

CPD60/70/85/100 GB2D/GB2DLI



LITHION **6-10 t**
G3 Series Electric Battery
Forklift Truck



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Compatible in system, Special in style

----- It is rather to achieve mutual achievement
than give an ostentatious display of ability.

Compatible Lithium battery and lead acid
battery are optional as you like.

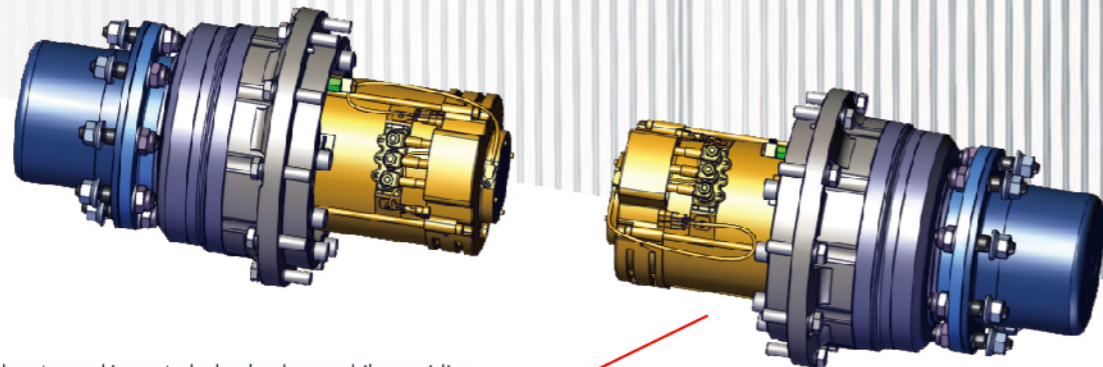
Integrated Combine the humanization design advantages of both
internal combustion forklift truck and electric truck.



The truck is a continuation of Heli family style and creates a new concept of electric forklift through easy exchange between lead acid battery power and lithium battery power

Efficient and Energy saving

- Powerful dual drive, superior gradeability.

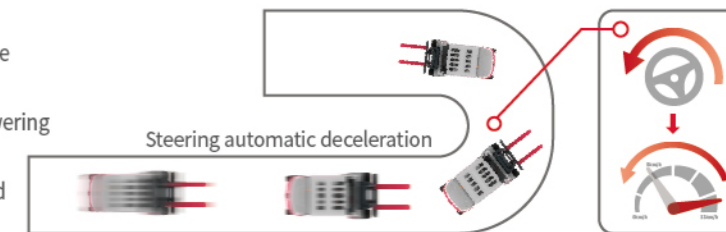


Dual drive power, imported motor and imported wheel reducer, while providing strong power, further improve the safety and stability of the truck.

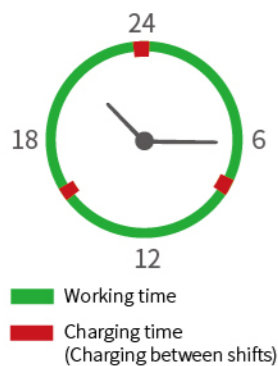
Gradient
6-8.5t: 18%
10t: 15%

Intelligent and Safe

- **Intelligent automatic parking:** optimized negative braking system and active parking in multiple applications are safe and easy which is safe and easy to make up omissions;
- **Intelligent turning speed limit:** active speed limit function, balance efficiency and safety when turning at high speed;
- **Intelligent limit buffer:** intelligent induction of mast lifting and lowering avoids limit impact and is safe and comfortable;
- **Intelligent operation protection:** a full set of OPS system can avoid misoperation and ensure safety;
- **Intelligent control strategy:** dual core controller is in line with the latest EU safety requirements.



- Double gun charging, fast and efficient.

