

**HANGCHA GROUP CO., LTD.**

**Factory site:** 666 Xiangfu Road,  
Hangzhou, Zhejiang, China (311305)

**Tel:** +86-571-88926735 88926755  
**Fax:** +86-571-88926789 88132890

**sales@hcforklift.com    www.hcforklift.com**

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ISO45001:2018



ISO14001:2015



ISO9001:2015



HANGCHA trucks conform  
to the European Safety  
Requirements.



# X SERIES

DOUBLE STACKER WITH LITHIUM POWER

with capacity of 2,000 kg



# X SERIES DOUBLE STACKER WITH LITHIUM POWER

X series double stackers with lithium power 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, workshops.



## RUGGED ON THE OUTSIDE



- The X series double stacker with lithium power adopts a professional industrial design of exterior and a series family design. The truck 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 truck exterior is robust, durable and high-grade, and meets environmental protection requirements.







## REVOLUTIONARY PERFORMANCE



- The permanent magnet synchronous drive system has excellent performance and low energy consumption. The 48V power supply system has less heat generated.
- With high power drive motor, provides fast travel speed and good gradeability.

- The electric steering feature enables easier and more flexible operation (Stand-on & rider model).
- With the VCU control, the truck can be controlled accurately, stably and more efficiently.
- Regenerative brake and slope anti-slide function are offered by this truck.
- Double-stacker capability for excellent passability; handles two pallets simultaneously, doubling throughput.

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

CDD20-XT1-SID  
 **6.0** km/h  
Travel speed (laden)  
 **10** %  
Gradeability (laden)

CDD20-XT1S-SID  
 **9.5** km/h  
Travel speed (laden)  
 **8.0** %  
Gradeability (laden)

CDD20-XT1S-SISUD  
 **9.5** km/h  
Travel speed (laden)  
 **8.0** %  
Gradeability (laden)

## MAINTENANCE

- Permanent magnet synchronous motor need no maintenance.
- 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.
- The fault information can be checked directly via the interactive instruments instead of the manual.





# COMFORTABLE EXPERIENCE

- Optimized designing structure can 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.

■ Newly developed tiller is compact and stylish.

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



- The proportional lifting/lowering speed regulation system enables more stable and accurate operation.
- Customer can choose different width of outside fork and length of forks to fit variable pallet.



# RELIABILITY

- With the 5-pivot and low center of gravity design and a high-strength steel frame structure, the frame has a large residual load capacity.
- The newly designed traction system of the pedestrian double stacker keeps the drive motor from rotating with the tiller during steering, preventing all cables connected to the motor from breaking easily.
- Using non-contact proximity switch, it can provides long life and reliable operation.



The lifting cylinders have been optimized for design, ensuring stability and reliability, with reduced stress and increased durability.



# SAFETY

- Turning speed is automatically reduced when steering (Stand-on & rider model).
- 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.
- 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.

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



Travel speed will be automatically reduced after fork lifting 500mm.



The lifting buffering function can ensure the safety of the truck when the fork is lifted to the top.

Standard electronic lift limit and intelligent controller-based protection provide dual safeguards, eliminating impact at full lift to protect both the motor and the cargo.



- Water-proof plugs and connectors applied to provide a reliable protection to electric system.
- The power plug is fixed on the truck body to avoid damage from battery installment.
- The hydraulic power unit applied to provide low noise, low vibration, smooth lifting and landing reliable operation.
- The battery is reliably fixed and the battery cover is support by soft materials, so that the vibration and noise generated during the operation of the vehicle are reduced.



The stamped fork with higher strength and impact resistance, and guided fork prongs, further improve operation efficiency.



# LITHIUM POWERED

## EMPOWER YOURSELF WITH THE BEST



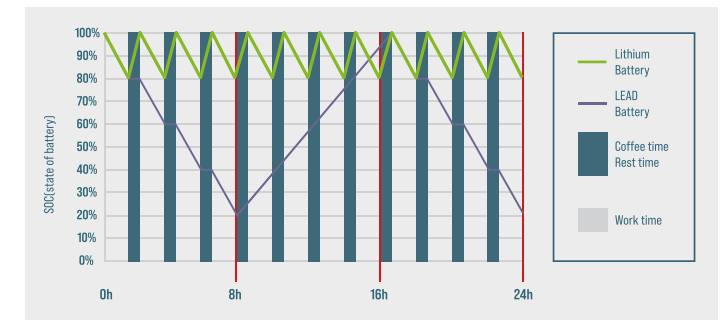
Li  
Lithium

POWER THE POSSIBILITIES  
RELIABLE LITHIUM-ION TECHNOLOGY

## FEATURES & BENEFITS THE HANGCHA DIFFERENCE

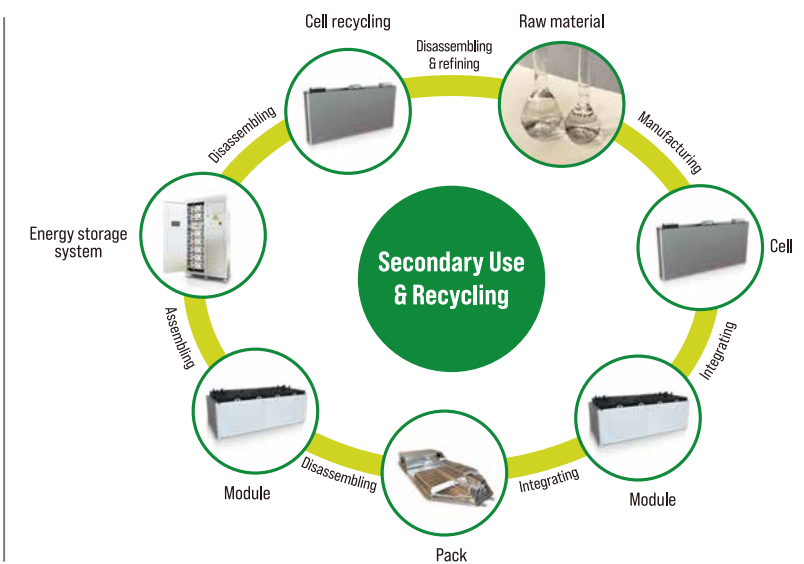
### Efficiency

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.



## LITHIUM BATTERY ADVANTAGES



### Long service life

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



### Return on investment

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



### Maintenance free

No topping up of water or checking acid levels.



### High energy density

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



### Cold area application

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



### High safety and reliability

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



### Opportunity charging

Full performance during several shifts thanks to effective interim charging.

### 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

Features

Truck	Standard	Options
48V permanent magnet synchronous drive motor	●	
Hydraulic power unit	●	
PU wheel	●	
1190mm fork length	●	
570mm outside fork width	●	
The ground clearance height of fork is 90mm	●	
Lifting damping system	●	
Multi-function tiller	●	
48V/80Ah lithium battery(EVE)	●	
Additional wheels	●	
Dual load wheels	●	
USB plug	●	
Fork lift & lower adopts stepless speed regulating	●	
Electronic lift limit	●	
Soft landing	●	
Different length of forks		○
680mm width of outside fork		○
Key switch		○
48V/105Ah lithium battery(EVE)		○
48V/125Ah lithium battery (CATL)		○
Load backrest		○
Different lift height (see mast table)		○
Overhead guard (Rider model)		○
Controls and instruments		
Electric steering (Stand-on model)	●	
Systech controller	●	
Interactive meter	●	
Non contact interlock switch	●	
Safety		
Emergency disconnect switch	●	
Horn	●	
PIN code access	●	
Turning deceleration (Stand-on & rider model)	●	
Mast protection: mesh		○

