



XH SERIES HIGH VOLTAGE LITHIUM-ION PNEUMATIC FORKLIFT

with capacity of 26,000 to 36,000lbs



HANGCHA

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Making Material Handling Easier
SINCE 1956



XH SERIES HIGH VOLTAGE LITHIUM-ION PNEUMATIC FORKLIFT

XH Series High Voltage Lithium-ion Pneumatic Forklifts are new series of high voltage lithium-ion forklifts independently developed by Hangcha Group. By applying the same technology found in automobile applications, Hangcha's high voltage forklifts are designed to outperform similar electric and internal combustion forklifts. Hangcha Group is redefining electric forklifts' efficiency, power, and reliability with the XH Series High Voltage Lithium-ion Forklifts.

VOLTAGE

541V

SPEED MODES

3

MAX. GRADEABILITY

30%

TRAVEL SPEED

16.7 mph

WATER RESISTANCE

IPX4

PROTECTION RATE

IP67

THE *Plus*
FOR YOUR
BUSINESS



COMMITTED TO IMPROVING

FASTER & MORE EFFICIENT

Compared to low-voltage lithium-ion forklifts, high-voltage lithium-ion technology can save operators about 40% throughout their ownership when comparing the total cost of ownership.



Compared to I.C. powered forklifts, high-voltage lithium-ion technology can save operators about 90% throughout their ownership when comparing the total cost of ownership.



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.

I.C. POWER PERFORMANCE COMPARISON

	High Voltage Lithium-ion High Voltage Forklift	I.C. Powered Forklift
Travel Speed, laden/unladen	16.2/16.8 mph (26/27 km/h)	9.3-12.4 mph (15-20 km/h)
Lift Speed, laden/unladen	15.7/19.7 in/s (400/500 mm/s)	16.9/18.5 in/s (430/470 mm/s)
Max. Gradeability, S2-5min, laden/unladen	30%	15%-20%

High Voltage Lithium-ion vs. Lead Acid Charging Times

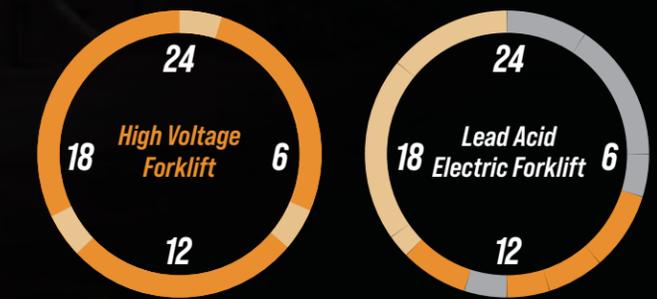


Hangcha High Voltage Lithium-ion Forklift

Lead Acid Electric Forklift

The charging time is greatly reduced thanks to fast charging and high-voltage technology.

High Voltage Lithium-ion vs. Lead Acid 24 Hour Cycle



Operating Time Charging Time Idle Time

Hangcha's High Voltage Lithium-ion Forklift: Charge for 1.5 hours. Operate for 6 hours.

Lead Acid technology provides slow charging, spare batteries, costly, & complicated management.



EXCELLENT ERGONOMIC DESIGN

Comfort

- / The operator compartment features an adjustable suspension seat, adjustable steering column, and an adjustable multi-directional armrest to allow the operator to find their ideal driving position.
- / The forklift's wide-view mast has an optimized design to provide the operator with a better line of sight. The carriage also features an enlarged opening to allow the operator to better see their load.
- / The multifunctional LCD instrument panel is designed to clearly display data, functions, and monitor the forklift's systems.
- / The fully-suspended cab is waterproof and dustproof. It also is sealed to reduce noise in the operator compartment. Combined with the air conditioner and heater, the cabin is able to keep the operator comfortable in all outdoor working conditions.
- / The cabin features a panoramic view that allows the operator to better see their surroundings.
- / The hydraulic brake curve is optimized to achieve smooth and easy-to-control braking. Combined with the ergonomic joystick, operators are able to comfortably and accurately operate the XH Series High Voltage Lithium-ion Forklift.



