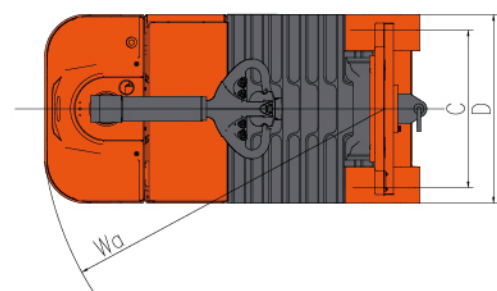
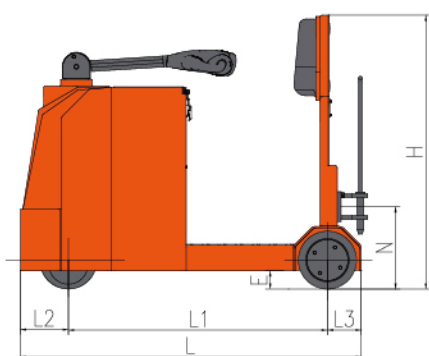


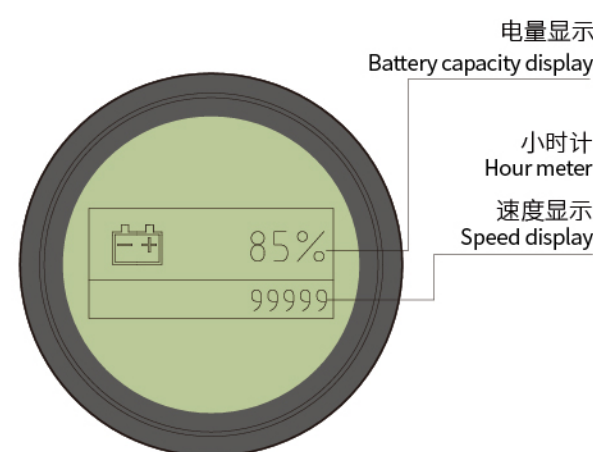
# 目录

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智能仪表 Smart meter



电量显示  
Battery capacity display

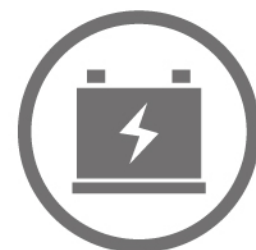
小时计  
Hour meter

速度显示  
Speed display



故障代码显示  
Error code display

注:静态时显示小时计,动态时显示速度。  
Notes:display working hour in static and speed in motion



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.

15%

技术参数 Technical parameters

项目 Item	单位 Unit	2-4.5t 站式锂电池牵引车 2-4.5 ton Stand-on Type Lithium Battery Tractor		
		QYD20S-LF3Li	QYD30S-LF3Li	QYD45S-LF3Li
1 车型 Model		QYD20S-LF3Li	QYD30S-LF3Li	QYD45S-LF3Li
2 驾驶方式 Driving mode			站式 stand-on	
3 额定牵引重量 Rated towing weight	kg	2000	3000	4500
4 自重 Service weight	kg	730	800	870
5 额定牵引力 Rated traction force	N	750	1250	1250
6 最大牵引力 Max. traction force	N	2200	2500	2700
7 行驶速度(满载/空载) Travelling speed (unloaded/loaded)	km/h	7/8		6/8
8 爬坡能力(满载/空载) Gradeability (unloaded/loaded)	%	5/10		4/10
9 外形尺寸:长x宽x高 Overall dimension:LxWxH	mm	1490x754x1200		
10 轴距 Wheelbase	mm	1130		
11 轮距 Tread	前 Front	单轮 Single wheel		
	后 Rear	630		
12 最小转弯半径 Min. steering radius	mm	1450		
13 最小离地间隙 Min. ground clearance	mm	80		
14 前悬 Front overhang	mm	210		
15 后悬 Rear overhang	mm	395		
16 牵引挂钩高度 Traction hook height	mm	260/360		
17 轮胎 Tyre	前 Front	mm	φ250x100	10x4x6.5
	后 Rear	mm	φ250x120	10x5x6.5
18 行车制动 Service brake	电磁制动和电磁制动 Electric brake and electromagnetic brake			
19 停车制动 Parking brake	电磁制动 Electromagnetic brake			
20 驱动方式 Driving type	前轮驱动 Front drive			
21 驱动电机功率 Driving motor power	kW	1.5 (AC)		2.6 (AC)
22 转向电机功率 Steering motor power	kW		0.15 (DC)	
23 电池电压/容量 Battery voltage/capacity	V/Ah		24/202	
24 电池重量 Battery weight	kg		100	
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		

