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to the European Safety Requirements



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# **X SERIES**

## **ELECTRIC 4-WAY REACH TRUCK**

The 2-3-ton multi-lateral electric forklift can be driven in the modes of straight movement, sideways movement and 360° rotation in situ, etc. It is suitable for places with the need of handling and stacking large and long materials, such as pipes, sheets and wires, and can meet the needs of customers for operations in narrow aisles and high stacking heights.



# DESIGNED AROUND YOU

### **HIGH EFFICIENCY**

- The narrow aisles required for handling long stacking materials maximize the space availability of your warehouses.
- A high-power oil pump motor is used. The large-displacement silent gear pumps improve the lifting and descending speed of the fork, as well as its operating efficiency.
- The four-pivot articulated drive and steering axles allow higher passing ability, thus suitable for indoor and outdoor operation.
- The brake kinetic energy regeneration system enables the battery to support longer operating hours after being charged once

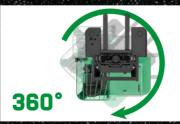


The mast can be moved forward and backward, and equipped with distance adjusting forks, stacking efficiency is improved.

## **SPACE SAVING**

Allowing straight movement, sideways movement, 360° rotation in situ and a small turning radius, the stacker can operate in narrow aisles.





By traveling sideways, even the truck with lengthy load can move through narrow aisle close to the vehicle length.





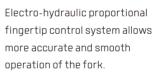
Sideways travel mode



## **COMFORT**

- The ergonomically arranged joystick, instruments and switches make operations more comfortable and flexible.
- The suspended cab allows more secure and comfortable operation.
- Electric steering makes steering more gentle and comfortable, and steering mode switching is easier and faster.
- A new integrated instrument cluster has complete functions and clear readings.







The joystick can be adjusted from top to bottom and from front to rear according to the operator's using habits.

With several speed gears, the vehicle is adapted to different operating conditions.







(Power)



( [

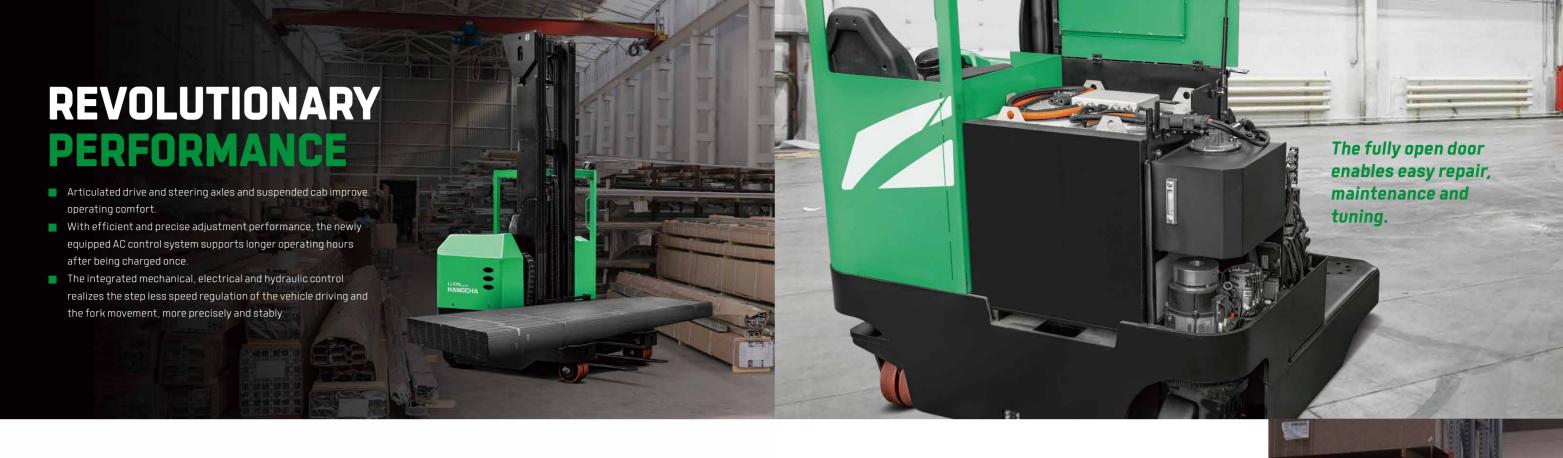
## **STABILITY**

Wide body structure design allows the stacker to have good stability.