SMART Monitoring

- / The forklift's central controller uses CAN-BUS architecture to monitor the built-in diagnostic sensors, management of the forklift's functions, and the forklift's central fault alarm.
- / An optional intelligent management system can be installed to enable intelligent remote monitoring and easier equipment management.





Advancement

- / The XH Series uses vehicle-grade permanent magnet synchronization systems for the drive and operating systems. By using this technology, the high voltage forklift's driving speed, ability on grades, and acceleration performance rival that of similar internal combustion vehicles. They also offer better environmental performance than similar I.C. forklifts.
- / The forklift's 541V (or optional 608V) high-voltage platform is equipped with a heavy truck water-cooled box for better heat dissipation, longer endurance mileage and to increase the battery's durability.
- / The electronic controller and motor are water-cooled. This provides better heat dissipation and allows long-term and high-intensity work exactly like an I.C. powered forklift.
- / The forklift uses the central controller to redeploy the traction integrated controller (PDU+DC/DC+MCU) and two-in-one oil pump controller. This intelligent driving system adds to the operational efficiency of the XH Series High Voltage Lithium-ion Pneumatic Forklift.

Safety

- / The forklift's cover is sealed to IPX4 water resistance standards. The motors, electronic controls, and high voltage components are resistant to IP67 dust and water resistance standards. By building the XH Series forklifts to these standards, the forklift is able to safely and reliably operate in harsh operating environments.
- / The electrical system is equipped with high voltage interlock and insulation detection to increase the forklift's safety.
- / The MSD maintenance switch enables one-click power-down to increase maintenance safety.
- / Using some of the same key structural parts found in our I.C. Pneumatic Forklifts ensures the components' safety and reliability as they have been used in the market for many years.



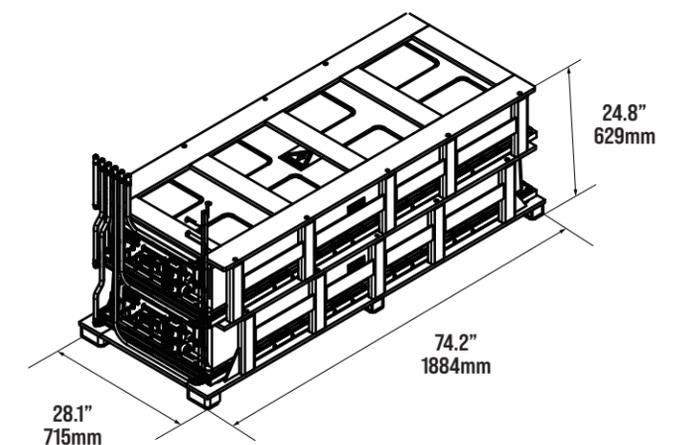
Maintainability

- / The forklift uses an electric tilting cylinder to tilt the full cabin. By using an electric cylinder, operators are able to save time and effort when tilting the cabin.
- / After tilting the full cabin, mechanics are able to easily maintain and/or repair the forklift thanks to the wide opening.



CATL Lithium Iron Phosphate Battery Packs

XH Series High Voltage Lithium-ion Pneumatic Forklift Lithium-ion Battery Capacity		
Load Capacity (lb)	Standard Battery Capacity (V/Ah) (kW-h)	Optional Battery Capacity (V/Ah) (kW-h)
26,000-36,000lbs	541V/228Ah 123.35kW-h	608V/302Ah 193.62kW-h



Standard Configuration

- / Limited Free Lift 2 Stage Mast
- / Hydraulic Prong Adjustment
- / Standard Forks
- / Full Cabin
- / Air Conditioner & Heater
- / Fully Hydraulic Power Steering
- / Quadruple Multiway Valve
- / Operator Presence Sensing System (OPSS)
- / Multi-Directional Adjustable Armrest
- / Adjustable Steering Wheel

- / Tilting Hydraulic System Self-Locking Valve
- / Lifting Hydraulic System Speed Limit Valve
- / Tow Pin
- / Main Power Switch
- / Reverse Camera
- / LCD Instrument Display
- / Neutral Indicator
- / Low Pressure Alarm for the Accumulator
- / Hydraulic Oil Filter Alarm

