

LI-ION
TECHNOLOGY

INNOVATIVE LITHIUM-ION

XH SERIES HIGH-VOLTAGE LITHIUM BATTERY FORKLIFT

with capacity of 12,000 to 16,000kg



The World of Hangcha



HANGCHA

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

541 V

SPEED MODELS

3

MAX. GRADEABILITY

30%

TRAVEL SPEED

27km/h

WATER RESISTANCE

IPX4

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



**COMMITTED TO
IMPROVING**



MORE FASTER. MORE EFFICIENCY.

Compared with low-voltage lithium battery forklifts, high-voltage lithium battery technology can save about 40% of the overall cost during the service cycle.

40%

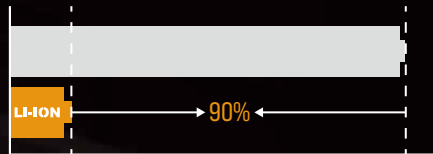
Low Voltage Lithium Battery Forklift
Hangcha High Voltage Lithium Electric Forklift



Compared with fuel forklifts, high-voltage lithium battery technology can save about 90% of the overall cost during the service cycle.

90%

Fuel Forklift
Lithium Electric Forklift



4000

CYCLES OF CHARGING



Under normal charging and discharging conditions, the lithium battery of Hangcha products has a capacity retention rate of more than 75% and a life span of up to 10 years after 4000 cycles of charging and discharging.

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

Get the battery fully charge:



1.5h

Hangcha High Voltage Electric Forklift



10h

Electric Forklift

POWER PERFORMANCE COMPARISON

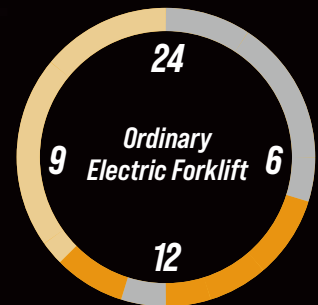
	High Voltage Lithium Electric Forklift	Fuel Forklift
Travel speed, laden/unladen	26/27km/h	15-20km/h
Lift speed, laden/unladen	400/500mm/s	430/470mm/s
Max. gradeability, S2=5min, laden/unladen	30%	15%-20%

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

Working time Charging time Idle time



Charge for 1.5 hour, work for 6 hours



Slow charging, need spare battery, high cost, complicated management

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.



Intelligentization

- / 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.





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 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.



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.



Standard Specification

- / Duplex wide-view mast
- / Hydraulic prong adjustment
- / Standard fork
- / Cab
- / Cooling and heating air conditioner
- / Fully hydraulic power steering
- / Quadruple multi-way valve
- / Chair sensing system
- / Steering wheel adjusting device
- / Self-locking valve in the tilting fuel circuit
- / Speed limit valve in the lifting fuel circuit
- / Traction device
- / Main power switch
- / Reversing radar
- / LCD bus instrument
- / Neutral indicator
- / Accumulator low pressure alarm
- / Hydraulic oil filter alarm
- / Vehicle LED lights
- / Pneumatic tire
- / Reverse buzzer
- / Snail horn
- / Manual/electric tipping pump
- / Armrest's multi-directional adjustment device
- / Vehicle toolkit
- / Multi-function color-screen combination instrument
- / Standard lithium battery box
- / Water chilling unit for lithium battery
- / Maintenance-free 24V lead-acid battery
- / Integrated controller (PDU+DC/DC+MCU)
- / Two-in-one oil pump motor controller
- / VCU controller
- / MSD maintenance switch
- / Emergency power off switch
- / Water chilling unit for electric control and motor
- / Automatic fire extinguisher for lithium battery
- / Cab fan

Options

- / User specified color
- / Forks of Others specifications
- / Masts of Others specifications
- / Solid tire
- / Vehicle intercom
- / Reverse voice buzzer
- / Electronic alarm light (with/without a control switch)
- / Rear view system (optional with memory)
- / Front and rear view systems (optional with memory)
- / Fire extinguisher (2kg/4kg)
- / Mast LED operation light
- / Four-channel driving record system
- / Speed limit
- / Blue light
- / Weighing system

