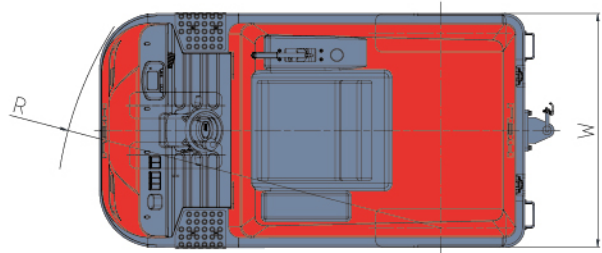
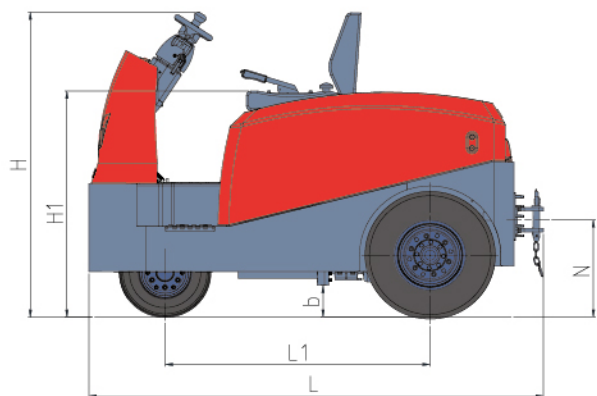


G 系列/ SERIES 5-6t

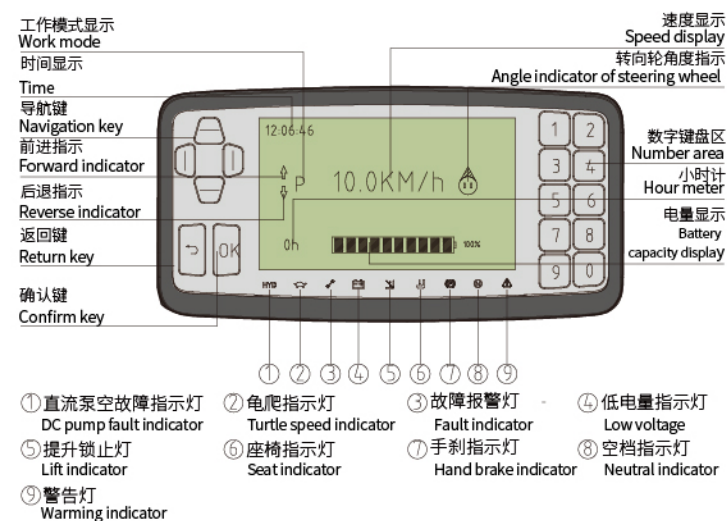


充电机技术 Charger technology



- > **高效:** 大于95%充电效率,符合节能减排要求。
- > **快速:** 最快2小时可完成100%全充电。
- > **兼容:** 48V/80V兼容,满足不同电压等级需求。
- > **安全:** 内置防反保护,具备失效自隔离功能;完善的故障自检提示,方便客户维护。
- > **High Efficiency:** Charging efficiency higher than 95% meeting the requirements of energy saving and emissions reduction
- > **Speediness:** 100% charging realized in 2 hours at the soonest
- > **Compatibility:** 48 v / 80 v compatibility meeting the demand of different voltage levels
- > **Safety:** Built-in mis-connecting protection offering self isolating function under fault;
- > **Perfect fault self checking alarm** facilitating users maintenance .

智能仪表 Smart meter



可靠的智能仪表将整车的运行状态、故障检测等重要信息完整地显示出来,使操作者更直观、方便地了解车辆的状况。
Vehicle working condition can be known directly and easily through smart meter. Such as speed, working hours, battery level, fault code, etc.

能量再生技术 RENEWABLE ENERGY TECHNOLOGIES

交流控制能量再生技术,使电动牵引车更节能,蓄电池单作业循环时间最大延长15%。
With AC type energy regeneration technology, the working hour of single battery shift is 15% increased.



