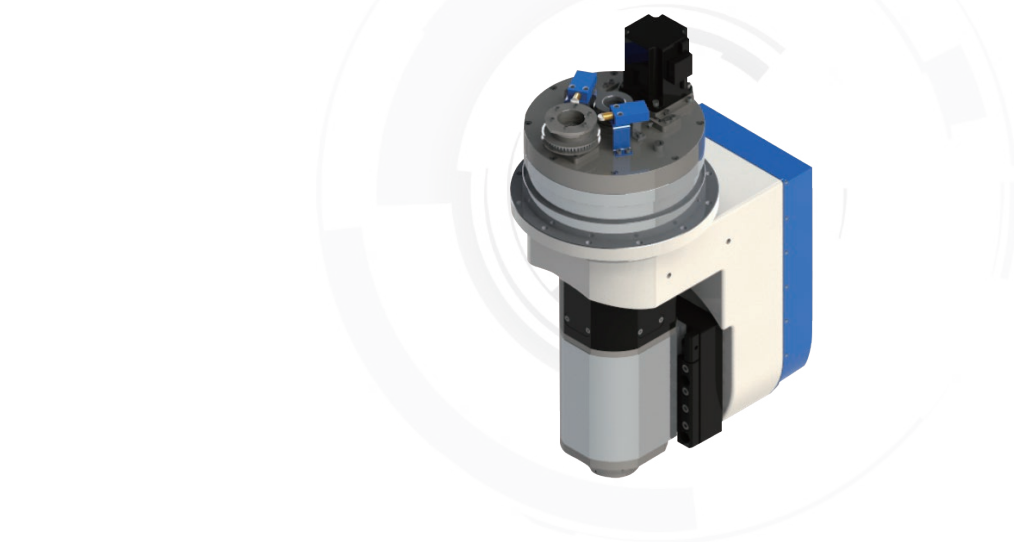


DBRP-262-218/98-390/421
减速器摆头 Swing head of reducer



高配置

A.高品质主轴:配置大功率电机,最高转速达24000rpm,额定扭矩可达14N.m,配置昊志自主知识产权的拉刀机构,换刀寿命超过1000万次,比传统拉刀机构整机振动值降低30%。独特的水道设计,冷却性能更优异。

B.高性能减速器:A轴配置我司DHS G-50-100谐波减速器,减速比可达1:101,输出端额定扭矩达390N.m,为主轴提供良好的传动精度和扭矩支持。C轴采用RV减速器,倾覆刚性达1960N.m/arcmin,扭转刚性达255N.m/arcmin,刚性更强,能适应更大载荷的加工环境。

高效率

A/C轴皆配置高精度伺服电机,内置24位绝对值编码器,最小执行单元≤0.001°,自带免调整功能,在不同载荷下可自动调整参数,使电机体现良好的响应性和振动抑制功能,将摆头的稳定性始终保持在较高水平,提高加工效率。

高精度

主轴轴芯端面及锥孔跳动≤0.002mm,标准棒150mm处径向跳动≤0.01mm,主轴振动≤1.5mm/s,A轴定位精度±30",重复精度±10",C轴定位精度±30",重复精度±10",能够广泛应用于实木、铝型材及碳纤维等复合材料加工。

轻量化设计

整机体积小,重量轻,结构紧凑,抗变形能力好,模块化程度高,能适应大多数加工条件。

High configuration

A. High-quality spindle: It is equipped with a high-power motor, with the max. speed of 24,000 rpm and rated torque of 14N.m. It is also designed with HAOZHI broach mechanism with IPRs with tool change life of more than 10 million times. Compared with traditional broach mechanism, it has reduced the overall vibration value by 30%; unique water channel design and superior cooling effect.

B. High-performance speed reducer: Spindle A shaft is equipped with our DHS G-50-100 harmonic reducer with the reduction ratio reaching 1:101 at maximum. The rated torque at output end can reach 390N.m, providing high transmission accuracy and torque support for spindle. Spindle C shaft is designed with RV reducer, with overturning rigidity up to 1,960N.m/arcmin, and torsional rigidity up to 255N.m/arcmin. With a higher rigidity, it could be used for processing with a larger load.

