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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



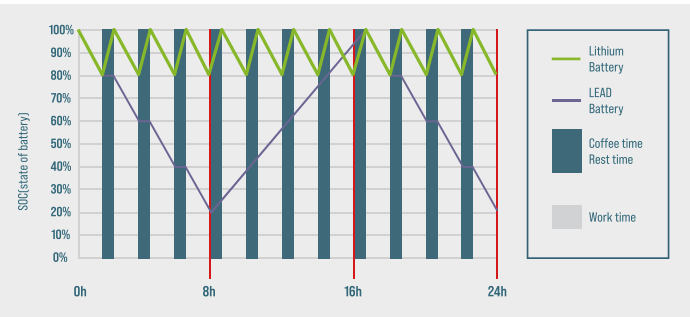
Li
Lithium

POWER THE POSSIBILITIES
RELIABLE LITHIUM-ION TECHNOLOGY

FEATURES & BENEFITS THE HANGCHA DIFFERENCE

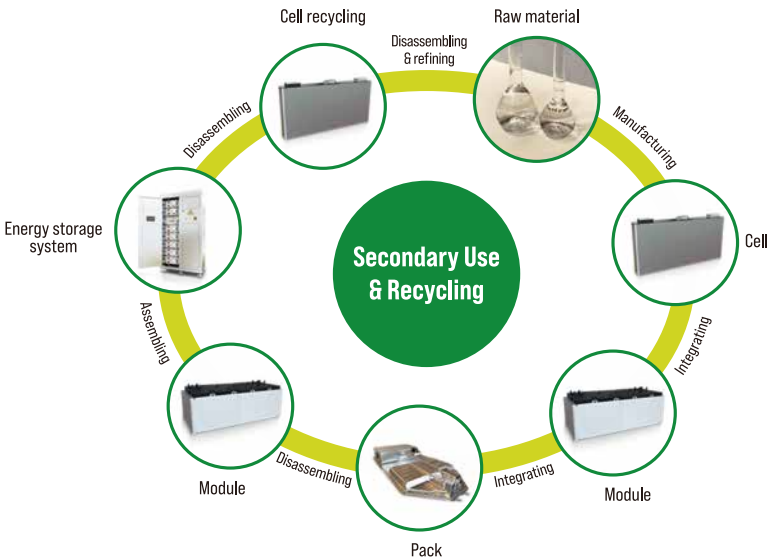
Efficiency

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

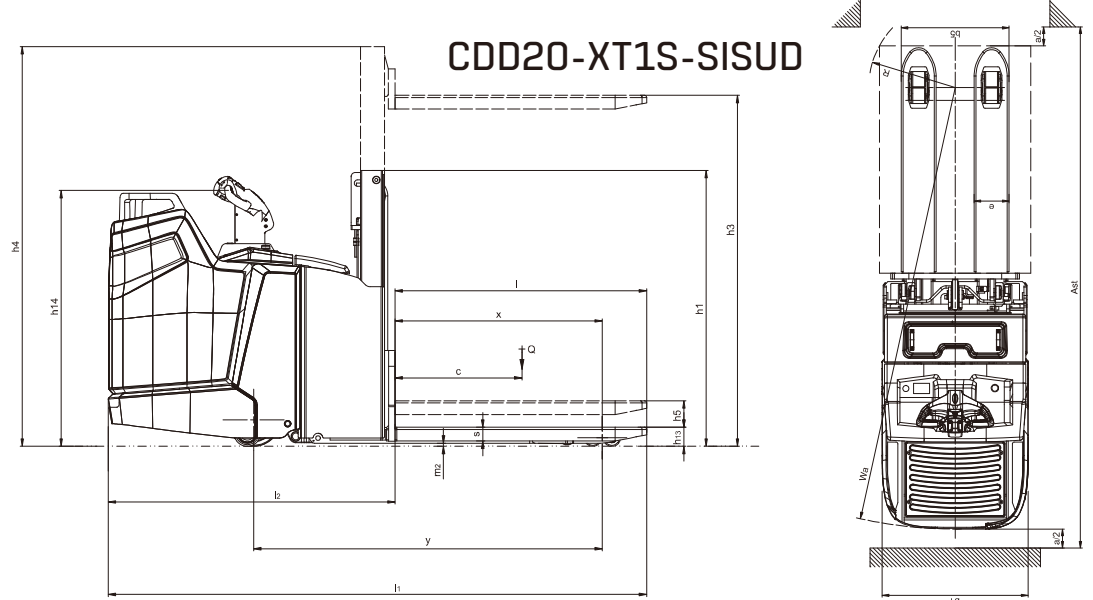
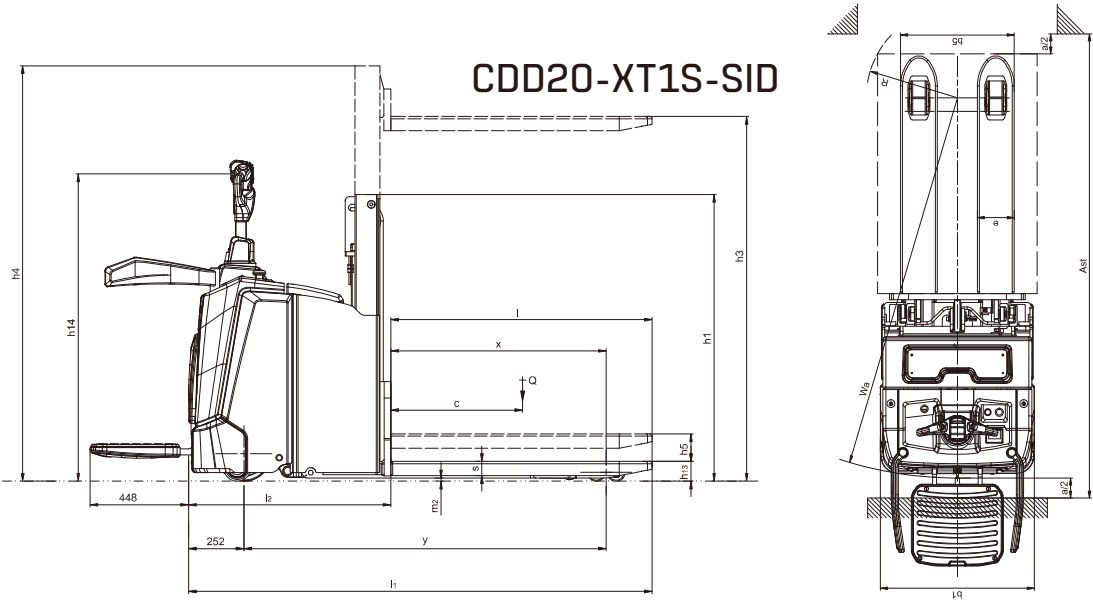
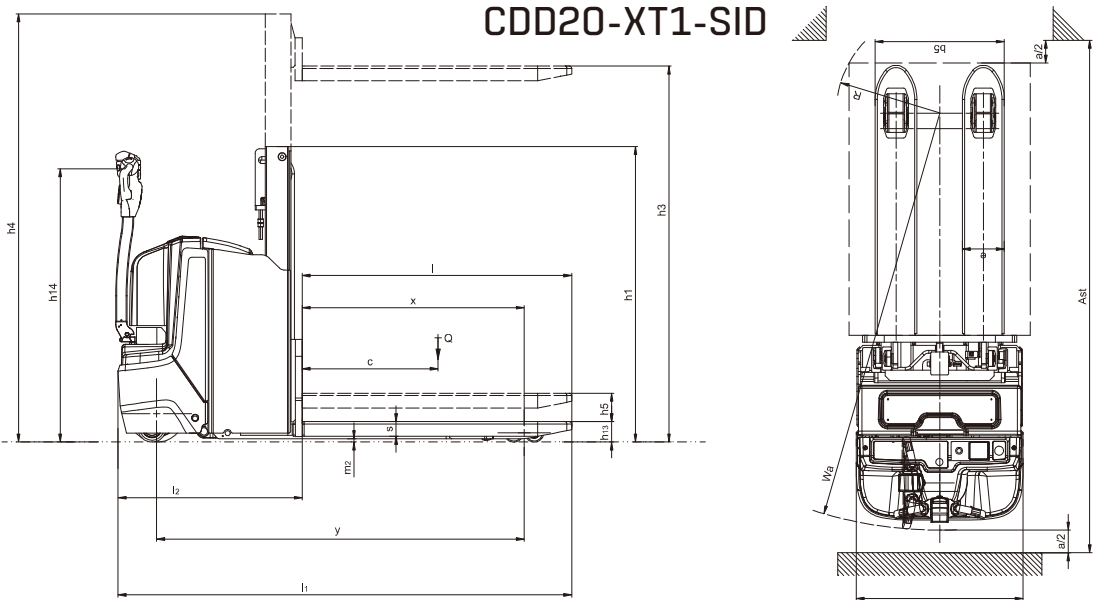
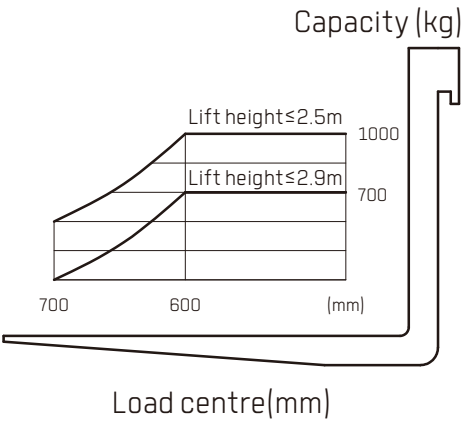
Technical data