技术参数 Technical Parameters

项目 Item	单位 Unit	5-6吨电转向锂电池牵引车 5-6ton electric steering lithium battery tractor	
1 车型 Model		QYD50S-F3Li	QYD60S-F3Li
2 驾驶方式 Driving mode		坐式 seated	
3 额定牵引重量 Reated towing weight	kg	5000	6000
4 自重 Service weight	kg	1200	1200
5 额定牵引力 Reated traction force	N	4000	4000
6 最大牵引力 Max. traction force	N	8000	8100
7 行驶速度 (满载/空载) Travelling speed (unloaded/loaded)	km/h	10/15	
8 爬坡能力 (满载/空载) Gradeability (unloaded/loaded)	%	6/20	
9 外形尺寸:长x宽x高 Overall dimension: LxWxH*	mm	2060x1080x1410	
10 轴距 Wheelbase	mm	1200	
11 轮距 Tread	mm	前 Front 230	后 Rear 905
12 最小转弯半径 Min. steering radius	mm	1800	
13 最小离地间隙 Min. ground clearance	mm	120	
14 前悬 Front overhang	mm	365	
15 后悬 Rear overhang	mm	380	
16 牵引挂钩高度 Traction hook height	mm	350/450	
17 轮胎 Tyre	mm	前轮 Front 2x4.00-8	后轮 Rear 2x6.50-10-10PR
18 行车制动 Service brake		液力制动 Hydraulic brake	
19 驻车制动 Parking brake		机械制动 Mechanical brake	
20 驱动方式 Driving type		后轮驱动 Rear drive	
21 驱动电机功率 Driving motor power	kW	8 (AC)	
22 转向电机功率 Steering motor power	kW	0.6 (AC)	
23 电池电压/容量 Battery voltage/capacity	V/Ah	48/271	
24 电池重量 Battery weight	kg	220	
25 行驶控制方式 Driving control mode		电子无极式 Electronic stepless mode	
26 驾驶员耳边噪音 Operator's ear noise	dB	< 70	

标准配置 Standard configuration	选用装置 Optional configuration	锂电池选项 Lithium battery options
液晶仪表 Liquid crystal meter	半封闭驾驶室 Semi-closed cab	48V/320Ah (中盐 CNSG HONG SIFANG) (QYD50/60S-F3LI)
前轮实心胎后轮充气胎 Solid tyre (front) and pneumatic tyre (rear)	后轮实心胎 Solid tyre for rear wheel	48V/400Ah (中盐 CNSG HONG SIFANG) (QYD50/60S-F3LI)
	无痕迹实心胎 Traceless solid tyre	48V/404Ah (鹏成 Pengcheng) (QYD50/60S-F3LI)
	杆式警示灯 Pole type warning light	
	自选涂装 Customized painting	
	多层牵引座 Multilayer traction base	
	紧急断电开关 Emergency power	
	倒车镜装置 Backview mirror	
	灭火器 Fire extinguisher	



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设计/制图: 李斌/2015.09.2022.01.14



5-6t G系列电转向锂电池牵引车 G series electric steering lithium battery tractor





整车简介 Brief Introduction

G系列5-6吨电转向锂电池牵引车是合力倾力打造的新一代环保型牵引车辆，造型新颖，性能可靠，按照人机工程原理来满足驾驶员乘坐、操作空间、环保性等一系列舒适性方面的要求。

该车型系三轮支承，前轮转向、后轮驱动，以锂电池组提供动力，分别采用进口交流驱动控制和进口交流转向控制的电动牵引车。具有转向轻便、低噪音、牵引力大、操作简便等特点。

G series 5-6t electric steering lithium battery tractor which has popular appearance and reliable performance is a new generation of environment friendly tractor designed by HELI. With ergonomic design principle, driving comforts in sitting, operation space and environmental protection are ensured.

The three-wheel tractor is powered by lithium battery. The steering wheel is front wheel and the drive wheel is rear wheel. Imported driving controller and type steering controller are assembled on the tractor. The tractor has low noise, powerful traction force, easy operation and flexible steering.