Overall width

1,850<sub>mm</sub>







# MADE FOR EASY MAINTENANCE

The brushless AC motor is maintenance-free and significantly reduces the operating cost.



The battery removed from a side of the vehicle enables easy repair and maintenance of the battery.



The electronically controlled electrical components are placed together and highly integrated.

# RELIABILITY AND SAFETY

- The four-pivot low center of gravity design and the design high strength of the main force-bearing components of the frame are appropriate to heavy load operating conditions.
- The efficient AC power system has complete protection functions and greatly improved reliability and service life.



The main electrical components such as the motor controller, contactor, power plug and emergency cut-off switch are all products of well-known foreign brands.



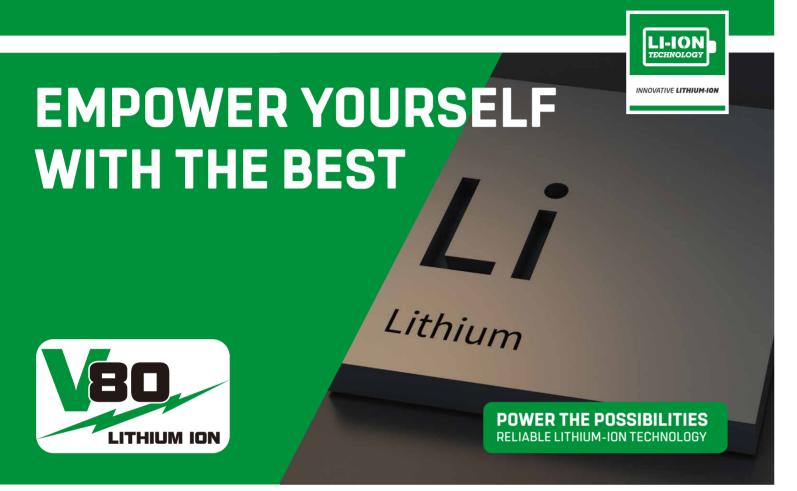
The safety pedals eliminate the safety hazard arising from the operator's incorrect operations.



The front and rear wheel braking systems that allow large braking torque are suitable for indoor and outdoor slippery roads to let the operator drive more safely.



# LITHIUM POWERED



## 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-lon battery ensures long working times and increases the high availability.



### Cold area application

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



### High safety and reliability

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



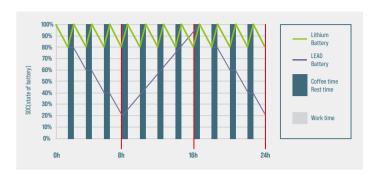
### Opportunity charging

Full performance during several shifts thanks to effective interim charging.

# FEATURES & BENEFITS THE HANGCHA DIFFERENCE

## **Efficiency**

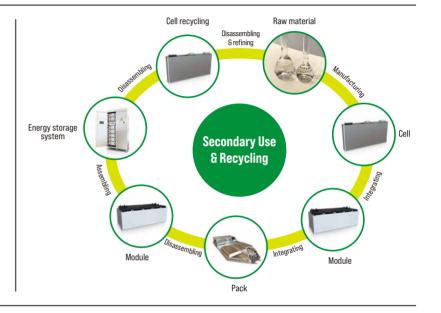
By quick opportunity charging any downtime, such as a lunch break, can be efficiently used and the battery is recharged in a very short period of time. Interim charging does not affect the battery service life.



