G2 系列/SERIES 2-7 t

锂电池技术特点 Technical characteristics of lithium battery

绿色环保 Environment Friendliness

- 零排放
- 低噪音
- 不含重金属
- 无滴漏腐蚀
- 无酸雾挥发

- Zero emission
- Low noise
- Free of heavy metals
- No corrosion
- No acid mist volatilization

适合高低温工作
Suitable for working in both high and low environment

- 在-25℃至55℃之间高低温工作环境，锂电池较铅酸均具有良好的性能
- Lithium battery is better than lead-acid battery when working between -25℃ and 55℃

免维护 Maintenance Free

- 无需补液、防尘
- 免日常维护
- 免人工保养

- Unnecessary of fluid adding and dust proofing
- Daily maintenance free
- Manual maintenance free

高安全 High Safety

- 根据工业车辆特点，实现锂电池材料、电芯类型、PACK工艺以及系统电源管理的整车安全防护设计
- "多节点安全闭环保护" 实现车辆多状态实时闭环保护
- 充电 "锁扣确认" 功能，有效避免 "热插拔" 操作
- "全系统紧急断电" 功能，达到车辆控制系统和BMS电源迅速切断，安全有效

- According to the characteristics of industrial vehicles, it achieves safety protection design which includes lithium battery materials, battery core type, pack technique and system power management
- "Multiple node safety closed circuit protection" realizing truck real time closed circuit protection in variable conditions
- " Lock affirming" function during charging avoiding "hot connecting and disconnecting" operation effectively
- "Whole system emergency button" to disconnect the truck control system and bms power quickly ensuring truck safety

使用寿命长 Long Service Life

- 循环使用4000次容量保持75%以上
- 同等应用场合，寿命远超铅酸电池
- 高性能锂电总成5年或一万小时超长质保

- Over 75% capacity reserved after 4000 shifts operation
- Longer service life than lead-acid battery in equal working condition
- 5 years or ten thousand hours quality guarantee for high performance lithium battery assembly

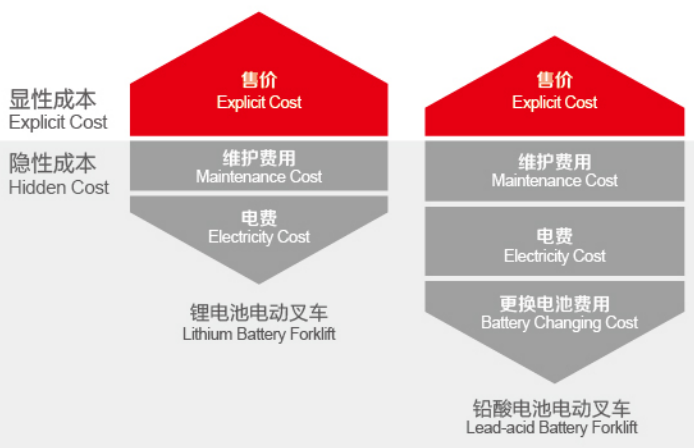
高效节能 High Efficiency and Energy Saving

- 2小时充电可满足6-8小时作业使用
- 高能量密度，自放电率1%/月以下，充放电性能优越
- 95%能量转换率，能源转换更高效
- 可随时充电，操作简单，对电池寿命无任何影响
- 电池无需更换，节省成本

- 2 hours charging meet 6-8 hours working demand
- High-energy density, self discharging rate lower than 1% per month
- 95% energy conversion rate,superior charging and discharging performance
- Flexible to charge, easy to operate, no impact on battery life
- Unnecessary to change battery, cost saving

合力锂电池叉车的优越性，更突出的体现在生命周期内使用成本上。与铅酸蓄电池叉车相比，锂电池叉车适合多班次场合，隐性成本低，整体运营成本更经济。

The superiority of HELI lithium battery forklift truck is embodied in the use-cost within product lifecycle. Compared with lead-acid battery forklift truck, lithium battery forklift truck is more convenient for multiple working shifts. It has lower implicit cost and more economical total running cost.