锂电池优势 Lithium battery advantages

绿色环保 Environment Friendliness

- 零排放 • Zero emission
- 低噪音 • Low noise
- 不含重金属 • Free of heavy metals
- 无滴漏腐蚀 • No corrosion
- 无酸雾挥发 • No acid mist volatilization

免维护 Maintenance Free

- 无需补液、防尘 • Unnecessary of fluid adding and dust proofing
- 免日常维护 • Daily maintenance free
- 免人工保养 • Manual maintenance free

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

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℃

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

转向系统 Steering system

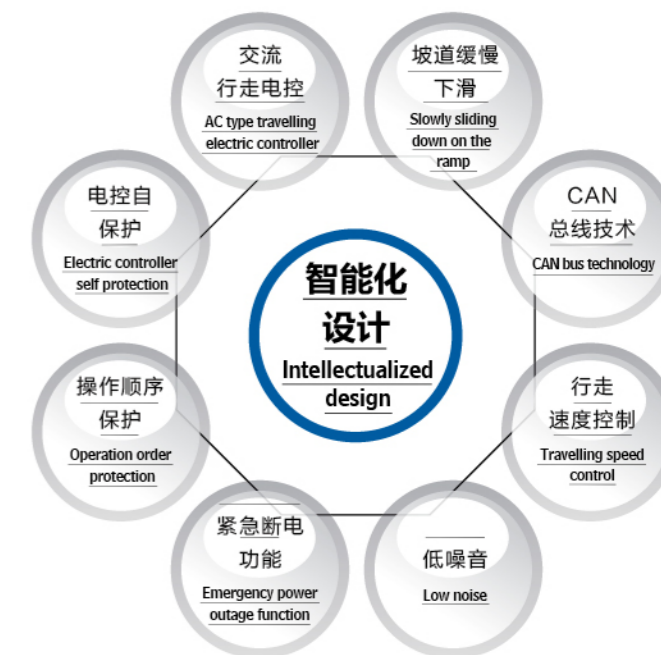
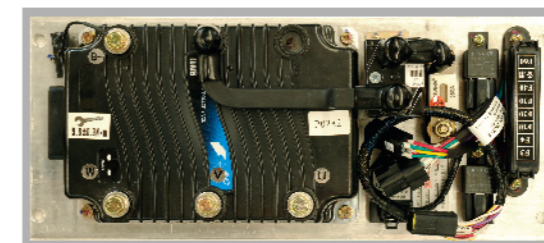
- 电子转向控制系统采用交流控制技术，控制器采用进口交流转向控制器，实现闭环控制、CAN总线通讯、接近开关限位保护、开机自动定位功能。
- 转向电机采用低压三相交流异步电机，电机配有速度编码器和温度传感器，额定功率0.6kW，IP44，转向信号输入设备采用双组输出编码盘，48位脉冲输出，限位保护采用接近开关，安全可靠。
- 具有转向限速、转向角度显示功能。
- AC control system is adopted on electric steering control system. Through CURTIS AC type steering controller, closed-loop control, CAN communication, proximity switch limit protection and automatic locate function when starting are realized.
- Low voltage three phase AC type asynchronism motor is used for steering. There are speed encoder and temperature sensor in it. Its rated power is 0.6kw and protection degree is IP44. Dual output encoder, 48 digit pulse output and proximity switch limit protection are used.
- It has steering speed limit and steering angle display functions.

驱动系统 Drive system

- 驱动控制系统采用交流控制技术，控制器采用进口交流驱动控制器，实现闭环控制、坡道停车、CAN总线通讯、点动对销、座椅开关、手制动车、刹车开关和4个PWM斩波输出端口等功能。
- 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。
- AC type control system is adopted for driving control system. CURTIS AC type driving controller is used. It has close-loop control, slope parking, CAN communication, inching centering, seat switch, parking brake switch, service parking brake and 4 PWM chopping output ports and other functions.
- 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，以适应不同体型驾驶员操纵的要求
- 具有良好的冷态制动效能，产生足够的制动力，使行车制动和驻车制动性能符合强制性标准的要求
- 装有点动按钮操作装置，可实现单人的拖、挂作业。
- Comfortable brake/accelerating pedal position with light stepping strength, fully meeting ergonomically demands.
- With front-rear adjustable steering wheel to satisfy different height drivers.
- With excellent cold-brake efficiency, enough brake force, fully meet the parking and driving brake standard.
- With forward&backward inching button, connect&release the pin can be realized by oneself.

可选配半封闭驾驶室 Fully closed cab and semi-closed cab are optional

