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ISO45001:2018



ISO14001:2015



ISO9001:2015



HANGCHA trucks conform to the European Safety Requirements.

HANGCHA GROUP CO., LTD.

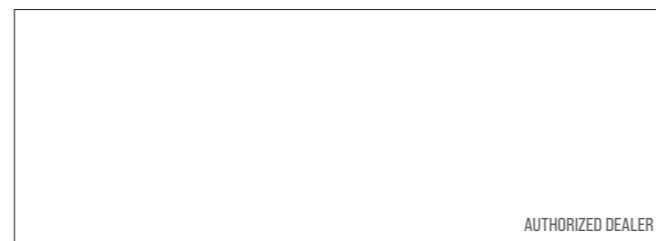
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AUTHORIZED DEALER

XH SERIES

HIGH-VOLTAGE LITHIUM BATTERY FORKLIFT

With capacity of 12,000 to 18,000kg

XH SERIES HIGH-VOLTAGE LITHIUM BATTERY FORKLIFT

XH series high-voltage lithium battery forklifts are new series of high-voltage lithium battery forklifts independently developed by Hangcha relying on the new energy automobile voltage platform for the first time based on the deep understanding of electric forklifts and internal combustion forklifts for decades by breaking through the traditional design concept. The series of models redefine electric forklifts in terms of efficiency, power and reliability, and replace the internal combustion with electric forklifts.

VOLTAGE

608 V

SPEED MODELS

3 S/P/E mode
[Super/Power/Eco]

VEHICLE WATER RESISTANCE

IPX4

TRAVEL SPEED

28km/h

PROTECTION RATE

IP67

Exterior

/ Following the appearance of X series internal combustion forklifts, the series boast smooth and powerful contour lines, and exquisite and compact vehicle body, presenting both fashion and steadiness as a whole.

THE *Plus*
FOR YOUR
BUSINESS



FASTER & MORE EFFICIENCY.

Fast charging makes it possible for the whole vehicle to work continuously, shortening the waiting time and greatly improving efficiency.

Through disruptive battery and fast charging technology, the charging time is greatly shortened.

LI-ION
TECHNOLOGY

6 YEARS
WARRANTY

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

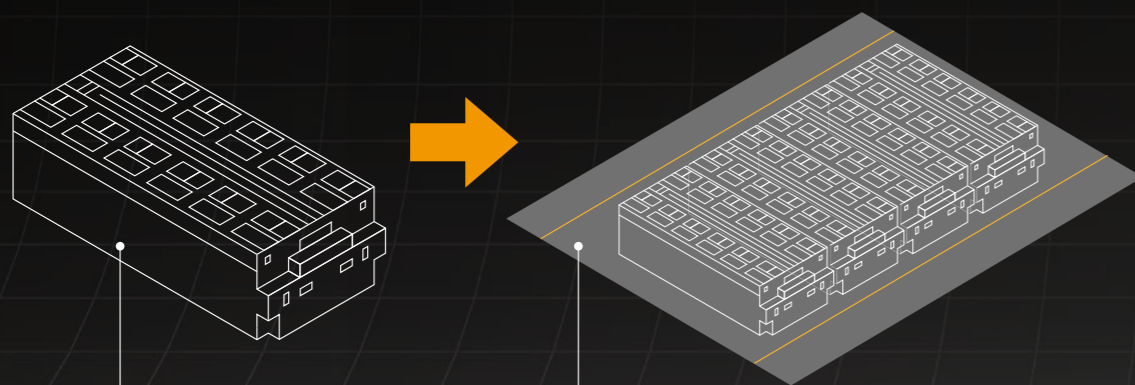
HIGH VOLTAGE
LITHIUM ION



WHAT IS HIGH-VOLTAGE AND WHAT ARE IT'S ADVANTAGES?

Discover the power of Hangcha's 16-ton electric forklift, engineered with a high-voltage lithium battery system at 608V for unmatched efficiency. Designed to operate with lower current, it maximizes power density and optimizes energy usage. Experience extended operational hours and quicker charging times, setting new standards in performance and productivity.

608V
HIGH-VOLTAGE



A MODULE

A collection of cells connected in series or in parallel.