## 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.





## 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.



## 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.



## 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

## Optional battery list

Battery Type	Voltage	Capacity	Model
Battery Type	V	Ah	ividdei
		300	CCD2O-XC5-D ●
			CCD20-XC5-D ○
	80	360	CCD25-XC5-D ●
Lead-acid			CCD30-XC5-D ●
			CCD20-XC5-D o
		440	CCD25-XC5-D o
			CCD30-XC5-D o
		250	CCD2O-XC5-ID●
			CCD20-XC5-IDo
	346	346	CCD25-XC5-ID ●
Lithium	80		CCD30-XC5-ID●
			CCD20-XC5-IDo
		456	CCD25-XC5-IDO
			CCD30-XC5-IDo





## **Mast Specification**

	Model	Model	Model	Model	Model	Lifting Lowered Free lift Max. lift Model height height		Fork dimensions DIN ISO 2331	Fork spread	Load Capacity at 600mm		
									CCD20	CCD25	CCD30	
		h3(mm)	h1(mm)	h2(mm)	h4(mm)	b3(mm)	s / e / I (mm)	b5(mm)	kg	kg	kg	
Duplex mast	XCD30M400	4000	2960	70	5005	930	45/122/1150	310-790	2000	2500	3000	
D E	XCD30M450	4500	3210	70	5505	930	45/122/1150	310-790	2000	2500	2900	
	XCD30N400	4000	2510	1800	5005	930	45/122/1150	310-790	2000	2500	3000	
	XCD30N450	4500	2660	1950	5505	930	45/122/1150	310-790	2000	2500	2900	
	XCD30N500	5000	2810	2100	6005	930	45/122/1150	310-790	2000	2500	2800	
	XCD30N550	5500	2995	2285	6505	930	45/122/1150	310-790	2000	2500	2650	
ž +	XCD30N600	6000	3160	2450	7005	930	45/122/1150	310-790	2000	2350	2500	
Triplex mast	XCD30N650	6500	3425	2715	7505	930	45/122/1150	310-790	1900	2200	2350	
	XCD30N700	7000	3595	2885	8005	930	45/122/1150	310-790	1800	2000	2200	
	XCD30N750	7500	3860	3150	8505	930	45/122/1150	310-790	1600	1750	2000	
	XCD30N800	8000	4020	3310	9005	930	45/122/1150	310-790	1400	1500	1800	
	XCD30N850	8500	4280	3570	9505	930	45/122/1150	310-790	1150	1250	1500	

## Mast Specification (Widened fork carriage)

	Model	Lifting height	Lowered	Free lift height	Max. lift height	Fork frame width	Fork dimensions DIN ISO 2331	Fork spread	Load	1 Capacity at 60	Dmm
									CCD20	CCD25	CCD30
		h3(mm)	h1(mm)	h2(mm)	h4(mm)	b3(mm)	s / e / I (mm)	b5(mm)	kg	kg	kg
	XCD30N400-501	4000	2510	1460	5005	2310	50/122/1150	460-2140	2000	2500	3000
	XCD30N450-501	4500	2660	1610	5505	2310	50/122/1150	460-2140	2000	2500	2800
	XCD30N500-501	5000	2810	1760	6005	2310	50/122/1150	460-2140	2000	2400	2600
	XCD30N550-501	5500	2995	1945	6505	2310	50/122/1150	460-2140	2000	2300	2350
Triplex mast	XCD30N600-501	6000	3160	2110	7005	2310	50/122/1150	460-2140	1900	2100	2300
i <sup>T</sup> B	XCD30N650-501	6500	3425	2375	7505	2310	50/122/1150	460-2140	1750	1900	2100
	XCD30N700-501	7000	3595	2545	8005	2310	50/122/1150	460-2140	1600	1700	1900
	XCD30N750-501	7500	3860	2810	8505	2310	50/122/1150	460-2140	1400	1500	1700
	XCD30N800-501	8000	4020	2970	9005	2310	50/122/1150	460-2140	1200	1300	1500
	XCD30N850-501	8500	4280	3230	9505	2310	50/122/1150	460-2140	900	1000	1200