技术参数 Technical parameters

	项 目 Item	单位 Unit	G2系列2-7吨锂电池牵引车					
1	车型名称 Model		QYD20S-J3G2LI	QYD30S-J3G2LI	QYD40S-J3G2LI	QYD50S-J3G2LI	QYD60S-J3G2LI	QYD70S-J3G2LI
2	额定牵引重量 Rated towing weight	kg	2000	3000	4000	5000	6000	7000
3	最大挂钩牵引力 Max. towing force	N	3000	3100	6000	6100	8000	8100
4	额定挂钩牵引力 Rated towing force	N	800	1000	1500	1600	2600	2800
5	总长 Length	L(mm)	1740		1950		2060	
6	总宽 Width	W(mm)	860		960		1050	
7	总高 Height	H1(mm)	1270		1270		1540	
8	前悬 Overhang length	L2(mm)	260		240		240	
9	后悬 Overhang length	L3(mm)	280		400		400	
10	座椅高度 Seat height	H2(mm)	710					
11	踏板高度 Pedal height	H3(mm)	200					
12	牵引座离地高度 Traction hook height	H5/H6/H7(mm)	250/310		290/350		250/315/380	
13	最小离地间隙 Min. ground clearance	H4(mm)	75					
14	接近角 Approach angle	a(°)	43		38			
15	离去角 Departure angle	b(°)	30		28			
16	最小转弯半径 Min. steering radius	mm	1530		1600		1790	
17	轴 距 Wheel base	L1(mm)	1200		1310		1420	
18	轮距 Tread 前 Front	mm	–					
	轮距 Tread 后 Rear	mm	730		825		882	
19	轮胎 Tyre 前 Front	–	3.50–5		4.00–8		4.00–8	
	轮胎 Tyre 后 Rear	–	2x4.00–8					
20	整车重量 Tractor weight	kg	625		930		1100	
21	前轴承载质量 Front axle load	kg	225		350		350	
22	后轴承载质量 Rear axle load	kg	400		580		750	
23	行驶速度（满载/空载） Travelling speed (loaded/unloaded)	km/h	9/12		8/12		9/14	
24	爬坡能力（满载/空载） Gradeability (loaded/unloaded)	%	10/20	6/20	6/20	5/20	6/20	4/20
25	行车制动 Driving brake	–	液压制动&交流再生制动 Hydraulic brake &AC regeneration brake					
26	停车制动 Parking brake	–	机械制动 Mechanical					
27	驱动电机功率 Driving motor power	kW	3.0 AC		4.0 AC		6.5 AC	
28	转向电机功率 Steering motor power	kW	–		–		0.6 AC	
29	锂电池电压/容量 Lithium battery voltage/capacity	V/Ah	24/202		48/202		48/271	
30	行驶控制方式 Driving control mode	–	电子无级式 Electronic stepless mode					
31	驾驶员耳边噪音 Operator's ear noise	db	<65					
32	电池重量 Battery	kg	100		165		190	

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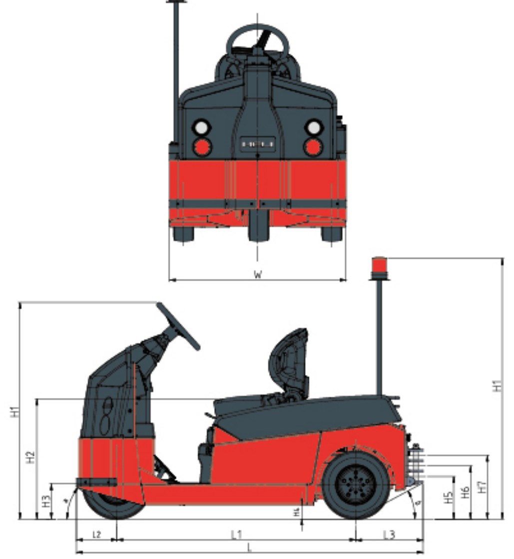
* Our products are subject to improvements and changes without notice.



标准配置 Standard configuration	选用配置 Optional configuration	锂电池选项 Lithium battery options
液晶仪表 Liquid crystal instrument	半封闭驾驶室 Semi–closed cab	24V/200Ah（中盐 CNSG HONG SIFANG）（QYD20/30S–J3G2LI)
全车实心轮胎 Solid tyre for all wheels	无痕迹实心轮胎 Traceless solid tyre	24V/252Ah（中盐 CNSG HONG SIFANG）（QYD20/30S–J3G2LI)
多层牵引座 Multi layer traction seat	倒车镜装置 Backview mirror	48V/200Ah（中盐 CNSG HONG SIFANG）（QYD40/50S–J3G2LI)
紧急断电开关 Emergency power	灭火器 Fire extinguisher	48V/252Ah（中盐 CNSG HONG SIFANG）（QYD40/50/60/70S–J3G2LI)
随车工具 Driver' s tool	自选涂装 Customized painting	48V/320Ah（中盐 CNSG HONG SIFANG）（QYD60/70S–J3G2LI)
	杆式警示灯(2–7吨) Pole type warning light(2–7 ton only)	48V/271Ah（中盐 CNSG HONG SIFANG）（QYD40/50S–J3G2LI)
	便捷式操纵牵引机构 Convenient towing mechanism	

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HELI合力

2-7 t

G2系列锂电池牵引车

G2 series lithium battery tractor

www.helichina.com

G2 系列/ SERIES 2-7 t

整车简介

G2系列2-7t锂电池牵引车是安徽合力股份有限公司新研发的全新产品，整车布局、操纵性能得到全面的提升。该车型采用低踏板座驾式结构布局，兼顾上、下车方便性与驾驶舒适性，有效降低操作者劳动强度，提高生产效率。

G2系列2-7吨锂电池牵引车的研发，体现了合力“以市场需求为导向”的研发体系和“以人为本，以精品回报社会”的核心价值观。

该系列车型适用于汽车制造业、邮政、医药、烟草等场内货物的牵引作业。

Brief introduction

G2 series 2-7 ton lithium battery tractor, with huge improvement on layout and operating performance, is a new product designed by HELI .With low step height, the tractor realized both strength of stand-on tractor that low step height which allows for easy entry and exit and strength of sit-down tractor that sit-down driving which provide comfortable driving and reduce operator fatigue.