A PACK

A series of individual modules and protection systems organized in a shape that will be installed in a truck.

HIGH-VOLTAGE
ELECTRICAL SYSTEMS ⚡

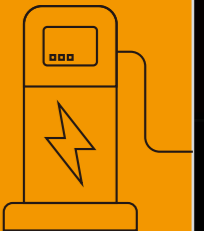
How does our lithium electric forklifts boost performance and efficiency?

01 | Speeds up charging and reduces heat generation.

To shorten charging times, boosting charging power is essential, and there are two ways to achieve this:

1. Increase system voltage **2. Increase current**

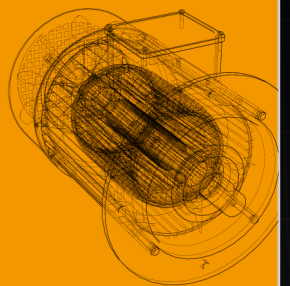
However, increasing the current without adjusting resistance can cause excessive heat, potentially leading to battery overheating. From the standpoint of energy consumption, this heat from the battery pack and high-voltage cables results in greater electrical losses within the system. By raising the voltage, we enhance charging speed while preventing overheating issues in both the battery pack and charging stations. Hangcha's battery system incorporates an advanced independent thermal management system.



02 | Enhance motor efficiency and lower operational costs.

Models equipped with a high-voltage system feature compact yet powerful motors, enhancing motor power density while minimizing heat output from the battery and cables. This reduction in heat leads to lower maintenance costs and allows for the use of slimmer cables, simplifying the wiring layout economically.

Our charging stations benefit from this configuration, eliminating the need for liquid cooling and thereby reducing overhead. They are equipped with Super-Fast Charging Technology that can fully charge the battery in just 1.3 hours.



Hangcha's high-voltage lithium electric forklift boosts charging speed, prolongs battery life, and minimizes costs, providing unparalleled efficiency and value.

LI-ION BATTERIES AND CHARGERS

A built in electronic control circuit for Li-ion battery pack is unique. The BMS(Battery Management System) provides the protection system available to protect and enhance the performance of these batteries. By always keeping the batteries within safe operating conditions, this electronic control ensures that batteries accept more charges than conventional batteries.



Standard Battery and Charging Time

	12 to 16T @600mm	14 to 16T @900mm	18T @600mm	16T @1200mm
Standard Battery (V/Ah)	541/228	608/302	608/302	608/302
Standard Battery (kWh)	123	184	184	184
Number of charging port	1	1	1	1
Charging time (SOC 20-100%/Charger capacity 120kW)	1.0h	1.3h	1.3h	1.3h
Operating Temperature-Discharge (°C)	-30 C ~60 C	-30 C ~60 C	-30 C ~60 C	-30 C ~60 C
Operating Temperature-Charge (°C)	0 C ~60 C	0 C ~60 C	0 C ~60 C	0 C ~60 C
Protection Class	IP67	IP67	IP67	IP67

Optional Battery and Charging Time

	12 to 16T @600mm	14 to 16T @900mm	18T @600mm	16T @1200mm
Optional Battery (V/Ah)	608/302	541/456	541/456	541/456
Optional Battery (kWh)	184	246	246	246
Number of charging port	1	2	2	2
Charging time (SOC 20-100%/Charger capacity 120kW)	1.5h	0.97h	0.97h	0.97h
Operating Temperature-Discharge (°C)	-30 C ~60 C	-30 C ~60 C	-30 C ~60 C	-30 C ~60 C
Operating Temperature-Charge (°C)	0 C ~60 C	0 C ~60 C	0 C ~60 C	0 C ~60 C
Protection Class	IP67	IP67	IP67	IP67

CHARGING STRATEGY

When the charging system is designed with a dual charging gun, the charging distribution can be designed using average distribution mode and automatic distribution mode to efficiently complete charging tasks.

01

Average Distribution Mode: The dual gun output power can be switched online. When Gun A is fully powered, and Gun B is connected and starts charging, the system will switch 50% of the rated power to Gun B while still supplying Gun A until Gun A or Gun B completes charging.