## Technical data (Lithium Battery)

	1.1	Manufacturer (abbreviation)		H	HANGCHA GROUP CO.,LTD.	
	1.2	Manufacturer's type designition		CCD20-XC5-ID	CCD25-XC5-ID	CCD30-XC5-ID
_	1.3	Drive: electric		Electric	Electric	Electric
shing A	1.4	Operator type		Seated	Seated	Seated
Distinguishing mark	1.5	Rated capacity/rated load	Q (kg)	2000	2500	3000
Dis	1.6	Load centre distance	c (mm)	600	600	600
	1.8	Load distance, centre of drive axle to fork	x (mm)	257	257	257
	1.9	Wheelbase	y (mm)	1477	1477	1477
Weight	2.1	Service weight(incl.battery)	kg	3960	4040	4200
	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		polyurethane	polyurethane	polyurethane
	3.2	Tyre size, front	Φmm×mm	250x75/285x100(2)	250x75/285x100(2)	250x75/285x100(2)
ssis	3.3	Tyre size, rear	Φmm×mm	406x152	406x152	406x152
Tyres, chassis	3.4	Additional wheels(dimensions)	Φmm×mm	250x75(2)	250x75(2)	250x75(2)
Tyre	3.5	Wheels, number front/rear (* = driven wheels)		2/2(1x)	2/2(1x)	2/2(1x)
	3.6	Tread, front	b10(mm)	1450	1450	1450
	3.7	Tread, rear	b11(mm)	1372	1372	1372
	4.1	Tilt of mast/fork carriage forward/backward	α/β(°)	3/6	3/6	3/6
	4.2	Height, mast lowered	h1(mm)	2960	2960	2960
	4.3	Free lift	h2(mm)	70	70	70
	4.4	Lift	h3(mm)	4000	4000	4000
	4.5	Height, mast extended	h4(mm)	5005	5005	5005
	4.7	Height of overhead guard	he(mm)	2350	2350	2350
	4.8	Seat height relating to SIP/stand height	h7(mm)	1185	1185	1185
	4.10	Height of wheel arms	hs(mm)	390	390	390
suc	4.19	Overall length	l1(mm)	2351	2351	2351
Dimensions	4.20	Length to face of forks	I2(mm)	1201	1201	1201
ä		Overall width	b1(mm)	1850	1850	1850
	4.22	Fork dimensions DIN ISO 2331	s/e/I(mm)	45/122/1150 <sup>1)</sup>	45/122/1150 <sup>1)</sup>	45/122/1150 <sup>1)</sup>
	4.24	Fork-carriage width	p3(mm)	9301)	9301)	9301)
	4.25	Fork spread	bs(mm)	310-790 <sup>1)</sup>	310-790 <sup>1)</sup>	310-790 <sup>1)</sup>
	4.26	Distance between wheel arms/loading surfaces	b4(mm)	950	950	950
	4.28	Reach distance	I4(mm)	690	690	690
	4.32	Ground clearance, centre of wheelbase	m2(mm)	100	100	100
		Aisle width for pallets 1200 × 6000 crossways	Ast(mm)	26012)	26012)	26012
	4.35	Turning radius	Wa(mm)	1873 Straight mode)/1	1850(Sideways travel mode)/1	520(360° travel mode)
	4.37	Length across wheel arms	I7(mm)	1900	1900	1900
	5.1	Travel speed, laden/unladen	km/h	11.5/12	11/12	10.5/12
	5.2	Lift speed, laden/unladen	mm/s	0.32/0.55	0.32/0.55	0.32/0.55
ance	5.3	Lowering speed, lade/unladen	mm/s	0.535/0.535	0.535/0.535	0.535/0.535
Performance data	5.4	Reaching speed, laden/unladen	mm/s	140/160	140/160	140/160
D.	5.8	Max. gradeability, laden/unladen	%	9/12	9/12	9/12
	5.10	Service brake		Electronic	Electronic	Electronic
		Parking brake		Electronic	Electronic	Electronic
	6.1	Drive motor rating S2 60 min	kW	8.1	8.1	8.1
	6.2	Lift motor rating at S3 15 %	kW	21	21	21
Electric- engine	6.3	Battery according to DIN 43531/35/36 A, B, C, no		no	no	no
	6.4	Battery voltage/nominal capacity K5	(V)/(Ah) or kWh	80/250	80/346	80/346
		Battery weight	kg	400	400	400

Note: 1] Standard fork carriage, if the lenght of pallet > 3m, it is recommended to choose widened fork carriage [see the mast specification for details]