High efficiency

A/C shaft is equipped with high-precision servo motor and 24-bit absolute encoder. The smallest execution unit is ≤0.001°. It has adjustment-free function and supports automatic parameter adjustment under different loads so that the motor could give responsiveness and vibration suppression. Swing head always remains at a high level, improve processing efficiency.

High precision

The runout of spindle core face and taper hole of spindle is ≤0.002mm, the radial runout of standard rod at 150mm is ≤0.01mm, the spindle vibration is ≤1.5mm/s. As for shaft A, the positioning accuracy is ±30" while the repeatability accuracy is ±10". As for shaft B, the positioning accuracy is ±30" while the repeatability accuracy is ±10". Therefore, it can be widely applicable in the processing of composite materials such as solid wood, aluminum profiles, carbon fiber, etc.

Stable and reliable

The entire machine has small size, light weight, compact structure, good deformation resistance, high modularity, and can adapt to most processing conditions.

DBRP-262-218/98-390/421
减速器摆头 Swing head of reducer

技术参数
Technical parameter

摆头型号 2-Axis Head Model	DBRP-262-218/98-390/421	
	摆动轴 Swing Axis	旋转轴 Rotary Axis
额定转速 Rated Speed(rpm)	14	15
最高转速 Maximum Speed(rpm)	28	30
额定扭矩 Rated Torque (N.m)	390	421
最大扭矩 MaximumTorque (N.m)	1274	1225
定位精度 Measuring system Accuracy(arcsec)	±30	±30
重复精度 Repeatability Accuracy(arcsec)	±10	±10
旋转角度 Axis Rotation (deg)	±120	±225
安装尺寸 Mounting Dimension (mm)	φ262	
整机重量 Product Weight (kg)	123	

电主轴型号 Spindle Model	DGZM G-07524/18-KPWCS
最高转速 Max.Speed(rpm)	24000
额定功率 S1 Rated power S1(kW)	15
额定功率 S6 Rated power S6(kW)	18
额定扭矩 S1 Rated TorqueS1 (N.m)	12
额定扭矩 S6 Rated TorqueS6 (N.m)	14
刀柄接口 Toolinterface type	HSK F63
冷却方式 Cooling method	水冷 Water cooling

DBDB-335-100-810-A26W-A1
力矩电机摆头 Swing head of torque motor



高刚性

优化的轴承配置和轴系设计,牢固可靠的机体结构,使摆头和主轴均获得极高刚性,整机轴端的轴向刚性超过170N/μm,径向刚性超过300N/μm,A轴两侧配备创新的刹车机构,夹紧刚性强且稳定。

High rigidity

The optimal design of bearing and spindle as well as firm and reliable body contribute to extremely high rigidity of swing head and spindle. The axial rigidity at shaft end is higher than 170N/μm while the radial rigidity is higher than 300N/μm. Innovative brake mechanisms are set at both sides of shaft A to ensure strong and stable clamping rigidity.

高效率

采用昊志最新一代力矩电机,相较于传统的力矩电机功率密度提升42.7%,扭矩提升63%,动态响应性能极佳,配合高转速大扭矩电主轴,无论是低速重切还是高速精铣,均能获得极高的加工效率,可轻松胜任复杂零件的高效铣削加工。

High efficiency

The product is designed with HAOZHI' s latest torque motor, which increases power density by 42.7% and torque by 63%, compared with traditional torque motor. The dynamic response performance is excellent. With the high-speed high-torque electric spindle, it could realize extremely high processing efficiency in both low-speed re-cutting and high-speed finish milling.

高精度

内置高分辨率绝对式编码器和昊志高性能力矩电机,整机响应速度快,具有极佳的定位精度和重复定位精度,搭配昊志高速高精密电主轴,确保5轴加工过程中获得超高的精度和表面效果。

High precision

With high-resolution absolute encoder and HAOZHI high-performance torque motor, the product boasts a fast response speed, and extremely high accuracy of positioning and repeated positioning. It is also fitted with HAOZHI high-speed high-precision electric spindle to realize ultra-high precision and surface effect in the 5-shaft machining process.

灵活定制

摆头采用模块化设计,支持安装多种不同功能的电主轴,兼容市面上主流的通讯协议,可根据客户需求进行灵活的搭配定制。

Flexible customization

The swing head in modular design supports the installation of electric spindles with different functions and is also compatible with the mainstream communication protocol on market. It supports flexible configuration and customization based on customer' s needs.