- / Highly Efficient LED Lights
- / Air Pneumatic Tires
- / Reverse Alarm
- / Horn
- / Manual/Electric Tipping Pump
- / Toolkit
- / Multi-Function LCD Instrument Display
- / 541V/228Ah Lithium Iron Phosphate (LiFePO₄) Battery Pack
- / Water Cooling System for Battery Pack, Control System, and Motor

- / Integrated Controller (PDU+DC/DC+MCU)
- / Two-in-One Hydraulic Pump Controller
- / VCU Controller
- / MSD Maintenance Switch
- / Emergency Cut-Off Switch
- / Automatic Fire Suppression System for Battery Pack
- / Operator Fan

Options

- / Customizable Color
- / Various Fork Carriage Sizes
- / Various Mast Specifications
- / Solid Pneumatic Tires

- / Vehicle Intercom System
- / Reverse Alarm
- / Strobe Light (with/without a control switch)

- / Front and/or Rearview Camera (with optional memory)
- / Fire Extinguisher (4.4lb/8.7lb)
- / Mast Installed LED Working Light

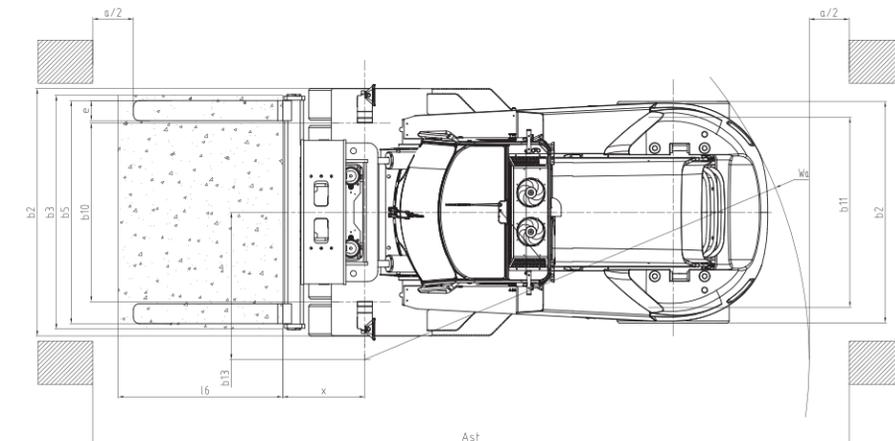
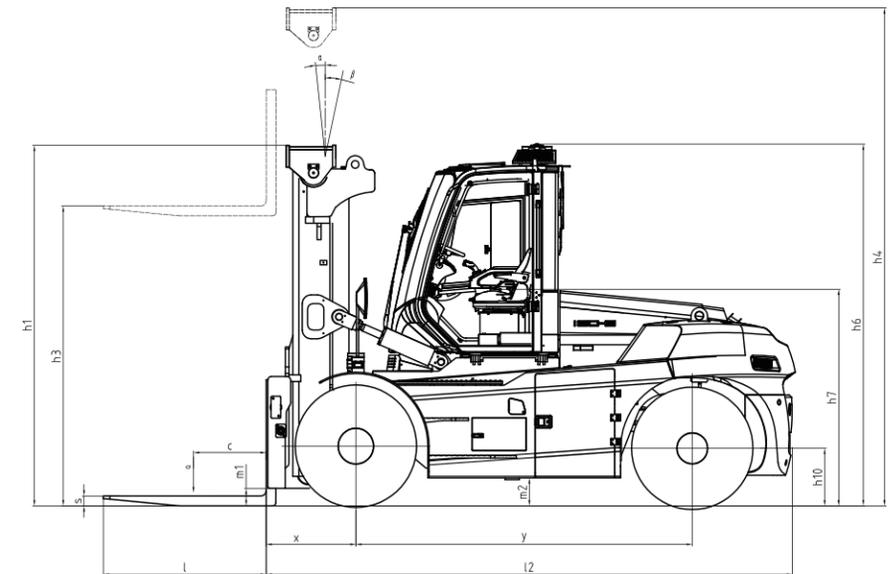
- / Remote Monitoring System
- / Speed Limiter
- / Blue Light
- / Scale System