可选配置 Optional configuration

可选配置 Optional configuration		锂电池选项 Lithium battery options	
前大灯 Head light	LED警示灯 LED warning light	24V/200Ah (中盐 CNSG HONG SIFANG) (QYD20/30S-LF3Li)	
聚氨酯轮胎 (3-4.5t) Polyurethane tire (3-4.5t)	自选涂装 Customized painting	24V/252Ah (中盐 CNSG HONG SIFANG) (QYD20/30/45S-LF3Li)	

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安徽合力股份有限公司  
ANHUI HELI CO., LTD.  
地址 / 中国 合肥方兴大道668号  
Add / No.668, FangXing Road, Hefei, China  
邮编 (Post Code) / 230000

客服热线 (Customer Service Hotline) / 4001-600761  
服务电话 (Service Tel) / +86-551-63689667,63689674,63689676  
邮箱 (Web site) / heli@helichina.com

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2-4.5 t  
G系列站式锂电池牵引车  
G Series Stand-on Type  
Lithium Battery Tractor



设计日期: 20210113



## 整车简介 Brief Introduction

**2-4.5t站驾式锂电池牵引车**是合力打造的新一代环保型牵引车辆，整车造型新颖，性能可靠，是区域物流领域的重要设备，主要用于汽车制造及大型工业企业内部的物料转运。该车型系三轮支承，以蓄电池组提供动力，驱动和转向均为前轮；整车采用进口交流电控装置进行无极调速，具有高效节能、低噪音、操作简单、转向轻便灵活等特点。

**2-4.5t stand-on type lithium battery tractor** is a new generation of environment friendly tractor designed by HELI. With popular appearance and reliable performance, the truck mainly used in material handling operation inside automobile manufacturing and large industrial enterprises is an important equipment in regional logistics. The lithium battery is powered by lithium battery. The steering wheel and drive wheel is front wheel. Imported AC type controller with stepless speed regulation is assembled on the tractor. The tractor has high energy efficiency, low noise, easy operation and flexible steering.

合力锂电池牵引车的优越性，更突出地体现在生命周期内使用成本上。与铅酸蓄电池牵引车相比，锂电池牵引车适合多班次场合，隐形成本低，整体运营成本更经济。

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

### 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

### 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

### 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



## 驱动系统 Driving system

- 采用合力自制驱动单元，结构紧凑、噪音小、无污染、运行平稳；
- 交流电机，无碳刷，无需日常保养。

- With HELI homebrew driving unit, the tractor has compact structure, low noise, no pollution and stable travelling.
- AC motor without carbon brush and free of daily maintenance is assembled.

## 制动系统 Braking system

- 采用交流再生制动技术，制动时可同时对蓄电池充电，节约能源；
- 具有坡道自制动功能，安全性强。

- With AC type energy regenerating technology, battery can be charged when braking and energy is saved.
- Self braking function on slope enhances tractor safety.



## 转向系统 Steering system

- 电转向车型采用先进的电转向技术，转向轻便、可靠，跟随性好。
- With electric steering technology, the tractor has reliable and easy steering and superior tracking character.

## 操纵系统 Operating system

- 合理的操作空间布置，优化的操作手柄，充分满足人机工程要求。
- Reasonable operating layout and optimized operating knob satisfy ergonomic requirements.

## 控制系统 Controlling system

- 交流电控自保护，免维护，噪音更低；
- 交流电机，无碳刷，无需日常保养。所有电机有温度传感器和速度传感器，避免电机意外损坏；
- 行走速度闭环控制，保证了整车行驶速度与加速的跟随性好，保证下坡按动加速器，不会失去控制；
- 爬坡时，动力充沛、强劲；
- 不用手动制动就可以实现空/满载情况下的坡道自动停车，安全性能优异。

- AC controller with self protection, free maintenance and low noise is assembled.
- AC motor without carbon brush and free of daily maintenance is assembled. Temperature sensor and speed sensor are assembled in all motors to protect motor from accidental damage.
- Close-loop control on travelling speed ensures superior tracking of travelling speed and acceleration and that the tractor will not be out of control when step on acceleration pedal.
- The tractor is powerful when going uphill.
- The tractor can stop on a slope automatically without hand brake under loaded or unloaded condition, ensuring superior safety.

## 其它 Others

- 蓄电池标配垂直起吊，可选配侧拉。
- 驾驶员不需下车就可挂、脱牵引销，效率更高。

- The battery can be pulled out from side as optional configuration. The standard battery changing way is lifted vertically.
- Connection & release between tractor and trailer can be realized by one person without leaving the tractor.