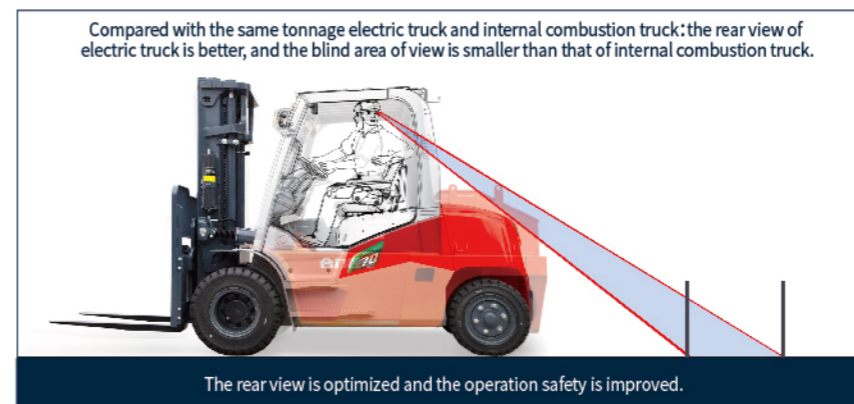
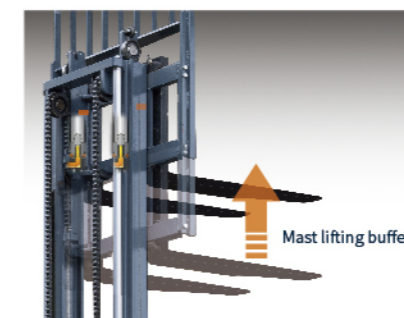
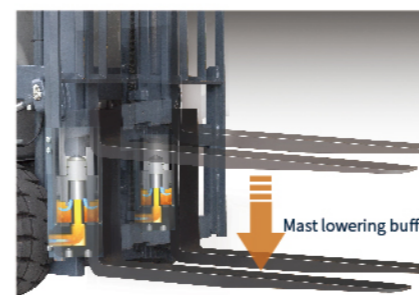


Lithium battery forklift truck is equipped with double gun charging as standard, which greatly reduces the charging time. Lithium batteries have high-density capability and can be used and charged at any time to realize efficient and continuous operation all day long.

Lithium battery options:

- **606Ah capacity (standard configuration):** which can be charged for 8 hours at one time, suitable for light load condition;
- **813Ah capacity:** one charge can meet 8-9 hours of operation, suitable for standard working conditions;
- **1084 Ah capacity:** one charge, suitable for 9-10 hours operation, suitable for heavy load strengthening conditions.
- **808Ah capacity (8.5-10t Lithium battery options):** one charge can meet 8-9 hours of operation, suitable for standard working conditions;

- Multi configuration, low energy consumption.



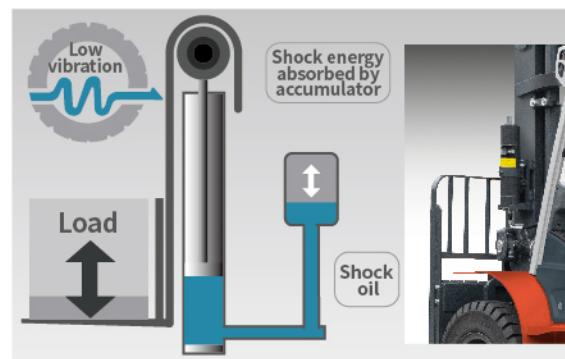
Comfort and Intimate

- The mast with large opening offers good driving vision ensuring operation comfort and safety.
- It integrates the advantages of internal combustion forklift truck platform to make the driving space more comfortable.
- Standard imported silent gear pump, greatly reduce the ear noise.

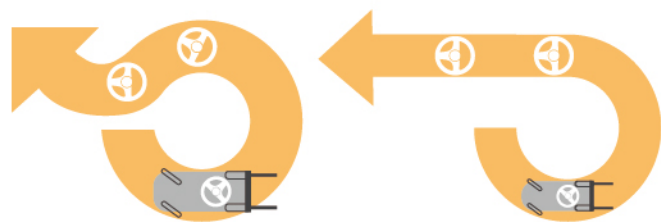


Optional configuration of intelligent safety buffer system cushion operator from effects of riding over uneven surface and it is more comfortable.