XH Series High-Voltage Lithium-ion Pneumatic Forklift Specification

Distinguishing Marks	1.1	Manufacturer	HANGCHA GROUP CO.,LTD.				
			HCFA Model Designation				
			FB120Li	FB140Li	FB160Li		
Distinguishing Marks	1.2	Manufacturer's Type Designation	CPD120-XHXL2G	CPD140-XHXL2G	CPD160-XHXL2G		
	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 lb (kg)	26000 (12000)	30000 (14000)	36000 (16000)	
	1.6	Load Centre Distance	c in (mm)	23.6 (600)	23.6 (600)	23.6 (600)	
	1.8	Load Distance, centre of drive axle to fork	x in (mm)	29.3 (746)	32.4 (825)	32.4 (825)	
	1.9	Wheelbase	y (mm)	122 (3100)	122 (3100)	122 (3100)	
	Weight	2.1	Service Weight	lb (kg)	37485 (17000)	42777 (19400)	45202 (20500)
		2.2	Axle Loading, laden front/rear	lb (kg)	54154/7519 (24590/3410)	66591/7056 (30200/3200)	72724/8158 (32800/3700)
2.3		Axle Loading, unladen front/rear	lb (kg)	18301/19183 (8300/8700)	21388/21388 (9700/9700)	20793/24409 (9430/11070)	
Tires & Chassis	3.1	Tires: solid rubber, superelastic, pneumatic, polyurethane		Pneumatic	Pneumatic	Pneumatic	
	3.2	Tire Size, front		10.00-20-18PR	11.00-20-18PR	12.00-20-20PR	
	3.3	Tire 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 in (mm)	70 (1780)	70 (1780)	70 (1780)	
	3.7	Tread, rear	b11 in (mm)	74.4 (1890)	74.4 (1890)	74.4 (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 in (mm)	125.1 (3180)	128.7 (3270)	129.5 (3290)	
4.4		Lift	h3 in (mm)	118.1 (3000)	118.1 (3000)	118.1 (3000)	
4.5		Height, mast extended	h4 in (mm)	184.8 (4695)	188.5 (4790)	188.5 (4790)	
4.7		Height of Overhead Guard (Cabin)	h6 in (mm)	128.5 (3265)	129.1 (3280)	129.9 (3300)	
4.8		Seat Height/Stand Height	h7 in (mm)	75.7 (1925)	76.3 (1940)	77.1 (1960)	
4.12		Coupling Height	h10 in (mm)	21.1 (538)	21.7 (553)	22.5 (573)	
4.19		Overall Length	l1 in (mm)	243.7 (6190)	246.4 (6260)	250 (6350)	
4.20		Length to Face of Forks	l2 in (mm)	184.6 (4690)	187.4 (4760)	190.9 (4850)	
4.21		Overall Width	b1 in (mm)	96.8 (2460)	96.8 (2460)	96.8 (2460)	
4.22		Fork Dimensions	s/e/l in (mm)	3.1/7.8/59.1(80/200/1500)	3.5/7.8/59.1(90/200/1500)	3.5/7.8/59.1(90/200/1500)	
4.24		Fork-Carriage Width	b3 in (mm)	93.3 (2372)	93.3 (2372)	93.3 (2372)	
4.25		Distance Between Fork-Arms	b5 in (mm)	20.4/86.6 (520/2200)	20.4/86.6 (520/2200)	20.4/86.6 (520/2200)	
4.31		Ground Clearance, laden, below mast	m1 in (mm)	9.2 (235)	9.8 (250)	10.6 (270)	
4.32		Ground Clearance, centre of wheelbase	m2 in (mm)	8.6 (220)	9.2 (235)	10 (255)	
4.34.1		Aisle Width for Pallets, crossways	Ast in (mm)	267.5 (6795)	270.6 (6875)	274.6 (6975)	
Performance Data		4.35	Turning Radius	Wa in (mm)	171.2 (4350)	171.2 (4350)	175.1 (4450)
		5.1	Travel Speed, laden/unladen	mph (km/h)	14.3/15.5 (23/25)	14.3/15.5 (23/25)	16.2/16.7 (26/27)
		5.2	Lift Speed, laden/unladen	ft/min (m/s)	78.7/98.4 (0.4/0.5)	68.9/88.6 (0.35/0.45)	68.9/78.7 (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 Multi-Disc Brake (SAHR)			
Electric Motor	6.1	Drive Motor Rating S2 60 min	kW	160 (120)	160 (120)	160 (120)	
	6.2	Lift Motor Rating at S3 15%	kW	67.1x2 (50x2)	67.1x2 (50x2)	67.1x2 (50x2)	
	6.4	Battery Voltage, nominal capacity K5	V/Ah	541/228	541/228	541/228	
	6.5	Battery Weight	lb (kg)	2425 (1100)	2425 (1100)	2425 (1100)	
		Battery Dimensions	l/b/h in (mm)	74.2/28.1/24.8 (1884/715/629)	74.2/28.1/24.8 (1884/715/629)	74.2/28.1/24.8 (1884/715/629)	
		Minimum Battery Weight	lb (kg)	2425 (1100)	2425 (1100)	2425 (1100)	
Additional Data	8.1	Type of Drive Unit		IGBT/AC	IGBT/AC	IGBT/AC	
	10.1	Operating Pressure for Attachments	bar	140	140	140	
	10.8	Towing Coupling, Type DIN 15170		Φ40Pin	Φ40Pin	Φ40Pin	

