H13MD 共轴动力套技术参数
H13MD Coaxial Propulsion System Specification

动力套参数 All-in-One Thrust System Specification

产品型号 Model	H13MD	适配锂电池 Compatible Lithium Battery	LiPo-24S~28S
额定电压 Rated Voltage	24S-92 V / 28S-108 V	电压范围 Input Voltage	30~130 V
推荐单轴起飞拉力 Recommended Single-Axis Takeoff Thrust	45 kg（海平面、环境温度25℃） 45 kg (sea level, ambient temperature 25℃)	推荐单轴起飞拉力力效 Efficiency of Recommended Single-Axis Takeoff Thrust	7.2 g/W
适用海拔 Operating Altitude	0~5000 m (不同环境温度下，海拔每升高 1500m，单轴起飞重量下调 5%~10%) (For every 1,500 m increase in altitude, the single-axis takeoff weight must be derated by 5% to 10% under different ambient temperatures.)	最大允许飞行速度（无风） Max Allowable Flight Speed (calm air)	15 m/s
适用环境温度 Operating Temperature	-40~65℃	防护等级 Ingress Protection	IP35
动力套重量（含线、含桨） Weight (with cable，propeller)	8010±100 g	适用碳管直径 Tube Outer Diameter	60 mm-2.5 mm壁厚 60 mm-Thickness: 2.5 mm
线材规格 Cable specification	电源线：12AWG*1440±20 mm 信号线：1640±20 mm Power cable：12AWG*1440±20 mm Signal cable：1640±20 mm	额定转速 Rated RPM	1634 rpm
额定输出功率（最大持续功率） Rated Output Power (max continuous)	5544 W	测试平台最大拉力 Test Bench Max Thrust	113 kg（海平面高度，环境温度xx℃） 113 kg (sea level, ambient temperature xx℃)
线序 Pinout	黑-GND，白-PWM；黄-GND, 灰-CANH，绿-CANL Black-GND, White-PWM & Yellow-GND, Gray-CANH, Green-CANL		

*本产品标注的拉力性能参数，均基于好盈封闭实验室（海平面，环境温度25℃）测试平台独立测试获得。
*在实际飞行工况中，受飞控系统适配程度、整机构型布局差异、重心配置状态等多重因素影响，各轴电机的实际输出功率并非完全均等，存在分配差异。产品选型时请充分考量上述工况偏差，建议以官方的推荐单轴起飞拉力参数作为选型依据。
*The thrust performance parameters of this product are independently measured on the test bench in Hobbywing's enclosed laboratory (sea level, ambient temperature 25℃).
*In real flight scenarios, multiple factors such as flight controller matching, differences in airframe configuration and layout, and center-of-gravity configuration can lead to unequal actual output power for motors on each axis, resulting in power distribution differences. Fully account for such operational deviations when selecting products; use the official recommended single-axis takeoff thrust parameters as the selection reference.

*以下测试平台指好盈科技内部的拉力台架测试平台。此数据是在单动力台架测得的单轴气动理想状态，用于供专业级用户在较为特殊整机气动设计时参考。
*受整机气动阻力及旋翼间气动干扰影响，装机后会产生气动损失，因此转速相同条件下实际输出的拉力相比于测试台架会略低，且不同构型的整机气动损失程度不同。因此推荐单轴起飞拉力会低于测试平台额定拉力，推荐值是基于我司4轴8桨 机型在起飞重量180kg整机，巡航速度15 m/s，环境温度25℃实飞测得。各机型最终适配需由具体机型以及应用条件决定。
*The test bench referred to below is Hobbywing's internal thrust test bench. All the data is obtained from single propulsion system test bench, under ideal single-axis aerodynamic conditions, only as reference for professional users dealing with special areodynamic design of drone.
*After the propulsion system is installed on the drone, there will be aerodynamic losses due to the aerodynamic drag of the entire drone and aerodynamic interference between rotors, and the aerodynamic loss varies with different configurations. Therefore, the actual thrust output will be slightly lower than the bench test result at same RPM. That's why the recommended single-axis takeoff thrust is lower than the test bench rated thrust. This recommended value was measured from actual flight tests of our 4-axis, 8-rotor model with a takeoff weight of 110kg, cruising speed of 15m/s, and ambient temperature of 25℃. The final configuration shall be determined by the specific model and operating conditions.

电调技术参数 ESC Specification

电压范围 Input Voltage	30~130 V	通讯方式 Communication Protocol	HWCAN/DroneCAN
电调尺寸 ESC Size	/	重量（不含线） Weight (without cable)	/
最大电流（3s） Peak Current（3s）	150 A @92V	持续电流 Continuous Current	60 A @92V
防护等级 Ingress Protection	IPX5	油门源 Throttle Source	PWM+CAN
PWM脉宽 Operating Pulse Width	1100~1940 μs	黑匣子功能 Black Box	故障数据 + 2~48小时日志 Fault data and 2~48-hour log
油门行程校准 Throttle Range Calibration	固化不可校准，软件可修改范围 Solidified and cannot be calibrated (can be changed via DataLink software)		

电机技术参数 Motor Specification

KV值 KV	37 KV	槽极数 Slot & Pole	36N42P
电机外径 Motor Diameter	147.9 mm	电机重量 (含线) Weight (with cable)	2450 g
防护等级 Ingress Protection	IPX5	桨叶安装尺寸 Propeller Mounting Dimensions	D60-6*M8，中心孔D20 D60-6*M8, centre hole D20
额定功率密度 Rated Power Density	1.12 kW/kg		

桨叶参数 Propeller Specification

产品型号 Model	MSC 57x20	重量 Weight	480 g
主要材质 Material of Propeller	碳纤维复合材料 Carbon fiber composite material	安装尺寸 Mounting Dimensions	D60-6*M8，中心孔D20 D60-6*M8, centre hole D20
安装螺丝锁紧扭矩 Mounting Screw Tightening Torque	6 N·m	适用海拔 Operating Altitude	0~3000 m
桨叶旋转中心到桨尖的长度 Propeller Radius (from rotation center to tip)	723.9mm		
产品型号 Model	MFC 57x20	重量 Weight	805 g
主要材质 Material of Propeller	碳纤维复合材料 Carbon fiber composite material	安装尺寸 Mounting Dimensions	D60-6*M8，中心孔D20 D60-6*M8, centre hole D20
安装螺丝锁紧扭矩 Mounting Screw Tightening Torque	6 N·m	适用海拔 Operating Altitude	0~3000 m
桨叶旋转中心到桨尖的长度 Propeller Radius (from rotation center to tip)	701.4mm		