

## Features

Truck	Standard	Options
48V permanent magnet synchronous motor	●	
Key switch	●	
Polyurethane traction wheels	●	
Rubber loading wheels	●	
Side charging	●	
Shock absorbing pedal	●	
Multi-layer pedal mat	●	
USB Power Supply	●	
Speed reduction on turning	●	
Battery side out	●	
Battery lifting out	●	
Adjustable backrest	●	
Multi-function steering wheel	●	
Adjustable steering wheel position	●	
Non-detachable hook device	●	
Password lock + Swap card		○
Reflective panel		○
Multi-function bracket		○
Bumper		○
Spare power outlet		○
Rearview mirror		○
Various tow coupling heights		○
Rubber traction wheels		○
600mm width (only available for 3t model)		○
48V125Ah CATL lithium battery		○
48V105Ah EVE lithium battery		○
48V30A, 48V50A charger		○
<b>Controls and instruments</b>		
EPS (Electric Power Steering) system	●	
Systech controller	●	
Multi-function color instrument panel	●	
Inching switch	●	
<b>Safety</b>		
Emergency power-off switch	●	
Horn	●	
Electromagnetic brake	●	
Fire extinguisher		○
Voice reverse beep alarm		○
<b>Lights</b>		
Front combination headlights (Headlights + Turn signals)	●	
Warning light		○
Combination tail lights		○
Blue light		○

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ISO45001:2018



ISO14001:2015



ISO9001:2015



HANGCHA trucks conform  
to the European Safety  
Requirements.



# X SERIES

## ELECTRIC TOW TRACTOR

With capacity of 3,000 to 5,000kg

# X SERIES ELECTRIC TOW TRACTOR

The X Series electric tow tractor is a new generation of products developed by Hangcha specifically for warehouse logistics applications. It adopts advanced permanent magnet synchronous drive technology and a new 48V system, offering advanced performance, comfortable operation, safety and reliability, and low cost of use and maintenance; it is an ideal tool for fields such as automobile manufacturing and logistics transportation.



## TOTAL COMFORT

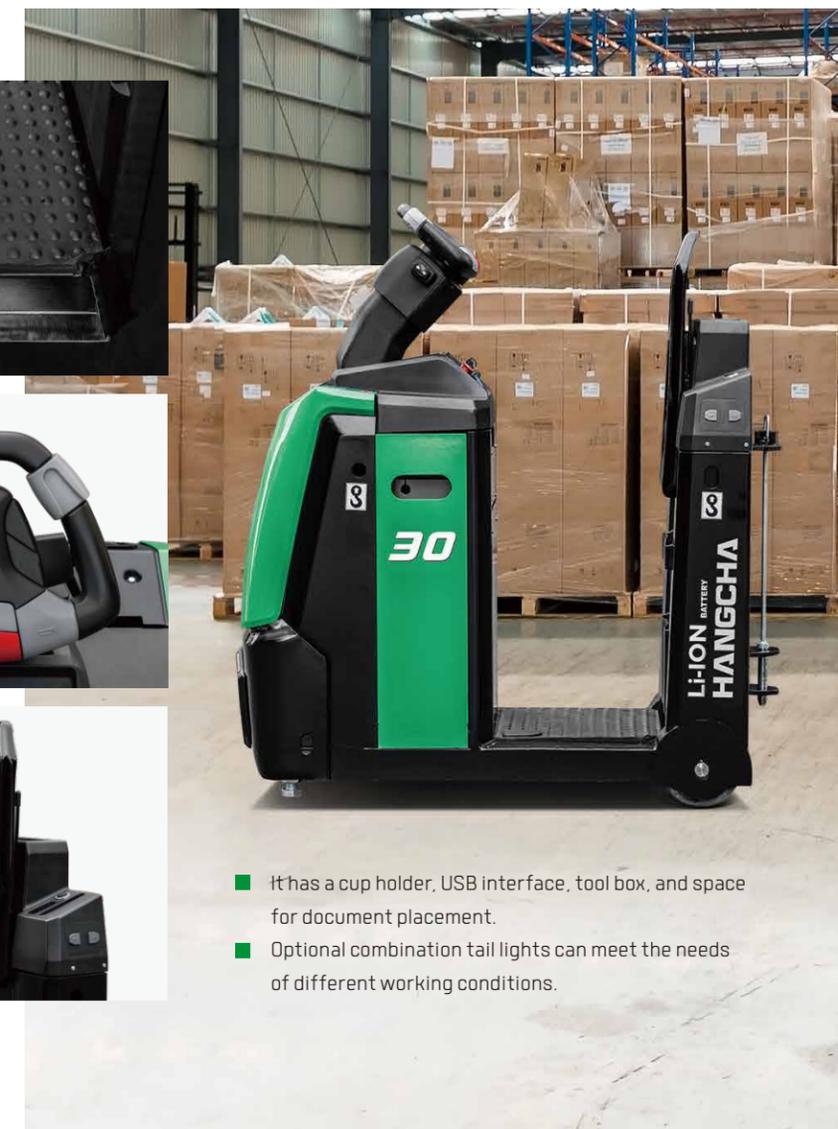
The pedal adopts a floating shock absorption design, greatly improving the comfort of standing and riding, and reducing fatigue from long-term driving.