DBDB-335-100-810-A26W-A1
力矩电机摆头 Swing head of torque motor

技术参数 Technical parameter	
摆头型号 2-Axis Head Model	DBDB-335-100-810-A26W-A1
安装法兰尺寸 Size of mounted flange(mm)	φ335g7
额定电压 Rated voltage(V)	220
额定扭矩 Rated torque(N.m)	810
最大扭矩 Max. torque(N.m)	1150
额定转速 Rated speed(rpm)	100
刹车夹紧扭矩 Brake clamping torque(N.m/0.55MPa)	≥2800
编码器 Encoder	发那科 27 位 (FANUC 27 bit)
定位精度 Positioning accuracy(arcsec)	±7.5 (15)
重复精度 Repeated accuracy(arcsec)	±2
冷却系统 Cooling system	水冷 Water cooling
产品重量 Product weight(kg)	≈353

电主轴参数 Electric spindle parameters	
额定转速 Rated speed(rpm)	4410
最高转速 Max. speed(rpm)	12000
额定电压 Rated voltage(V)	380
额定频率 Rated frequency(Hz)	294
最高频率 Maximum frequency(Hz)	800
连续额定输出功率 Continuous rated output power(S1-100%/kW)	37
连续额定输出扭矩 Continuous rated output torque(S1-100%/N.m)	80
连续额定输入电流 Continuous rated input current(S1-100%/A)	75
最大电流 Maximum current(A)	124
冷却系统 Cooling system	水冷 Water cooling
刀柄接口 Knife handle interface	HSK-T63
拉刀力 Broaching force (N)	20000-28000
卸刀方式 Tool unloading mode	液压卸刀 Hydraulic unloading tool
编码器信号 Encoder signal	Sin/Cos, 1Vpp
主轴安装直径 Mounting diameter of spindle(mm)	φ210h5
轴端锥孔跳动 Runout of taper hole of shaft end(mm)	0.001
轴端面跳动 Runout of shaft end surface (mm)	0.001



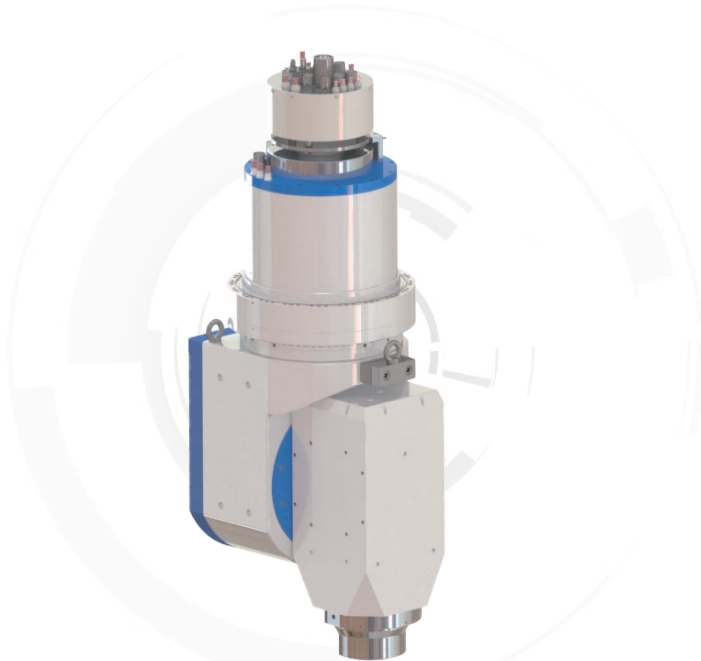
摆头系列

Swing Head Series



广州市昊志机电股份有限公司
GUANGZHOU HAOZHI INDUSTRIAL CO.,LTD

DBDP-310-60/60-250/350-A26W-A/A
力矩电机摆头 Swing head of torque motor



高刚性

优化的轴承配置和轴系设计,使摆头和主轴均获得极高刚性,整机轴端的轴向及径向刚性均超过150N/μm,切削承载能力优秀,内置创新的夹紧机构,体积小、响应速度快,夹紧刚性高。

High rigidity

The optimal design of bearing and spindle contributes to extremely high rigidity of swing head and spindle. Furthermore, the axial and radial rigidity of the shaft end of the whole machine exceeds 150N/μm. It is also excellent in cutting load capacity. The built-in innovative clamping mechanism has a small volume, fast response speed and high clamping rigidity.