Optional battery list

Capacity (Ah)	12-16t 541V	12-16t 608V
228	●	—
302	—	○

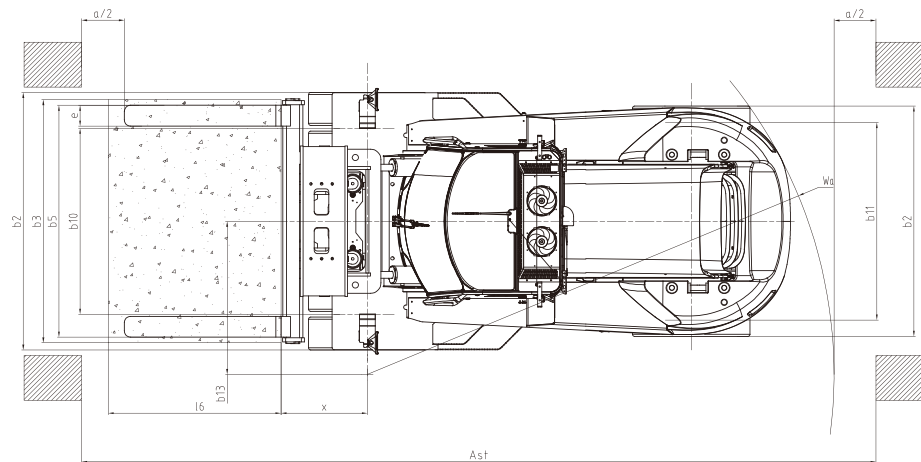
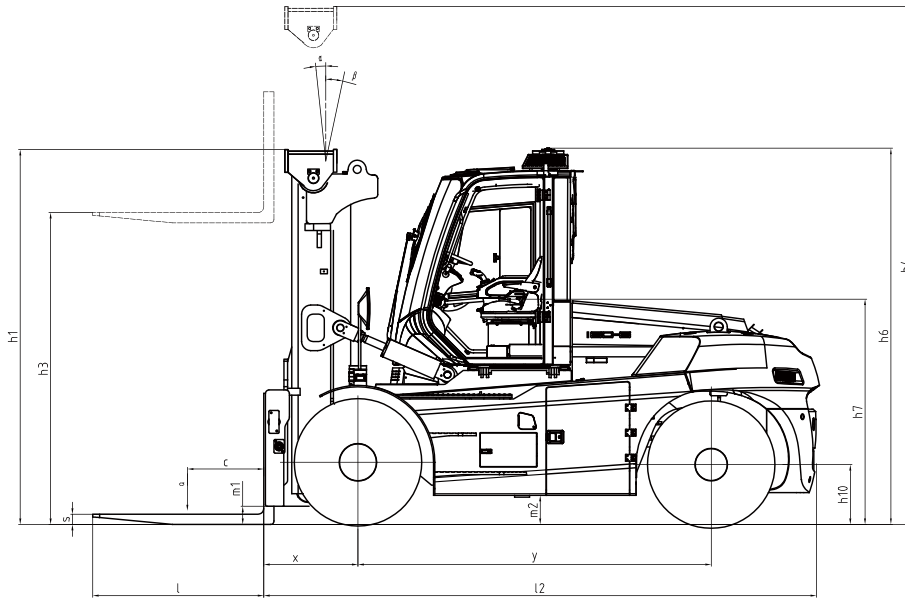
Note: ● Standard battery capacity; ○ Optional battery capacity; — Null