The newly developed multifunctional steering wheel is more in line with the driving habits of the tractor; the steering wheel can be infinitely adjusted (height + angle) to suit different operators.



The backrest can be adjusted in height, offering high comfort.



- It has a cup holder, USB interface, tool box, and space for document placement.
- Optional combination tail lights can meet the needs of different working conditions.

## MAINTENANCE

- The permanent magnet synchronous motor requires no maintenance.
- The optimized design of the driving wheel and loading wheel assembly makes it easy to replace the wheels.
- The multifunctional interactive instrument can directly view fault information.



The hood can be fully opened, and the components are clear at a glance, making the maintenance of the truck very convenient.



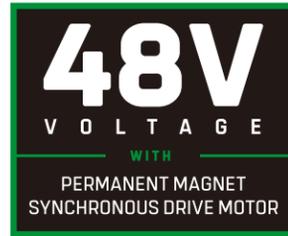
## APPEARANCE

- The X Series electric tow tractor features a professional exterior design with a family and series-oriented consideration. The whole truck has smooth lines and is dynamic.
- It fully considers ergonomics and conforms to the latest design trends.



# REVOLUTIONARY PERFORMANCE

- Standard EPS(Electric Power Steering) makes the control lighter and more flexible, and the steering angle can automatically return to the neutral position, making operation more convenient.
- Equipped with a **48V permanent magnet synchronous drive system**, it has excellent performance and low energy consumption.



Equipped with a multifunctional instrument that offers various modes for users to choose from in different working conditions; it can display various working status parameters.

Standard high-power driving motor, with high traveling speed and strong traction performance.