- **Vibration shock reduction**
When driving under load conditions, the impact caused by uneven surface is greatly absorbed, and the vibration is effectively reduced.
- **Vibration and noise reduction**
When driving under load condition, the impact noise caused by uneven surface is greatly reduced.
- **Reduced driving fatigue**
During the emergency stop operation during the load lowering process, the vibration and driving fatigue caused by inertia impact can be effectively reduced, and the driving safety can be improved.



- Hydraulic synchronous steering system can adjust steering wheel and wheel angle offset smartly and offers accurate steering and comfortable driving. (optional)
- Color screen display which can switch between Chinese and English, display truck speed, working time, battery power, fault code and other information.



Stable and Reliable

- Imported drive axle and motor are stable and reliable.
- Wet negative braking is safe and reliable.
- The innovative design of mast structure improves the overall strength and stiffness.
- The structural design of the welded large oil tank greatly improves the strength of the frame and the heat dissipation of the hydraulic oil.
- The whole truck can be operated alternately in -20°C cold storage for 6 hours and parked in the cold storage for 12 hours without failure and can continue to work.
- New design of steering axle is safe and reliable.



Convenient and Maintenance

- The layout of the cab is optimized, the battery is located directly under the engine room, and the hood opening angle is large, which facilitate daily inspection and maintenance.
- The controller is located on the counterweight, giving consideration to heat dissipation and maintenance convenience.
- The battery side changing is installed for easy changing between lead-acid battery and lithium battery as you like meet the needs of different customers and occasions.



HELI smart fleet management system(domestic basic edition)

Vehicle positioning	Statistical form
Remote diagnosis	Vehicle management
Remote monitoring	Identification recognition (optional)
Maintenance reminder	Weight management (optional)
Battery management	Collision management (optional)