XH Series 12-16t High-voltage Lithium Battery Forklift Specification

			HANGCHA GROUP CO.,LTD.			
			CPD120-XHL2G	CPD140-XHL2G	CPD160-XHL2G	
Distinguishing mark	1.1	Manufacturer				
	1.2	Manufacturer's type designation	CPD120-XHL2G	CPD140-XHL2G	CPD160-XHL2G	
	1.3	Drive: electric (battery or mains), diesel, petrol, fuel gas	Electric	Electric	Electric	
	1.4	Operator type: hand, pedestrian, standing, seated, order-picker	Seated	Seated	Seated	
	1.5	Rated capacity/rated load	Q (kg)	12000	14000	16000
	1.6	Load centre distance	c (mm)	600	600	600
	1.8	Load distance, centre of drive axle to fork	x (mm)	746	825	825
	1.9	Wheelbase	y (mm)	3100	3100	3100
Weight	2.1	Service Weight	kg	17000	19400	20500
	2.2	Axle loading, laden front/rear	kg	24590/3410	30200/3200	32800/3700
	2.3	Axle loading, unladen front/rear	kg	8300/8700	9700/9700	9430/11070
Tyres, chassis	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		pneumatic	pneumatic	pneumatic
	3.2	Tyre size, front		10.00-20-18PR	11.00-20-18PR	12.00-20-20PR
	3.3	Tyre size, rear		10.00-20-18PR	11.00-20-18PR	12.00-20-20PR
	3.5	Wheels, number front / rear (x = driven wheels)		4x/2	4x/2	4x/2
	3.6	Tread, front	b10 (mm)	1780	1780	1780
	3.7	Tread, rear	b11 (mm)	1890	1890	1890
Dimensions	4.1	Tilt of mast/fork carriage forward/backward	$\alpha/\beta(^{\circ})$	6/12	6/12	6/12
	4.2	Height, mast lowered	h1 (mm)	3180	3270	3290
	4.4	Lift	h3 (mm)	3000	3000	3000
	4.5	Height, mast extended	h4 (mm)	4695	4790	4790
	4.7	Height of overhead guard (cabin)	h6 (mm)	3265	3280	3300
	4.8	Seat height/stand height	h7 (mm)	1925	1940	1960
	4.12	Coupling height	h10 (mm)	538	553	573
	4.19	Overall length	l1 (mm)	6190	6260	6350
	4.20	Length to face of forks	l2 (mm)	4690	4760	4850
	4.21	Overall width	b1 (mm)	2460	2460	2460
	4.22	Fork dimensions	s/e/l (mm)	80/200/1500	90/200/1500	90/200/1500
	4.24	Fork-carriage width	b3 (mm)	2372	2372	2372
	4.25	Distance between fork-arms	b5 (mm)	520/2200	520/2200	520/2200
	4.31	Ground clearance, laden, below mast	m1 (mm)	235	250	270
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	220	235	255
	4.34.1	Aisle width for pallets crossways	Ast (mm)	6795	6875	6975
4.35	Turning radius	Ws (mm)	4350	4350	4450	
Performance data	5.1	Travel speed, laden/unladen	km/h	23/25	23/25	26/27
	5.2	Lift speed, laden/unladen	m/s	0.4/0.5	0.35/0.45	0.35/0.4
	5.6	Max. Drawbar pull, laden/unladen	N	100000	100000	100000
	5.8	Max. gradeability, laden/unladen	%	30/30	30/30	25/25
	5.10	Service brake		Wet disc brake system(WDB)	Wet disc brake system(WDB)	Wet disc brake system(WDB)
		Parking brake		Spring Applied,Hydraulic release multidisc brake(SAHR)		
Electric-engine	6.1	Drive motor rating S2 60 min	kW	120	120	120
	6.2	Lift motor rating at S3 15%	kW	50×2	50×2	50×2
	6.4	Battery voltage, nominal capacity K5	V/Ah	541/228	541/228	541/228
	6.5	Battery weight	kg	1100	1100	1100
		Battery dimensions	l/b/h(mm)	1884/715/629	1884/715/629	1884/715/629
		Max. battery weight	kg	1100	1100	1100
		Min. battery weight	kg	1500	1500	1500
	8.1	Type of drive unit		IGBT/AC	IGBT/AC	IGBT/AC
Addition data	10.1	Operating pressure for attachments	bar	140	140	140
	10.8	Towing coupling, type DIN 15170		Φ40Pin	Φ40Pin	Φ40Pin

12-16t Mast Specification

Type	Model	Lifting height	Overall height				Tilt range	Capacity		
			Lowered		Extended			F/R	Load center@600mm	
			12t	14/16t	12t	14/16t	12t		14t	16t
		mm	mm	mm	mm	mm	(°)	kg	kg	kg
2-stage wide view mast	GRRX120/160M300	3000	3180	3290	4695	4790	6/12	12000	12000	16000
	GRRX120/160M330	3300	3330	3440	4995	5090	6/12	12000	12000	16000
	GRRX120/160M360	3600	3480	3590	5295	5390	6/12	12000	12000	16000
	GRRX120/160M400	4000	3680	3790	5695	5790	6/12	12000	12000	16000
	GRRX120/160M430	4300	3880	3990	6030	6140	6/12	12000	12000	16000
	GRRX120/160M450	4500	3980	4090	6230	6340	6/12	12000	12000	16000
	GRRX120/160M480	4800	4130	4240	6530	6640	6/6	12000	12000	16000
	GRRX120/160M500	5000	4230	4340	6730	6840	6/6	12000	12000	16000
	GRRX120/160M550	5500	4530	4640	7280	7390	3/6	10500	10500	14500
	GRRX120/160M600	6000	4780	4890	7780	7890	3/6	9000	9000	13000
GRRX120/160M650	6500	5080	5190	8330	8440	3/6	7500	7500	11500	



$Ast = l6 + Wa + x + a$ $l6$: load length a : Clearance (200mm)