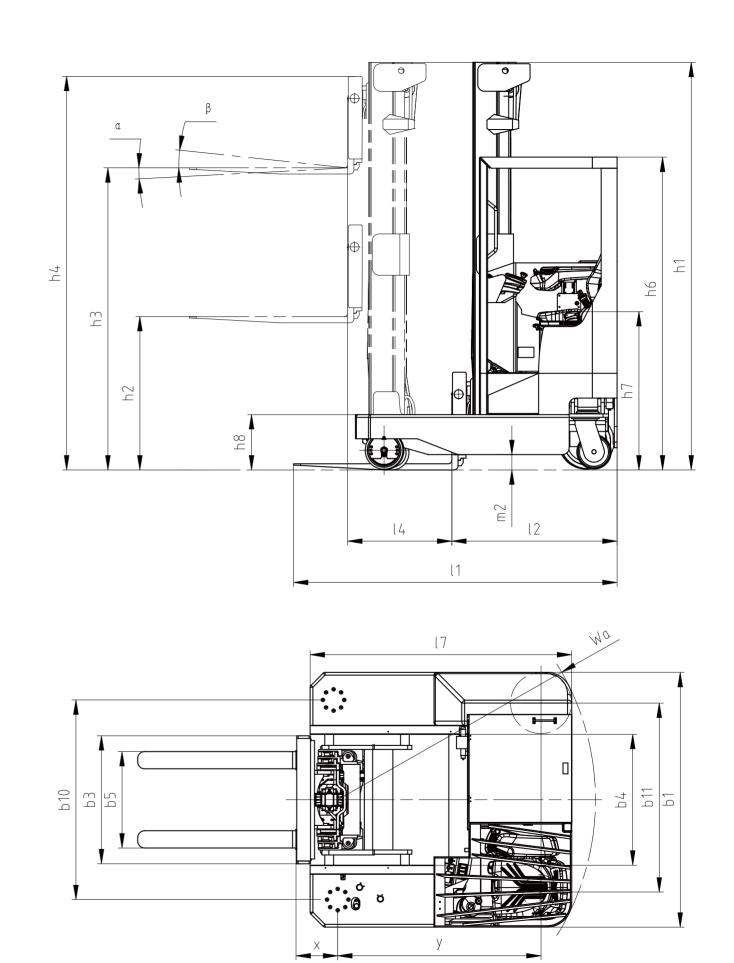
<sup>2]</sup>When stacking with sideways travel mode, it is important to reserve an adequate safety height at the bottom layer of the shelves to facilitate the storage and retrieval of goods.