高效率

采用昊志最新一代力矩电机,相较于传统的力矩电机功率密度提升42.7%,扭矩提升63%,动态响应性能极佳,配合高转速大扭矩电主轴,无论是低速重切还是高速精铣,均能获得极高的加工效率。

High efficiency

The product is designed with HAOZHI' s latest torque motor, which increases power density by 42.7% and torque by 63%, compared with traditional torque motor. The dynamic response performance is excellent. With the high-speed high-torque electric spindle, it could realize extremely high processing efficiency in both low-speed re-cutting and high-speed finish milling.

高精度

内置高分辨率绝对式编码器和昊志高性能力矩电机,整机响应速度快,具有极佳的定位精度和重复定位精度,搭配昊志高速高精电主轴,确保5轴加工过程中获得超高的精度和表面效果。

High precision

With high-resolution absolute encoder and HAOZHI high-performance torque motor, the product boasts a fast response speed, and extremely high accuracy of positioning and repeated positioning. It is also fitted with HAOZHI high-speed high-precision electric spindle to realize ultra-high precision and surface effect in the 5-shaft machining process.

灵活定制

摆头采用模块化设计,支持安装多种不同功能的电主轴,兼容市面上主流的通讯协议,可根据客户需求进行灵活的搭配定制。

Flexible customization

The swing head in modular design supports the installation of electric spindles with different functions and is also compatible with the mainstream communication protocol on market. It supports flexible configuration and customization based on customer' s needs.

DBDP-310-60/60-250/350-A26W-A/A
力矩电机摆头 Swing head of torque motor

技术参数 Technical parameter		
轴类型 Shaft type	摆动轴 Swing shaft	旋转轴 Rotation shaft
安装法兰尺寸 Size of mounted flange(mm)	/	φ310g7
额定电压 Rated voltage(V)	380	380
额定扭矩 Rated torque(N.m)	248	386
最大扭矩 Max. torque(N.m)	496	772
额定转速 Rated speed(rpm)	60	60
刹车夹紧扭矩 Brake clamping torque(N.m/0.6MPa)	1080	2160
编码器 Encoder	(Drive-ClIQ26位绝对式) (Drive ClIQ26 bit absolute)	(Drive-ClIQ26位绝对式) (Drive ClIQ26 bit absolute)
定位精度 Positioning accuracy(arcsec)	±10	±10
重复精度 Repeated accuracy(arcsec)	±2	±2
冷却系统 Cooling system	水冷 Water cooling	
产品重量 Product weight(kg)	≈334	

电主轴参数 Electric spindle parameters

额定转速 Rated speed(rpm)	6000
最高转速 Max. speed(rpm)	20000
额定电压 Rated voltage(V)	380
额定输出功率 Rated output power(S1-100%/S6-40%)(kW)	20/30
额定输出扭矩 Rated output torque(S1-100%/S6-40%)(N.m)	30.7/46
额定电流 Rated current(A)	38
刀柄接口 Knife handle interface	HSK-A63
刀具拉紧力 Tool tension(N)	18000-24000
卸刀压力 Tool unloading pressure	4.0-8.0MPa
标准检验棒10mm处跳动(mm) Runout of standard test bar at 10mm (mm)	≤0.003
标准检验棒300mm处跳动(mm) Runout of standard test bar at 300mm (mm)	≤0.008
冷却需求 Cooling demand	3.5kW(介质:水) Medium: Water
编码器 Encoder	Z=128,sin/cos 1Vpp
主轴振动值 Spindle vibration value (mm/s)	≤1
轴承润滑方式 Bearing lubrication mode	油脂润滑 Grease lubrication
电机绕组温度检测 Motor winding temperature detection	KTY84-130 PTC

DBDB-335-100/100-770/820-A26W/-A/A
力矩电机摆头 Swing head of torque motor



高刚性

优化的轴承配置和轴系设计,牢固可靠的机体结构,使摆头和主轴均获得极高刚性,整机轴端的轴向刚性超过240N/μm,径向刚性超过310N/μm,A轴两侧配备创新的刹车机构,夹紧刚性强且稳定。

High rigidity

The optimal design of bearing and spindle as well as firm and reliable body contribute to extremely high rigidity of swing head and spindle. The axial rigidity at shaft end is higher than 240N/μm while the radial rigidity is higher than 310N/μm. Innovative brake mechanisms are set at both sides of shaft A to ensure strong and stable clamping rigidity.