**9.0 km/h**  
Travel speed (laden)(3.0t)

**4%**  
Gradeability (laden)

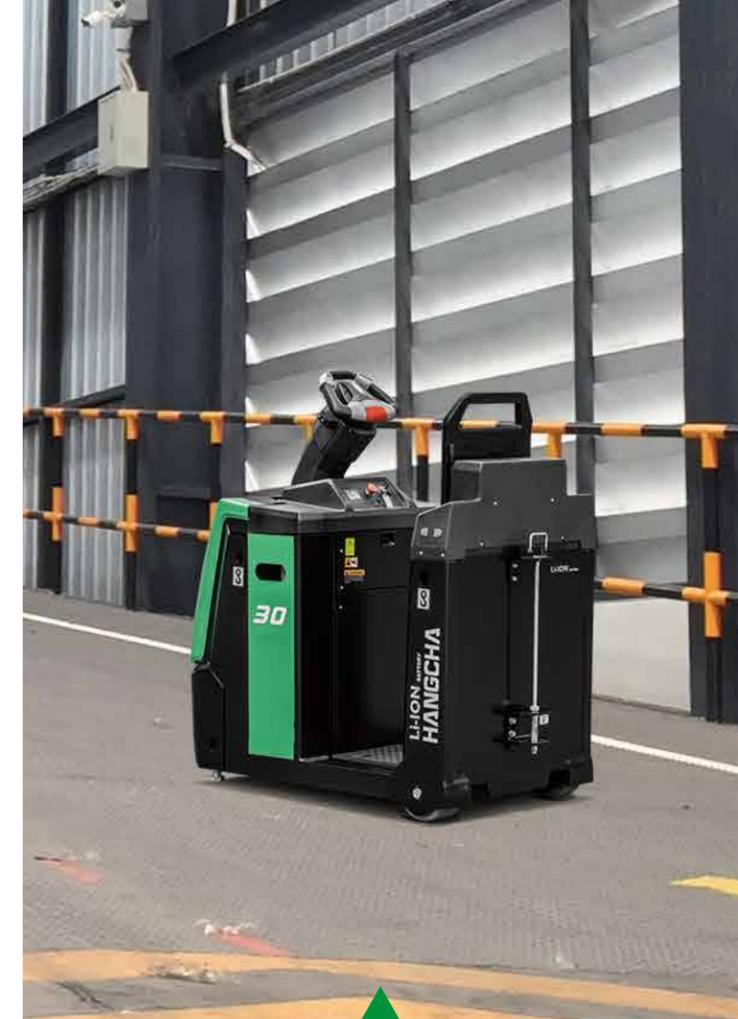
# RUGGED ON THE OUTSIDE

- The design of high-strength frame structure can meet various working conditions and has a long service life.
- Waterproof connectors are used, and all wires and cables are reliably protected, greatly improving the reliability of the electrical system.
- It adopts a three-point chassis design, equipped with a side support system, which is safe and reliable.
- The integrated metal cover can resist external impacts.



## SAFETY

- It has release braking, reverse braking, and emergency braking functions to ensure driving safety.
- Standard cornering deceleration improves driving safety.
- It has a pedal safety switch to effectively prevent misoperation.



It has a anti-slip function to ensure operation safety.



The battery is standard with side charging, which is convenient and fast; the battery can be lifted and removed from the side, making replacement convenient.



Standard non-detachable tow coupling device, which improves the operation efficiency of the truck.



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

**6 YEARS 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 80% 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.



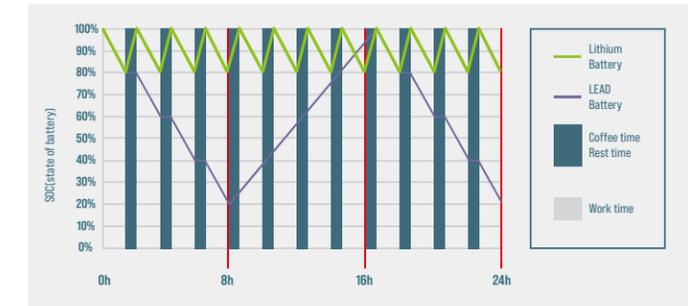
### High energy density

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

## FEATURES & BENEFITS THE HANGCHA DIFFERENCE

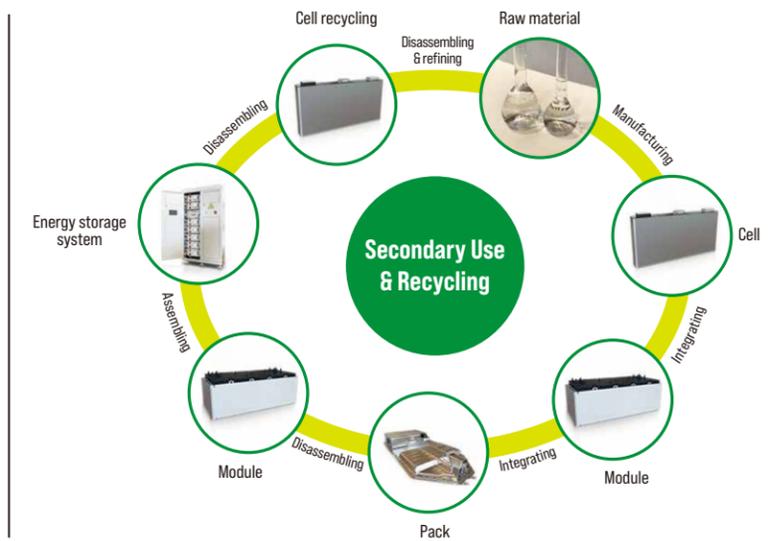
### Efficiency

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: 0 C - 65 C  
Discharge temperature: -30 C - 65 C  
Storage environment temperature: -30 C - 60 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 monitors the cells at all time. 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