## Technical data (Lead-acid Battery)

	1.1	Manufacturer (abbreviation)			HANGCHA GROUP CO.,LTD.	
	1.2	Manufacturer's type designition		CCD2O-XC5-D	CCD25-XC5-D	CCD30-XC5-D
	1.3	Drive: electric		Electric	Electric	Electric
shing	1.4	Operator type		Seated	Seated	Seated
Distinguishing mark	1.5	Rated capacity/rated load	Q (kg)	2000	2500	3000
Dist	1.6	Load centre distance	c (mm)	600	600	600
	1.8	Load distance, centre of drive axle to fork	x (mm)	257	257	257
	1.9	Wheelbase	y (mm)	1477	1477	1477
Weight	2.1	Service weight(incl.battery)	kg	3920	4000	4150
	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		polyurethane	polyurethane	polyurethane
	3.2	Tyre size, front	Φmm∗mm	250x75/285x100(2)	250x75/285x100(2)	250x75/285x100(2)
SSiS	3.3	Tyre size, rear	Φmm×mm	406x152	406x152	406x152
Tyres, chassis	3.4	Additional wheels(dimensions)	Φmm∗mm	250x75(2)	250x75(2)	250x75(2)
Tyre	3.5	Wheels, number front/rear (x = driven wheels)		2/2(1x)	2/2(1x)	2/2(1x)
	3.6	Tread, front	b10(mm)	1450	1450	1450
	3.7	Tread, rear	b11(mm)	1372	1372	1372
	4.1	Tilt of mast/fork carriage forward/backward	α/β(°)	3/6	3/6	3/6
	4.2	Height, mast lowered	h1(mm)	2960	2960	2960
	4.3	Free lift	h2(mm)	70	70	70
	4.4	Lift	ha(mm)	4000	4000	4000
	4.5	Height, mast extended	h4(mm)	5005	5005	5005
	4.7	Height of overhead guard	he(mm)	2350	4000 400 5005 500 2350 23 1185 110 390 39 2351 23	2350
	4.8	Seat height relating to SIP/stand height	h7(mm)	1185	1185	1185
	4.10	Height of wheel arms	ha(mm)	390	390	390
Su	4.19	Overall length	lı(mm)	2351	2351	2351
Dimensions	4.20	Length to face of forks	I2(mm)	1201	1201	1201
Ë		Overall width	b1(mm)	1850	1850	1850
	4.22	Fork dimensions DIN ISO 2331	s/e/I(mm)	45/122/1150 <sup>1</sup>	45/122/1150 <sup>1)</sup>	45/122/1150 <sup>1)</sup>
	4.24	Fork-carriage width	p3(mm)	9301)	9301)	9301)
	4.25	Fork spread	bs(mm)	310-790 <sup>1)</sup>	310-790 <sup>1)</sup>	310-790 <sup>1)</sup>
	4.26	Distance between wheel arms/loading surfaces	b4(mm)	950	950	950
	4.28	Reach distance	I4(mm)	690	690	690
	4.32	Ground clearance, centre of wheelbase	m2(mm)	100	100	100
		Aisle width for pallets 1200 x 6000 crossways	Ast(mm)	2601 <sup>2)</sup>	2601 <sup>2)</sup>	2601 <sup>2)</sup>
	4.35	Turning radius	Wa(mm)	1873(Straight mode)/	1850(Sideways travel mode)/1	520(360° travel mode)
	4.37	Length across wheel arms	I7(mm)	1900	1900	1900
	5.1	Travel speed, laden/unladen	km/h	11.5/12	11/12	10.5/12
	5.2	Lift speed, laden/unladen	mm/s	0.32/0.55	0.32/0.55	0.32/0.55
auce	5.3	Lowering speed, lade/unladen	mm/s	0.535/0.535	0.535/0.535	0.535/0.535
Performance data	5.4	Reaching speed, laden/unladen	mm/s	140/160	140/160	140/160
Per	5.8	Max. gradeability, laden/unladen	%	9/12	9/12	9/12
	5.10	Service brake		Electronic	Electronic	Electronic
		Parking brake		Electronic	Electronic	Electronic
	6.1	Drive motor rating S2 60 min	kW	8.1	8.1	8.1
ს თ	6.2	Lift motor rating at S3 15 %	kW	21	21	21
Electric- engine	6.3	Battery according to DIN 43531/35/36 A, B, C, no		no	no	no
□ □	6.4	Battery voltage/nominal capacity K5	(V)/(Ah) or kWh	80/300	80/360	80/360
		Battery weight	kg	790	870	870

Note: 1)Standard fork carriage, if the lenght of pallet >3m, it is recommended to choose widened fork carriage (see the mast specification for details)

2)When stacking with sideways travel mode, it is important to reserve an adequate safety height at the bottom layer of the shelves to facilitate the storage and retrieval of goods.



# Features

Mast	Standard	Optio
Standard duplex mast	•	
See the Configuration Table of the Mast		0
Fork and attachment		
Standard fork	•	
Fork carriage	•	
Load backrest	•	
Fork positioner Non-standard series fork	•	
Various attachments		0
Light		O
LED headlight  Common alarm lamp	•	0
Acoustic and optical alarm lamp		0
LED rear lamp		0
Blue lamp		0
Straight projection lamp		0
Horn		
Electric horn	•	
Reversing buzzer	•	
Safety configuration		
Fuse box	•	
OPS system	•	
Safety pedal	•	
Main power switch	•	
Reversing radar		0
Fire extinguisher Speed limit alarm device		0
		0
Driving space		
Standard overhead guard	•	
Steering wheel adjusting device Anti-skid boarding step	•	
Boarding handle	•	
Electric fan		0
Left and right rearview mirrors		0
Seat		
Standard safety belt seat	•	
Fully-suspended seat		0
Electronic steering		
Electronic steering	•	
	•	
Other standard configuration		
Self-locking valve in the tilting fuel circuit	•	
Speed limit valve in the lifting fuel circuit	•	
Hydraulic oil fine filter	•	
Particular market		
CE standard		0
Control mode		
Fingertip system	•	
Instrument rack space		
Smart color-screen instrument (speed mode selection)	•	
Tires		

