



3.5-5吨H2000型内燃牵引车

H2000 SERIES 3.5-5T DIESEL POWERED INTERNAL-COMBUSTION TOW TRACTOR

标准配置 Standard configuration

全液压动力四轮制动 Hydraulic power brake acts on four wheels	倒车蜂鸣器 Backward buzzer	随机备件箱 Spare parts box with tractor
全液压横置油缸式动力转向 Fully hydraulic transverse cylinder steering	电风扇 Electric fan	橘红/蓝灰色涂装 Orange/steel gray painting
机械换向 Mechanical direction changing	前大灯 Front headlight	天窗 scuttle
全封闭驾驶室(含顶灯) Fully enclosed cab(with overhead light)	速度里程表 Speedometer	半包围双座椅 Double Semi-closed seat
高进气 High air intake	灭火消声器 Extinguishing muffler	防滑踏板 Antiskid footplate
液晶数字化仪表 LCD digital instrument	后工作灯 Rear working light	倒车镜 Rearview mirror
2kg干粉灭火器 2kg fire extinguisher		

选项配置 Optional configuration

电液换向 Electro-hydraulic direction changing	除霜装置 Defroster	排气火花熄灭器 Exhaust spark arrester
LED警示灯(闪光/旋转/旋转蜂鸣) LED warning light(flash/revolving/ revolving and buzzing)	防护栏 Guard rail	后窗防护栏 Guard grid of cab rear window
双层/多层牵引机构 Dual-layer/ multi-layer operation stick & pin component	总电源开关 Power switch	用户自选涂装 Customized painting
空调 Air conditioner	实心胎 Solid tyre	隔热防晒棚 Thermal insulation awning
暖风机 Warm air blower	倒车语音喇叭 Backward loud speaker	变速箱油温指示 Transmission oil temperature indicator
双空滤 Double air filter	前牵引座 Front traction seat	前推窗 Forward push window



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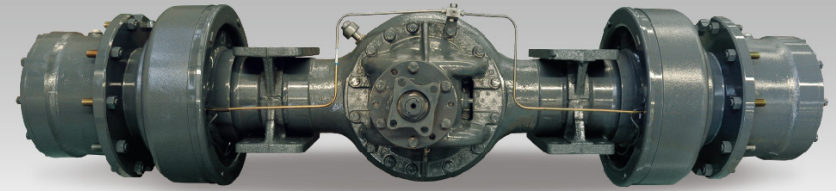
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» 整车简介 General Introduction

H2000型 3.5-5t内燃牵引车是安徽合力股份有限公司研制的新型柴油液力传动牵引车。整车充分利用了本公司成熟的设计、制造技术，整机由车身系统（含配重）、动力系统、传动系统、变速操纵系统、行车制动系统、油门操纵系统、转向系统、电气系统、前、后悬挂、转向桥、驱动桥、牵引销机构、驾驶室等部分组成。该车广泛应用于港口、邮政、机场、工矿企业等作业场合。

H2000 series 3.5-5t diesel powered internal-combustion tow tractor with tor-con is a series of new product designed by HELI. The whole tractor adequately adopts the mature design and manufacturing technology of our company. It's composed of bodywork system (including the rear counterweight), power system, transmission system, transmission control system, service brake control system, accelerator control system, steering system, electric system, front suspension ass'y, rear suspension ass'y, steering axle, drive axle, operation stick & pin component, cab and so on. The tractor is widely used for following working sites: ports, post, airports, industrial and mining enterprises and so on.



动力传动系统 Power and transmission system

采用工程机械专用的国内外知名品牌柴油机，其功率储备大，噪音低，环保性能好，可靠性高，整机排放要求符合国家最新环保要求。液力变速箱传动比合理，前进和后退均为两档且换挡平稳无冲击，具有良好的散热和密封性能。

Domestic or international famous diesel engine specially for engineering machinery are adopted which has characteristics of large power margin, low noise, environment friendliness, high reliability, the tractor meets national latest environment requirement. The transmission ratio of hydraulic powered transmission box is reasonable, both forward and backward are two gears, and the gear shifting is smooth and no impact. The transmission box have excellent cooling and sealing performance.

制动系统 Brake system

全液压动力行车制动系统使得制动简捷、轻便，安全、可靠，制动器性能符合GB10827.1-2014的有关规定，保证在发动机坡道意外熄火的情况下，仍然可以实现8脚以上的制动。前轮钳式结构的四轮制动使得制动性能更加优越。

采用制动切断动力技术，在脚踏制动阀上增加电控制动力切断阀开关，制动的同时通过切断阀切断变速箱动力输出，降低制动力矩，减少重载行车时的冲击力，延长了制动器使用寿命，降低使用成本。

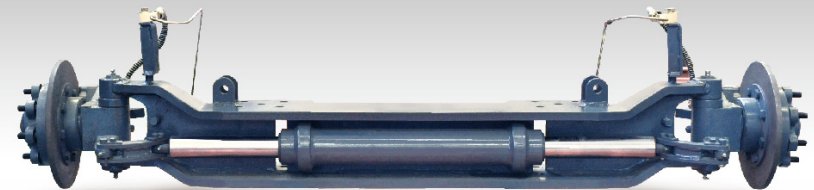
The tractor adopts fully hydraulic powered service brake system, has easy, secure and reliable braking. The brake performance is according to the relevant regulations of standard GB10827.1-2014, ensures effective brake for eight times after the engine is flame out on a slope. The four-wheel brake with front-wheel clamp structure makes the brake of superior performance.