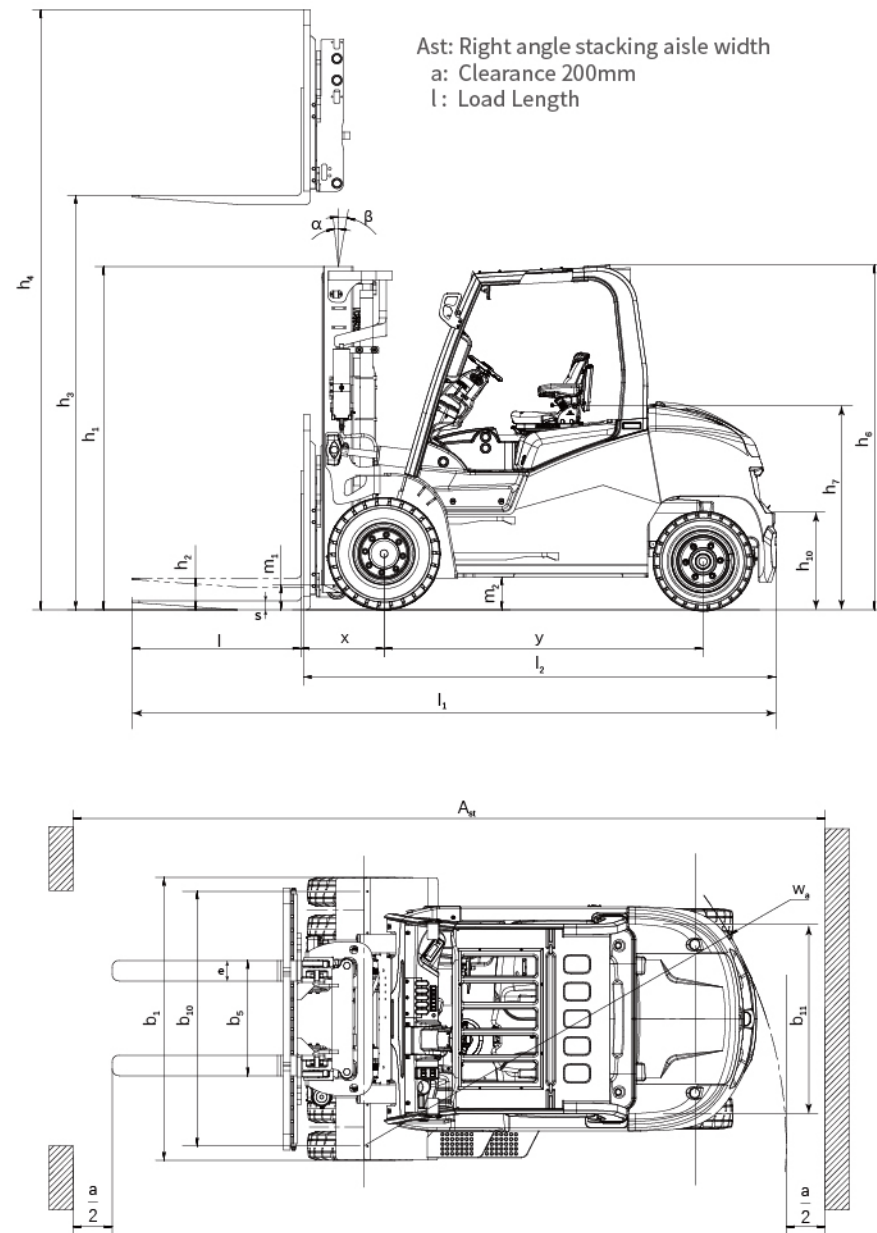


Manufacturer and Technical Data (1)

Characteristics						
1.01	Manufacturer			HELI		
1.02	Model		CPD60	CPD60	CPD70	CPD70
1.03	Configuration number		GB2D	GB2DLi	GB2D	GB2DLi
1.04	Rated capacity	Q	kg	6000	6000	7000
1.05	Load center distance	c	mm	600	600	600
1.06	Power mode			Electric	Electric	Electric
1.07	Driving mode			Seated	Seated	Seated
1.08	Front overhang	x	mm	600	600	605
1.09	Wheelbase	y	mm	2305	2305	2305
Weight						
2.01	Total weight (with/without battery)		kg	10580/7950	9720/9170	11030/8680
2.02	Axle load (laden,front/rear)		kg	16350/1130	15280/1340	16280/1750
2.03	Axle load (unladen,front/rear)		kg	5730/4850	4750/4970	5730/5300
Tyres						
3.01	Tyre type			Solid tyre	Solid tyre	Solid tyre
3.02	Tyre size,front			8.25-15	8.25-15	8.25-15
3.03	Tyre size,rear			250-15	250-15	250-15
3.04	Wheels,number front/rear (x=driven wheels)			4/x2	4/x2	4/x2
3.05	Tread, front	b10	mm	1567	1567	1567
3.06	Tread, rear	b11	mm	1370	1370	1370
Dimensions						
4.01	Mast tilt angle (forward/backward)	α/β	°	6/10	6/10	6/10
4.02	Height (mast lowered)	h1	mm	2480	2480	2480
4.03	Free lifting height	h2	mm	160	160	165
4.04	Lifting height (standard)	h3	mm	3000	3000	3000
4.05	Max. height,extended (with backrest)	h4	mm	4460	4460	4460
4.06	Height of overhead guard	h6	mm	2500	2500	2491
4.07	Seat height relating to SIP (to ground)	h7	mm	1460	1460	1460
4.08	Towing coupling height	h10	mm	470	470	470
4.09	Overall length (with fork)	l1	mm	4657	4657	4662
4.10	Overall length (without fork)	l2	mm	3437	3437	3442
4.11	Overall width	b1	mm	2045	2045	2045
4.12	Fork size:thickness x width x length	s/e/l	mm	60x150x1220	60x150x1220	65x150x1220
4.13	Fork carriage,according to ISO2328			4A	4A	4A
4.14	Distance across fork-arms, Max./Min.	b5	mm	1845/300	1845/300	1845/300
4.15	Distance across fork-arms, Max./Min.	m1	mm	160	160	160
4.16	Ground clearance (center of wheelbase)	m2	mm	239	239	229
4.17	Right angle stacking aisle width for pallet 1000 x1200mm crossways	Ast	mm	4845	4845	4850
4.18	Right angle stacking aisle width for pallet 800 x1200mm lengthways	Ast	mm	5045	5045	5050
4.19	Min. outside turning radius	Wa	mm	3050	3050	3050
Performance Data						
5.01	Travel speed (laden/unladen)		km/h	15/16	15/16	15/16
5.02	Lift speed (laden/unladen)		m/s	0.35/0.46	0.35/0.46	0.32/0.46
5.03	Lowering speed (laden/unladen)		m/s	0.46/0.45	0.46/0.45	0.48/0.45
5.04	Max.drawbar pull (laden/unladen)		N	35000	35000	37000
5.05	Max.gradeability (laden)		%	19	19	18
5.06	Acceleration time(10 m)(laden/unladen)		s	4.9/5.5	4.9/5.5	4.9/5.5
Battery						
6.01	Battery voltage/Capacity		V/Ah	80/840	80/606	80/960
6.02	Battery weight (Min./Max.)		kg	2150	600	2350
6.03	Battery,according to DIN			DIN 43536A	-	DIN 43536A
Motor and controller						
7.01	Driving motor powering (S2-60min)		kW	2x17.1	2x17.1	2x17.1
7.02	Lifting motor powering (S3-15%)		kW	2x26.5	2x26.5	2x26.5
7.03	Driving motor controlling mode			MOSFET/AC	MOSFET/AC	MOSFET/AC
7.04	Lifting motor controlling mode			MOSFET/AC	MOSFET/AC	MOSFET/AC
Addition data						
8.01	Service brake/Parking brake			Hydraulic	Hydraulic	Hydraulic
8.02	Operating pressure for attachments		Mpa	14	14	14