02

Automatic Distribution Mode: Set the first charging interface as the rated power output. Start distributing the power in increments to the second charging interface until the charging station stabilizes. The two charging interfaces can output simultaneously, and the power distribution increments of the charging station are 20 kW. Repeat the above steps until the first charging interface stops charging, and the second charging interface reaches the maximum rated power.



INTEGRATED CHARGER

120kW Product performance:

Operating voltage:
AC380V±15%

Input mode:
Three-phase five-wire system

Output voltage range (V):
200Vdc ~ 1000Vdc

Efficiency: ≥94% **IP Level:** IP54

Working temperature:
-20 C ~ +50 C

Dimension:
750*850*1890(mm)

EXCELLENT ERGONOMIC DESIGN

Comfort

- / The wide-view mast with optimized design is unlikely to obstruct the operator's line of sight. The enlarged opening size of the fork carriage enables a wider view, a large operation space, and excellent ergonomic design.
- / The multifunctional color-screen instruments are designed to have graphical interfaces and display data clearly. The interfaces can be switched to be shown in Chinese and English to meet the needs of customers at home and abroad.
- / The new fully-suspended cab with panoramic view enables a clearer view. Performance of the air conditioner is improved to enable uniform conditioned air blowing from the air outlet and a strong cooling effect. The waterproof, dust-proof, heatproof, soundproof, noise-reducing sealing design improves driving comfort. The molded interior parts enable a more comfortable feel. The integral frame is constituted by profiled steel pipes. The structural parts have higher strength.
- / Integrated handle and pilot remote control allow flexible and accurate operation; hydraulic brake curve is optimized to achieve smooth and easy-to-control braking; suspension seat, following the floating multi-direction adjustable control platform, is comfortable to control.



Maintainability

- / The over-turnable cab and electric tipping cylinder make tipping easier and more labor-saving.
- / The wide-opened hood better facilitate repair and maintenance of electrical components.



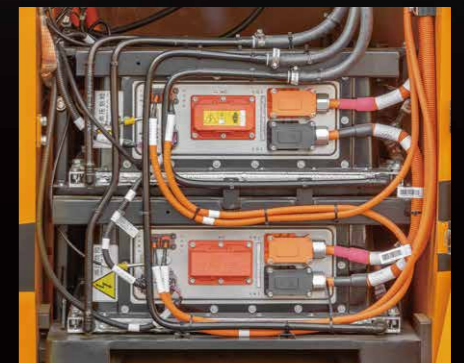
Advancement

- / Both the drive and operating systems are vehicle-grade permanent magnet synchronization systems. The driving speed, upslope degree and acceleration performance rival that of internal combustion vehicles, and the environmental performance is better than that of internal combustion vehicles.
- / The vehicle's 541V high-voltage platform, equipped with a heavy truck water-cooled standard box, features better heat dissipation, longer endurance mileage and more durable battery.
- / This is the first time that the electric control and motor adopt water-cooled control mode, which obtains better heat dissipation, allows long-term and high-intensity work exactly like an internal combustion forklift.
- / The vehicle adopts a whole machine controller to redeploy the traction integrated controller (PDU+DC/DC+MCU) and two-in-one oil pump controller to form an intelligent driving system, being light-weighted, efficient and independent.



Safety

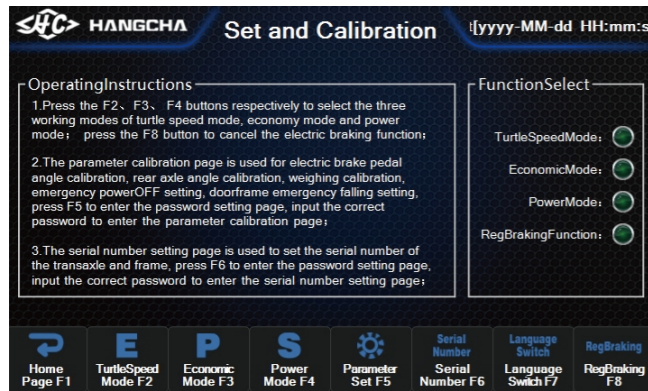
- / The cover of the vehicle is designed to be sealed to the water resistance level of IPX4. All the motor, electronic controls and high-voltage components reach the dust and water resistance level of IP67, a high protection level adequate to withstand harsh operating environments and ensure safety and reliability.
- / The electrical system is equipped with high-voltage interlocks, insulation detection, and vehicle-grade safety means. The MSD (Manual Service Disconnect) maintenance switch enables one-click power-down and safer maintenance.
- / Some key structural parts have been verified highly reliable by the market for many years while being used by internal combustion forklifts.