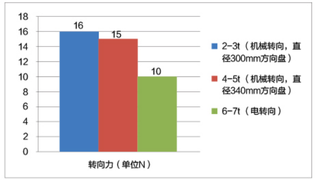
HELI R&D system that “Oriented by market demand” and core values that “people-oriented and repay the society with high quality products” are fully expressed by G2 series 2-7 ton lithium battery tractor.

The tractor is mainly used in car industry, postal service, medicine, tobacco, and other transport and logistics industry.

转向系统 Steering system

- 2-5吨锂电池牵引车采用齿轮式机械转向，结构可靠、转向力小，符合助力转向系统的转向力要求。
- 6-7吨锂电池牵引车采用电子转向，选用进口交流转向控制系统，实现闭环控制、CAN总线通讯、转弯限速、转向角度显示、开机自动回位功能。

- 2-5t lithium battery tractor adopts reliable gear type mechanical steering system. The steering force is light and meets power-assisted steering system
- requirement.
  6-7t lithium battery tractor adopts electric steering control system. With imported steering controller, closed-loop control, CAN communication , limited steering speed, display of steering angle and automatic back to center position when starting are realized.



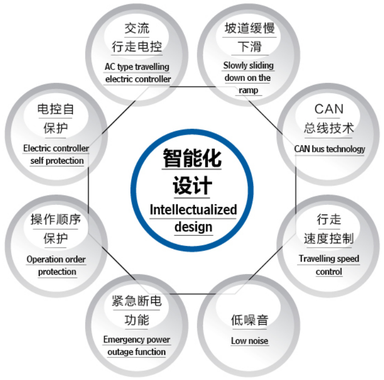
驱动系统 Driving system

- 采用交流驱动系统，闭环控制。有坡道缓慢下滑、CAN总线通讯、车辆微动等功能。
- 驱动电机采用低压三相交流异步电机，电机配有速度编码器和温度传感器，速度编码器外置在电机的后端部，维修方便。

- With AC driving system, the tractor has functions of close-loop control, slowly sliding down on the ramp, can communication, inching centering and so on.
- Low voltage three phase AC type asynchronism motor is used for driving. There are speed encoder and temperature sensor in it. Speed encoder is outside installed at the rear end of the motor for easy maintenance.

更加优越的智能化设计 Superior intellectualized design

- 更多智能化设计的装备与功能使整车智能，这不仅保护驾驶者和整车安全，还提高工作效率，降低了能耗。
- Superior intellectualized designs not only ensure operator and truck safety but also improve working efficiency, reduce energy consumption.



操纵系统 Operating system

- 合理的制动踏板、加速踏板的角度及位置，轻巧的踏板力，充分满足人机工程要求。
- 采用可调式方向盘，方向盘的位置可前后调节，以适应不同体形驾驶员操纵的要求。
- 具有良好的制动功能，配置机械、液压及电制动三套独立的制动系统，安全可靠。

- Proper angle, position of braking pedal, acceleration pedal and
- slight pedal force fully satisfy ergonomic require.
- Adjustable steering wheel fits different operator’s size.
  With three independent braking system，mechanical，hydraulic，and electric，the brake is safe and reliable.

主要特点

- 满足欧洲市场及国内中高端用户开发。
- 优越的人机工程性能，使驾驶员很舒服地操纵所有的按钮和踏板，有助于缓解驾驶疲劳。
- 低踏板，上下非常方便。
- 采用交流驱动和转向控制系统，高效率、低能耗。
- 前进及后退双向微动功能，可实现单人脱、挂销作业。
- 6-7吨具有转弯限速功能，安全可靠。
- 高效的传动系统设计，爬坡强劲、动力充沛。
- 选配便捷式牵引机构，驾驶员不离开座椅即可操纵牵引销。

Main charateristics

- The tractor was designed for Euro-market and domestic high-end market.
- Ergonomically designed compartment allows easy operation of all controls and pedals to help reduce operator fatigue.
- Low step height allows easy entry and exit.
- AC control system is adopted on driving and steering which provide high efficiency and low energy-consumption.
- With foreward&backward inching button at both side，connect&release the pin can be realized by oneself.
- With speed limit when turning so the tractor is more safe and reliable.
- Efficient transmission system provides a strong power while climbing.
- With the option of convenient towing mechanism，operator can control the pin without leaving the seat.