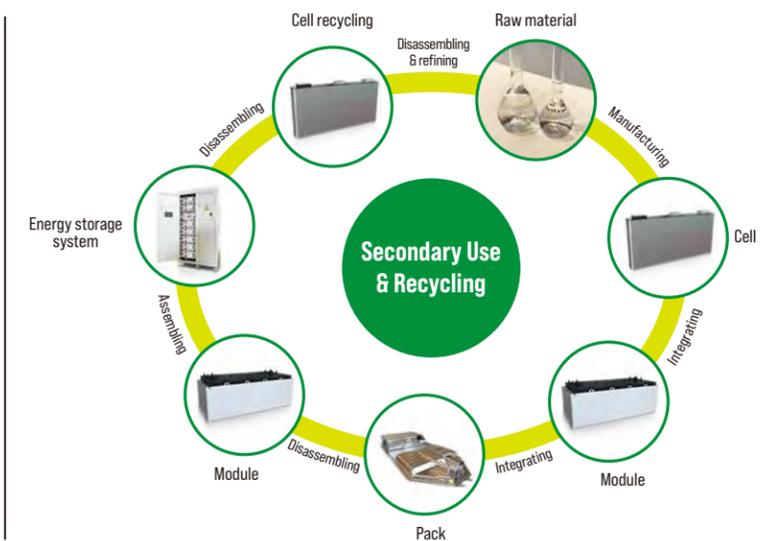
### Efficiency

By quick opportunity charging any downtime, such as a lunch break, can be efficiently used and the battery is recharged in a very short period of time. Interim charging does not affect the battery service life.



### Safety

- / Intelligent battery management monitoring every important function.
- / Higher user safety, thanks to acid-free use.
- / User friendly due to avoided battery change.
- / No emission of battery gasses.



#### QUESTION 1

**Q: What are the characteristics of lithium batteries, especially when used in high and low temperature environments?**

Charging temperature: -30 C -65 C  
Discharge temperature: -30 C -65 C  
Storage environment temperature: -30 C -65 C

After the truck key switch is closed, the instrument battery condition needs to be checked:

1. Confirm that there is no battery system alarm message on the instrument panel.
2. Please check the remaining power before use. It is recommended to use the SOC between 50% and 100%.
3. If the SOC is lower than 20%, it is not recommended to continue using it. Please charge it as soon as possible.

#### QUESTION 2

**Q: What is the charging time and usage time calculation of forklift lithium battery?**

1. Available power of lithium battery (kWh) = rated voltage \* rated power \* 90% (To avoid over-discharge damaging the battery, the forklift is equipped with low power protection (less than 10%).)
  2. Charging time (h) = rated capacity of lithium battery (Ah) \* 90% \* charger output current (A).
  3. The power consumed for charging (kWh) = the available power of the lithium battery \* 93% (the charging efficiency of the charger is calculated as 93%).
  4. Usage time (h) = available power of lithium battery \* energy consumption data.
- For specific energy consumption values, please refer to the technical table on the sharing platform.**

#### QUESTION 3

**Q: How does Hangcha BMS work to ensure the safety of the lithium battery?**

HANGCHA BMS (battery management system) can monitor the cells at all times. As a result, hangcha lithium power is the reliable solution.



#### Battery Safety Management:

- Overcharge / over discharge protection
- Overcurrent / over-temperature / low-temperature protection
- Multi-level fault diagnosis protection
- Double fault monitoring



#### Battery Parameter Detection:

- Battery voltage detection and analysis
- Battery current detection and analysis
- Battery temperature detection and analysis



#### Equilibrium Management:

- Equalization based on voltage mode
- Equalization based on time mode
- Equalization based on battery cell SOC
- Active / passive equalization optional



#### Other Features:

- Low cost, low power consumption
- Historical data record
- Flexible cascade expansion
- CRC data validation