ENERGY SAVING AND HIGH EFFICIENCY

Braking energy recovery strategy

/ When the gear switch is in N gear or the accelerator pedal is released, the braking energy recovery function is activated, and vehicle decelerates and stops based on braking force and friction (without stepping on the foot brake), and the braking feedback current meets the allowable range of the battery.



Intelligent

/ A vehicle central controller is provided, which has bus architecture, several built-in diagnosis and management functions and a central fault alarm function.

/ An optional intelligent management system is provided to enable intelligent remote monitoring and easier equipment management and logistics management.



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Features

Transmission	Standard	Options
Pneumatic tyre	●	
Solid tyre		○
Steering system		
Fully hydraulic power steering	●	
Centralized lubrication system (machine)		○
Automatic Lubrication System		○
Truck		
Tow pin	●	
Electrostatic discharge chain		○
Rear-view mirror on right & left mudguards	●	
Operating system		
Integrated joystick	●	
Adjustable steering column	●	
Adjustable armrest	●	
Hydraulic system		
Four-way hydraulic valve	●	
Operation proportion control	●	
Cab		
Cabin	●	
Climate control system (air-conditioning and heater)	●	
Manual tilting cabin	●	
Electric tilting cabin	●	
Radio	●	
Sunshade	●	
USB charging interface	●	
Clothes hanger hook	●	
Reading light	●	
1 x 24V power supply		○
1 x 12V power supply		○
License plate frame		○
Fan	●	
Lifting components		
Duplex mast	●	
Standard lifting height	●	
Optional lifting height		○
Standard fork	●	
Other fork specifications		○
Fork hook on type		○
Hydraulic Fork Positioning	●	
Independently-adjustable fork	● (12-16t)	○ (14-18t)
Built in Sideshift	● (14-18t)	○ (12-16t)
Integrated sideshift		○
Emergency descent		○
Other		
Standard color	●	
User defined colour		○
Fire extinguisher (2kg/4kg)		○
Vehicle toolkit	●	
FIMS(Fleet intelligent management system)	●	

Electrical System	Standard	Options
Operator Presense System (OPS) with buzzer	●	
LCD display screen	●	
Main power switch	●	
Emergency power off switch	●	
Maintenance-free 24V lead acid battery	●	
Reverse buzzer	●	
High decible horn	●	
LED lights (entire vehicle)	●	
2 x Working light on front mudguard	●	
2 x Front working light on top of cabin	●	
2 x Rear working light on top of cabin	●	
2 x Working light on both sides of mast		○
Reverse sensor	●	
Rearview camera system	●	
Rearview camera system with memory		○
Front & rearview camera system		○
Front & rearview camera system with memory		○
4 directions camera system with single display		○
4 directions camera recording system with single display		○
In cabin CCTV		○
Rear blue safety light		○
Front and rear blue safety light		○
Three sided blue danger zone light		○
Overspeed alarm		○
Speed limitation		○
Voice reverse alarm		○
Automatic fire suppression system		○
Two-way radio		○
Weight indicator in display		○
Flashing warning light (non rotating) with control switch	●	
Tyre pressure monitoring		○
On-board diagnostics system	●	
Water cooling system for lithium battery	●	
Automatic fire suppression system for lithium battery pack	●	
Manual Service Disconnect (MSD) switch	●	
High voltage interlock	●	
Insulation protection	●	
Power-on self-test	●	
Energy recovery (braking regeneration)	●	
Vehicle Control Unit (VCU)	●	
Turning deceleration		○
Hour meter	●	
Battery charge indicator	●	
Low hydraulic pressure alarm indicator	●	
Hydraulic oil filter warning indicator	●	
Drive mode indicator	●	
Parking brake indicator	●	
Service indicator	●	