高效率

采用昊志最新一代力矩电机,相较于传统的力矩电机功率密度提升42.7%,扭矩提升63%,动态响应性能极佳,配合高转速大扭矩电主轴,无论是低速重切还是高速精铣,均能获得极高的加工效率,可轻松胜任复杂零件的高效铣削加工。

High efficiency

The product is designed with HAOZHI' s latest torque motor, which increases power density by 42.7% and torque by 63%, compared with traditional torque motor. The dynamic response performance is excellent. With the high-speed high-torque electric spindle, it could realize extremely high processing efficiency in both low-speed re-cutting and high-speed finish milling.

高精度

内置高分辨率绝对式编码器和昊志高性能力矩电机,整机响应速度快,具有极佳的定位精度和重复定位精度,搭配昊志高速高精电主轴,确保5轴加工过程中获得超高的精度和表面效果。

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With high-resolution absolute encoder and HAOZHI high-performance torque motor, the product boasts a fast response speed, and extremely high accuracy of positioning and repeated positioning. It is also fitted with HAOZHI high-speed high-precision electric spindle to realize ultra-high precision and surface effect in the 5-shaft machining process.

灵活定制

摆头采用模块化设计,支持安装多种不同功能的电主轴,兼容市面上主流的通讯协议,可根据客户需求进行灵活的搭配定制。

Flexible customization

The swing head in modular design supports the installation of electric spindles with different functions and is also compatible with the mainstream communication protocol on market. It supports flexible configuration and customization based on customer' s needs.

DBDB-335-100/100-770/820-A26W/-A/A
力矩电机摆头 Swing head of torque motor

技术参数 Technical parameter		
轴类型 Shaft type	摆动轴 Swing shaft	旋转轴 Rotation shaft
安装法兰尺寸 Size of mounted flange(mm)	/	φ335g7
额定电压 Rated voltage(V)	220	220
额定扭矩 Rated torque(N.m)	764	810
最大扭矩 Max. torque(N.m)	1528	1150
额定转速 Rated speed(rpm)	100	100
刹车夹紧扭矩 Brake clamping torque(N.m/0.6MPa)	2160	2800
编码器 Encoder	(Endata 2.2 26位) (Endata 2.2 26 bit)	(Endata 2.2 27位) (Endata 2.2 27 bit)
定位精度 Positioning accuracy(arcsec)	±7.5(15)	±7.5(15)
重复精度 Repeated accuracy(arcsec)	±2	±2
冷却系统 Cooling system	水冷 Water cooling	
产品重量 Product weight(kg)	≈555	

电主轴参数 Electric spindle parameters

额定转速 Rated speed(rpm)	5500
最高转速 Max. speed(rpm)	18000
额定电压 Rated voltage(V)	350
额定频率 Rated frequency(Hz)	275
最高频率 Maximum frequency(Hz)	900
连续额定输出功率 Continuous rated output power(S1-100%/kW)	35
连续额定输出扭矩 Continuous rated output torque(S1-100%/N.m)	60.7
连续额定输入电流 Continuous rated input current(S1-100%/A)	70
最大电流 Maximum current(A)	150
冷却系统 Cooling system	水冷 Water cooling
刀柄接口 Knife handle interface	HSK-A63
拉刀力 Broaching force (N)	25000(1±15%)
卸刀方式 Tool unloading mode	液压卸刀 Hydraulic unloading tool
编码器信号 Encoder signal	Sin/Cos, 1Vpp
主轴安装直径 Mounting diameter of spindle(mm)	φ180h5
轴端锥孔跳动 Runout of taper hole of shaft end(mm)	0.001
轴端端面跳动 Runout of shaft end surface (mm)	0.001



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