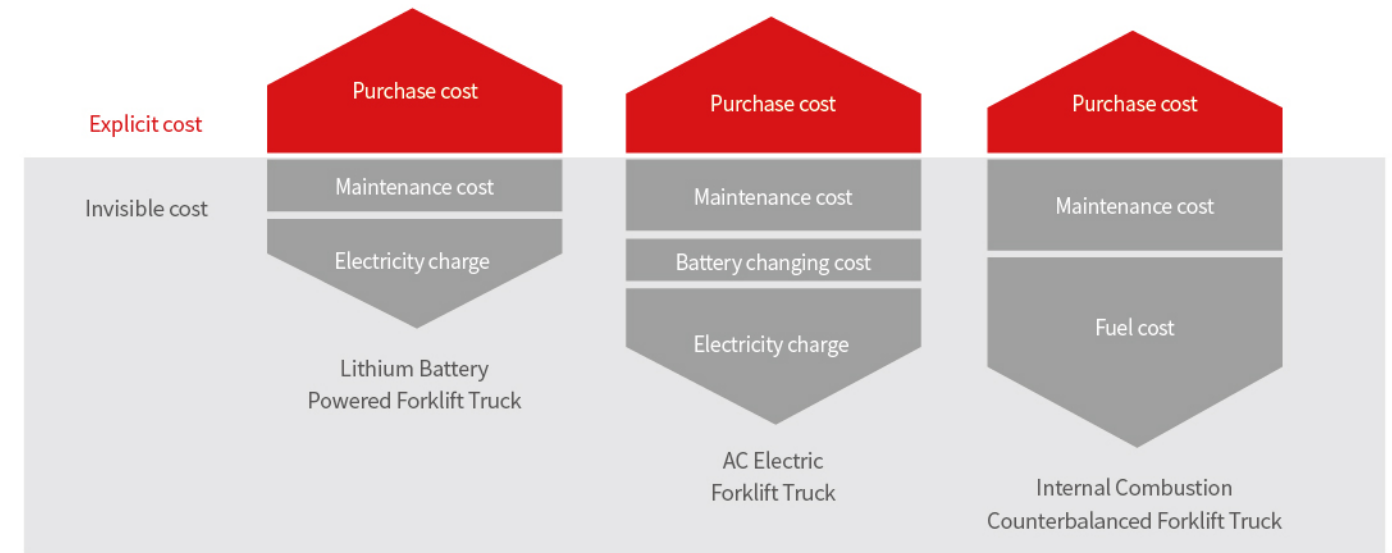
Manufacturer and Technical Data (2)