Power cut-off technology during braking is adopted, the switch of electric controlled power shutoff valve is added on foot brake valve. Brake torque and shock when travelling with heavy load are reduced, brake service life is extended and cost is reduced because transmission power output is cut off by the shutoff valve while braking.

转向系统 Steering system

合力自行研发的处于国内领先水平的全液压横置油缸动力转向技术（其中转向油缸U形密封圈为进口件），刚性好，转向轻便、准确。该项技术解决了国内同类产品转向桥刚性不足、轮胎过早磨损、前桥早期报废等问题。

The tractor adopts HELI homemade domestic leading fully hydraulic transverse cylinder powered steering technology (the U-ring of cylinder is imported part), has good rigidity, has easy and accurate steering and operating feeling, thus effectively avoids the problems such as steering axle rigidity insufficient, tyre early worn out and front axle early discarding in domestic similar products.





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技术参数 Parameter

参数名称 Parameter	单位Unit	QYCD35-P	QYCD45-P	QYCD50-P	QYCD35-CU	QYCD45-CU	QYCD50-CU	QYCD35-YC1H	QYCD45-YC1H	QYCD50-YC1H	QYCD35-WXH	QYCD45-WXH	QYCD50-WXH	
1 最大牵引力 Max.drawbar pull	kN	35	45	50	35	45	50	35	45	50	35	45	50	
2 空载最大行驶速度(前进) Max.Travel speed(without load, forward)	km/h	24	24	24	23	23	23	24	24	24	23	23	23	
3 爬坡能力(空载) Grade ability (without load)	%	30												
4 最小转弯半径 Min.turning radius	mm	4100												
5 行车制动距离(空载Ⅱ档, 20Km/h) Service braking distance (without load,forward,2nd,20km/h)	m	≤5												
6 整车质量(含油水, 不含驾驶室) Total Weight(including oil and coolant,No cab)	kg	5840	6810	7630	5750	6750	7540	5740	6810	7600	5740	6810	7600	
7 发动机 Engine	型号 Model	Perkins 1104D- 44TA			Cummins QSB4.5-C110			玉柴YCA4115-T300			CA4DF3-13GG3U-HL10			
	缸径×冲程 Bore×stroke	4-105×127			4-110×120			4-108×132			4-110×125			
	额定功率/转速 Rated output	83/2200			82/2200			85/2200			96/2200			
	最大扭矩/转速 Max. output	418/1400			489/1500			500/1500~1700			500/1500~1700			
8 燃油箱容积 Fuel tank capacity	L	100												
9 外形尺寸 External dimensions	长 Overall length	3775 (不含前牵引座 without front coupler), 3950(含前牵引座 with front coupler)												
	宽 Overall Width	1995												
	高 Overall height	2350												
10 轴距 Wheel base	mm	2000												
11 轮距 Tread	前轮 Front	1720												
	后轮 Rear	1470												
12 最小离地间隙 Min.underground clearance	mm	190												
13 牵引座中心线离地高度 Center height of drawbar	mm	450(可选 customized)												
14 电压/容量 Battery (voltage/capacity)	V/Ah	2-6-QW-80 12V×2 80Ah×2 (免维护 maintenance-free)												
15 驱动桥型号 Drive axle		P32F3-00031												
16 变速箱 Transmission case	型号 Model	P3F23-40501			P7F63-80601			P7F83-80011J						
	变速型式 Type	无级变速 Stepless change speed 变矩器直径315 Tor-con diameter:315												
17 制动器 Brake apparatus	行车制动 Service brake	全液压四轮动力制动 Hydraulic oil acts on four wheels												
	停车制动 Parking brake	机械式, 作用于变速箱中间轴上 Mechanical type acts on the middle shaft of the transmission box												
18 轮胎 Tyre	前轮 Front	规格 Model	2-7.50-15-12PR											
		气压 Air pressure	790											
	后轮 Rear	规格 Model	4-8.25-15-14PR											
		气压 Air pressure	830											

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弹性悬挂装置 Suspension system

采用专业汽车配件生产厂家生产的前、后板弹簧悬挂装置。且前桥另装有筒式阻尼减震器，使得整机更加具有良好的平稳性。

The tractor adopt leaf spring suspension at front and rear axle which are made by professional auto parts manufacturers. Further more, the shock absorber is assembled on the front axle, which makes the tractor has favorable stability.