Distinguishing mark	1.1	Manufacturer (abbreviation)		HANGCHA GROUP CO.,LTD.		
	1.2	Manufacturer's type designation		CDD20-XT1-SID	CDD20-XT1S-SID	CDD20-XT1S-SISUD
	1.3	Drive: electric (battery type, mains, ...), diesel, petrol, fuel gas		Electric	Electric	Electric
	1.4	Operator type: hand, pedestrian, standing, seated, order-picker		pedestrian	standing	standing
	1.5	Capacity/load	kg	2000	2000	2000
	1.51	Rated capacity/load with mast lift	kg	1000	1000	1000
	1.52	Rated capacity/load with support arm lift	kg	2000	2000	2000
	1.6	Load centre distance	c (mm)	600	600	600
	1.8	Load distance, centre of drive axle to fork	x (mm)	912/980	912/980	912/980
Weight	1.9	Wheelbase	y (mm)	1555/1623	1582/1650	1582/1650
	2.1	Service weight	kg	840	970	1030
	2.2	Axle loading, laden front/rear	kg	970/1870	1310/1660	1400/1630
Tyres / chassis	2.3	Axle loading, unladen front/rear	kg	590/250	710/260	800/230
	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		PU	PU	PU
	3.2	Tyre size, front		Ø250×80	Ø250×80	Ø250×80
Dimensions	3.3	Tyre size, rear		Ø83×73	Ø83×73	Ø83×73
	3.4	Additional wheels (dimensions)		Ø125×50	Ø125×50	Ø125×50
	3.5	Wheels, number front/rear (x = driven wheels)		1x+2/4	1x+2/4	1x+2/4
	3.6	Tread, front	b10 (mm)	475	505	505
	3.7	Tread, rear	b11 (mm)	385	385	385
	4.2	Height, mast lowered	h1 (mm)	1305	1305	1305
	4.3	Free lift	h2 (mm)	90	90	90
	4.4	Lift	h3 (mm)	1660	1660	1660
	4.5	Height, mast extended	h4 (mm)	2115	2115	2115
Performance data	4.6	Initial lift	h5 (mm)	125	125	125
	4.9	Height drawbar in driving position min./max.	h14 (mm)	790/1205	1170/1400	1250
	4.15	Height, lowered	h13 (mm)	90	90	90
	4.19	Overall length	l1 (mm)	2004	2111	2547
	4.20	Length to face of forks	l2 (mm)	814	921	1357
	4.21	Overall width	b1/b2 (mm)	735	770	770
	4.22	Fork dimensions DIN ISO 2331	s/e/l (mm)	65/185/1190	65/185/1190	65/185/1190
	4.25	Fork spread	b5 (mm)	570	570	570
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	15	15	15
Electric-engine	4.34.1	Aisle width for pallets 1000 × 1200 crossways	Ast (mm)	2248 ¹⁾²⁾	2313 ¹⁾²⁾	2741 ¹⁾²⁾
	4.34.2	Aisle width for pallets 800 × 1200 lengthways	Ast (mm)	2258 ²⁾³⁾	2323 ²⁾³⁾	2751 ²⁾³⁾
	4.35	Turning radius	Wa (mm)	1770 ⁴⁾	1840 ⁴⁾	2265 ⁴⁾
Performance data	5.1	Travel speed, laden/unladen	km/h	6/6	9.5/12.5	9.5/12.5
	5.2	Lift speed, laden/unladen	m/s	0.190/0.350	0.190/0.350	0.190/0.350
	5.3	Lowering speed, lade/unladen	m/s	0.450/0.350	0.450/0.350	0.450/0.350
Electric-engine	5.8	Max. gradeability, laden/unladen	%	10/16	8/16	8/16
	5.10	Service brake		Regenerative	Regenerative	Regenerative
	6.1	Drive motor rating S2 60 min	kW	2.2	2.2	2.2
Electric-engine	6.2	Lift motor rating at S3 15 %	kW	4.2	4.2	4.2
	6.4	Battery voltage/nominal capacity	(V)/[Ah] or kWh	48/105	48/105	48/105
	6.5	Battery weight	kg	60	60	60

Note: 1) According to VDI2198 standard+392mm. 2) According to VDI2198 standard+238mm. 3) Triplex mast +l8mm 4) Lowering+68mm

2.0t Mast Specification

Mast type	Max Lifting Height h3	Max.fork height [h3+h13]	Mast lowered h1	Mast extended h4
	mm	mm	mm	mm
Single cylinder duplex mast	1660	1750	1305	2115
	2010	2100	1480	2465
	2100	2190	1525	2555
	2560	2650	1755	3015
	2900	2990	1925	3355
Single cylinder triplex mast	2050	2140	1210	2580
	2350	2440	1310	2880
	2500	2590	1360	3030
	2905	2995	1495	3435



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/105Ah 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/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		○