Characteristics						
1.01	Manufacturer			HELI		
1.02	Model			CPD85	CPD85	CPD100
1.03	Configuration number			GB2D	GB2DLi	GB2D
1.04	Rated capacity	Q	kg	8500	8500	10000
1.05	Load center distance	c	mm	600	600	600
1.06	Power mode			Electric	Electric	Electric
1.07	Driving mode			Seated	Seated	Seated
1.08	Front overhang	x	mm	650	650	660
1.09	Wheelbase	y	mm	2400	2400	2580
Weight						
2.01	Total weight (with/without battery)		kg	13952/11664	12660/12300	14780/12490
2.02	Axle load (laden,front/rear)		kg	19933/2889	18930/2245	22560/2220
2.03	Axle load (unladen,front/rear)		kg	7006/7316	6080/6620	7675/7105
Tyres						
3.01	Tyre type			Solid tyre	Solid tyre	Solid tyre
3.02	Tyre size,front			8.25-15	8.25-15	8.25-15
3.03	Tyre size,rear			250-15	250-15	250-15
3.04	Wheels,number front/rear (x=driven wheels)			4x/2	4x/2	4x/2
3.05	Tread, front	b10	mm	1686	1686	1686
3.06	Tread, rear	b11	mm	1370	1370	1370
Dimensions						
4.01	Mast tilt angle (forward/backward)	α/β	°	6/9	6/9	6/9
4.02	Height (mast lowered)	h1	mm	2700	2700	2950
4.03	Free lifting height	h2	mm	200	200	210
4.04	Lifting height (standard)	h3	mm	3000	3000	3000
4.05	Max. height,extended (with backrest)	h4	mm	4200	4200	4455
4.06	Height of overhead guard	h6	mm	2470	2470	2470
4.07	Seat height relating to SIP (to ground)	h7	mm	1460	1460	1460
4.08	Towing coupling height	h10	mm	467	467	467
4.09	Overall length (with fork)	l1	mm	4870	4870	5062
4.10	Overall length (without fork)	l2	mm	3650	3650	3842
4.11	Overall width	b1	mm	2165	2165	2165
4.12	Fork size:thickness x width x length	s/e/l	mm	70x175x1220	70x175x1220	80x175x1220
4.13	Fork carriage,according to ISO2328			-	-	-
4.14	Distance across fork-arms, Max./Min.	b5	mm	450-1910	450-1910	470-2100
4.15	Distance across fork-arms, Max./Min.	m1	mm	240	240	240
4.16	Ground clearance (center of wheelbase)	m2	mm	246	246	246
4.17	Right angle stacking aisle width for pallet 1000 x1200mm crossways	Ast	mm	5080	5080	5210
4.18	Right angle stacking aisle width for pallet 800 x1200mm lengthways	Ast	mm	5280	5280	5410
4.19	Min. outside turning radius	Wa	mm	3230	3230	3350
Performance Data						
5.01	Travel speed (laden/unladen)		km/h	14/15.5	14/15.5	13/15.5
5.02	Lift speed (laden/unladen)		m/s	0.300/0.395	0.300/0.395	0.255/0.350
5.03	Lowering speed (laden/unladen)		m/s	0.430/0.430	0.430/0.430	0.430/0.350
5.04	Max.drawbar pull (laden/unladen)		N	44000	44000	45000
5.05	Max.gradeability (laden)		%	18	18	15
5.06	Acceleration time(10 m)(laden/unladen)		s	5.38/5.84	5.38/5.84	5.62/6.31
Battery						
6.01	Battery voltage/Capacity		V/Ah	80/960	80/808	80/960
6.02	Battery weight (Min./Max.)		kg	2288	800	2288
6.03	Battery,according to DIN			DIN 43536A	-	DIN 43536A
Motor and controller						
7.01	Driving motor powering (S2-60min)		kW	17.1x2	17.1x2	17.1x2
7.02	Lifting motor powering (S3-15%)		kW	26.5x2	26.5x2	26.5x2
7.03	Driving motor controlling mode			MOSFET/AC	MOSFET/AC	MOSFET/AC
7.04	Lifting motor controlling mode			MOSFET/AC	MOSFET/AC	MOSFET/AC
Addition data						
8.01	Service brake/Parking brake			Hydraulic	Hydraulic	Hydraulic
8.02	Operating pressure for attachments		Mpa	14	14	14