液压系统 Hydraulic system

合力自行研发的集成化齿轮泵，自带单稳分流阀，实现恒流输出，简化管路，减少故障点，提高液压系统可靠性。大容量的液压油箱足够满足工作和散热要求，工作油液温度 $\leq 90^{\circ}\text{C}$ 。

The tractor assembled with HELI homemade integrated gear pump. The pump integrated monostable shunt valve, thus gear pump constant flow output, simple pipeline and few fault points is achieved, and reliability of hydraulic system is improved. Enlarged hydraulic oil tank ensures working and cooling requirement. The hydraulic oil temperature in pipeline $\leq 90^{\circ}\text{C}$.

驾驶室 Cab

全框架结构的驾驶室具有足够的强度，室内宽敞且视野良好，可以实现全方位的观察。

驾驶室的前、后、左、右挡风玻璃均采用安全玻璃，且前玻璃装有两档多速控制雨刮器。

The fully framed cab has enough strength. What is more, the cab is wide and has good view from where omnibearing observing can be achieved.

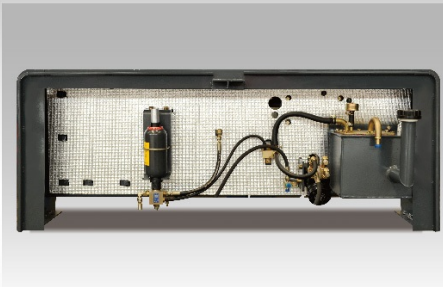
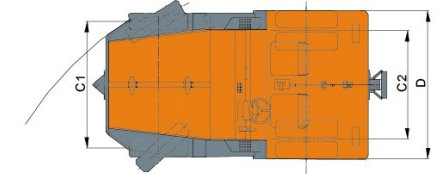
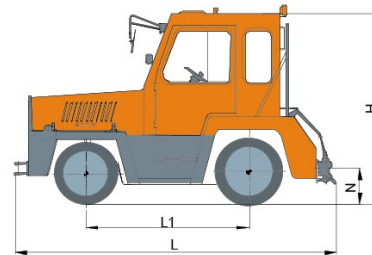
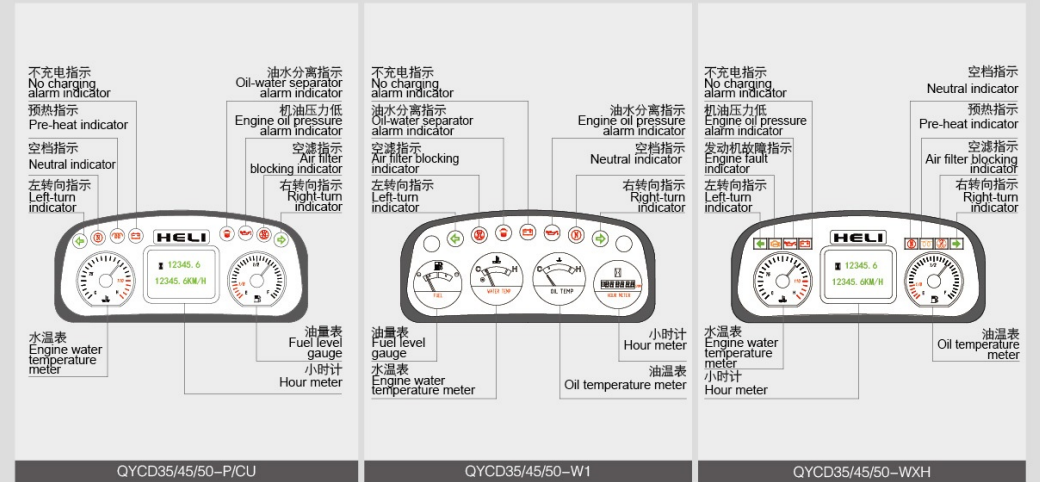
The front, rear, left and right windscreen of the cab are all safety glass, and the front glass is equipped with two-stage multi-speed control wiper.

操纵牵引销机构 Operation stick & pin component

设置在驾驶室内的操纵牵引销采用自动脱钩及自动导引机构，使得牵引作业方便、效率高。牵引机构的自锁功能有效避免因误操作或行车颠簸导致拖车脱销的隐患，提高行车安全性。

The tractor adopts traction pin mechanism with automatic unhook and automatic guide function, the traction pin is assembled in cab, the operation is easy and efficient. Self lock function of traction pin mechanism effectively avoids trailer hook suddenly off caused by vehicle jolt during travelling or mis-operation, improves travelling safety.

防水型组合式仪表 Waterproof combined instrument



整车选配——前推窗、单冷空调