26,000lb - 36,000lb Mast Specification

Type	Model	Lifting Height	Overall Height				Tilt Range	Load Capacity		
			Lowered		Extended			Load Center at 24" or 600mm		
			26,000lbs (12t)	30,000lbs (14t) 36,000lbs (16t)	26,000lbs (12t)	30,000lbs (14t) 36,000lbs (16t)		26,000lbs (12t)	30,000lbs (14t)	36,000lbs (16t)
Limited Free Lift 2 Stage Mast	GRRX120/160M300	118.1 (3000)	125.1 (3180)	129.5 (3290)	184.8 (4695)	188.5 (4790)	6/12	26000 (12000)	30000 (14000)	36000 (16000)
	GRRX120/160M330	129.9 (3300)	131.1 (3330)	135.4 (3440)	196.6 (4995)	200.3 (5090)	6/12	26000 (12000)	30000 (14000)	36000 (16000)
	GRRX120/160M360	141.7 (3600)	137 (3480)	141.3 (3590)	208.4 (5295)	212.2 (5390)	6/12	26000 (12000)	30000 (14000)	36000 (16000)
	GRRX120/160M400	157.4 (4000)	144.8 (3680)	149.2 (3790)	224.2 (5695)	227.9 (5790)	6/12	26000 (12000)	30000 (14000)	36000 (16000)
	GRRX120/160M430	169.2 (4300)	152.7 (3880)	157 (3990)	237.4 (6030)	241.7 (6140)	6/12	26000 (12000)	30000 (14000)	36000 (16000)
	GRRX120/160M450	177.1 (4500)	156.6 (3980)	161 (4090)	245.2 (6230)	249.6 (6340)	6/12	26000 (12000)	30000 (14000)	36000 (16000)
	GRRX120/160M480	188.9 (4800)	162.5 (4130)	166.9 (4240)	257 (6530)	261.4 (6640)	6/6	26000 (12000)	30000 (14000)	36000 (16000)
	GRRX120/160M500	196.8 (5000)	166.5 (4230)	170.8 (4340)	264.9 (6730)	269.2 (6840)	6/6	26000 (12000)	30000 (14000)	36000 (16000)
	GRRX120/160M550	216.5 (5500)	178.3 (4530)	182.6 (4640)	286.6 (7280)	290.9 (7390)	3/6	23152 (10500)	27562 (12500)	31972 (14500)
	GRRX120/160M600	236.2 (6000)	188.1 (4780)	192.5 (4890)	306.2 (7780)	310.6 (7890)	3/6	19845 (9000)	24255 (11000)	28665 (13000)
	GRRX120/160M650	255.9 (6500)	200 (5080)	204.3 (5190)	327.9 (8330)	332.2 (8440)	3/6	16537 (7500)	20947 (9500)	25357 (11500)



Ast=16+Wa+x+a L6: load length a: Clearance (200mm)