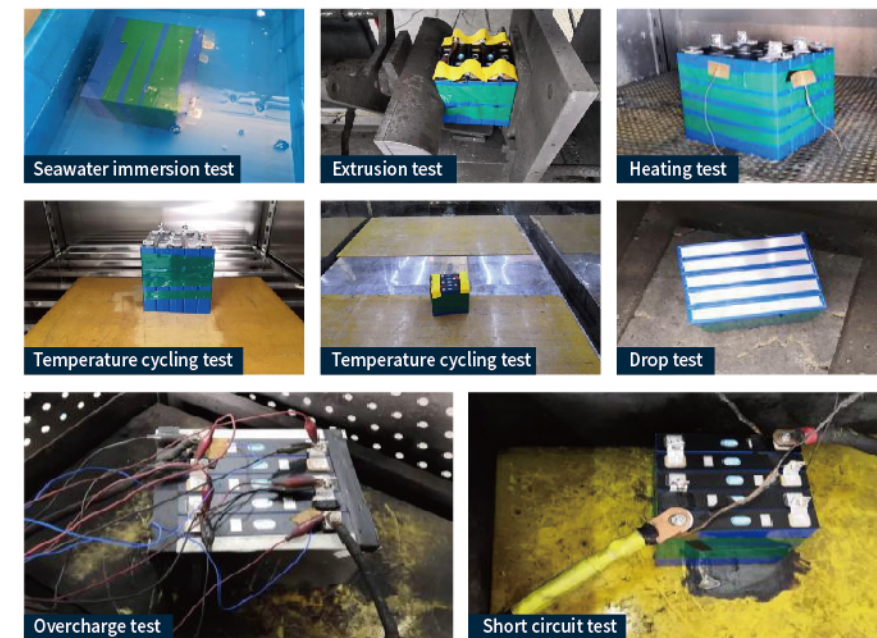


Operating Cost Comparison: Lithium battery forklift **VS.** Lead-acid battery forklift **VS.** IC forklift

The advantages of HELI lithium battery forklift trucks are more prominent in the life cycle cost. Compared with internal combustion forklift truck, lithium battery forklift truck has the advantages of no noise, no pollution, small vibration and simple operation. Compared with the lead-acid battery forklift truck, lithium battery forklift has the characteristics of fast charging and charging at any time, which is more suitable for multi shift operation. Besides, HELI lithium battery forklift is maintenance free, high power conversion efficiency, and economical overall operation cost.

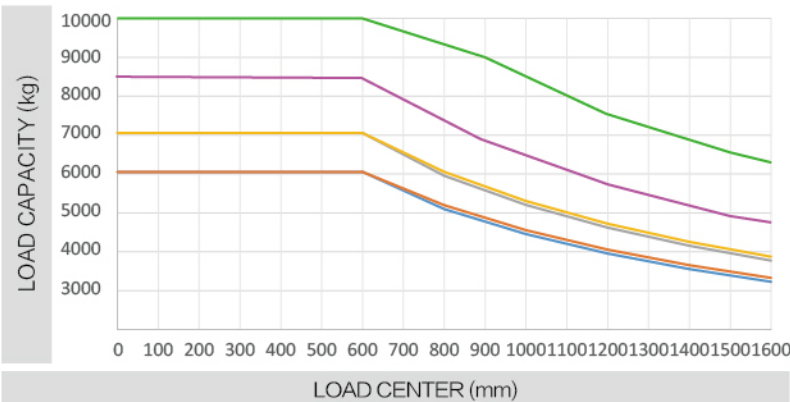


Lithium Battery Advantages



- ✓ The truck selects mature and economical square iron phosphate lithium battery core and module used by large numbers of commercial vehicles;
- ✓ The module adopts aluminum alloy plate frame, which is firm, light in weight and has good heat dissipation effect;
- ✓ Fast charging: fast charging makes truck gapless operation possible, and it can be filled in 2 hours;
- ✓ High efficiency and safety: The charging and discharging efficiency is up to 98%, and temperature of thermal runaway is over 600°C;
- ✓ Low temperature adaptability: Standard configuration of heating function ensures normal operation of low temperature environment;
- ✓ Long service life: the normal charging and discharging cycles is more than 4000 times or 5 years, and capacity retention rate is more than 75%;
- ✓ Maintenance free: the battery does not need manual maintenance and does not need to add distilled water electrolyte;
- ✓ Green and clean: no pollution and zero emission.

Load curve



- CPD60-GB2D
- CPD60-GB2DLi
- CPD70-GB2D
- CPD70-GB2DLi
- CPD85-GB2D(Li)
- CPD100-GB2D(Li)

Note: The vertical axis stands for load capacity and the horizontal axis stands for load center which is calculated from the front surface of the forks to the gravity of the standard load. The standard load means a cubic with 1000mm edge length. When mast is tilted forward, using non-standard forks or loading large goods, the load capacity will be reduced. The load capacity of standard mast at different load center can be known from this load chart.

G3 6-7t Wide View Standard Mast

Table with columns: Mast model, Max.lifting height (mm), Load capacity (lode center 600mm) (kg), Height (mast lowered) (mm), Free lift (with backrest) (mm), Service weight (kg), Mast tilt angle α/β (°). Rows include models M220 through M600.

G3 8.5-10t Wide View Standard Mast

Table with columns: Mast model, Max.lifting height (mm), Load capacity (lode center 600mm) (kg), Height (mast lowered) (mm), Service weight (kg), Mast tilt angle α/β (°). Rows include models M250 through M600.

G3 6-7t Wide View Full Free 2-Stage Mast

Table with columns: Mast model, Max.lifting height (mm), Load capacity (lode center 600mm) (kg), Height (mast lowered) (mm), Free lift (with backrest) (mm), Service weight (kg), Mast tilt angle α/β (°). Rows include models ZM220 through ZM600.

注: 不带挡货架自由起升高度6t: +340mm,7t: +180mm

G3 8.5-10t Wide View Full Free 2-Stage Mast

Table with columns: Mast model, Max.lifting height (mm), Load capacity (lode center 600mm) (kg), Height (mast lowered) (mm), Free lift (with backrest) (mm), Service weight (kg), Mast tilt angle α/β (°). Rows include models ZM250 through ZM600.

G3 6-7t Wide View Full Free 3-Stage Mast

Table with columns: Mast model, Max.lifting height (mm), Load capacity (lode center 600mm) (kg), Height (mast lowered) (mm), Free lift (with backrest) (mm), Service weight (kg), Mast tilt angle α/β (°). Rows include models ZSM360 through ZSM700.

注: 不带挡货架自由起升高度6t: +340mm,7t: +180mm

G3 8.5-10t Wide View Full Free 3-Stage Mast

Table with columns: Mast model, Max.lifting height (mm), Load capacity (lode center 600mm) (kg), Height (mast lowered) (mm), Free lift (with backrest) (mm), Service weight (kg), Mast tilt angle α/β (°). Rows include models ZSM360 through ZSM600.

