Physis 菲仕

ROTARY CROSS-CUTTING MACHINE SOLUTION

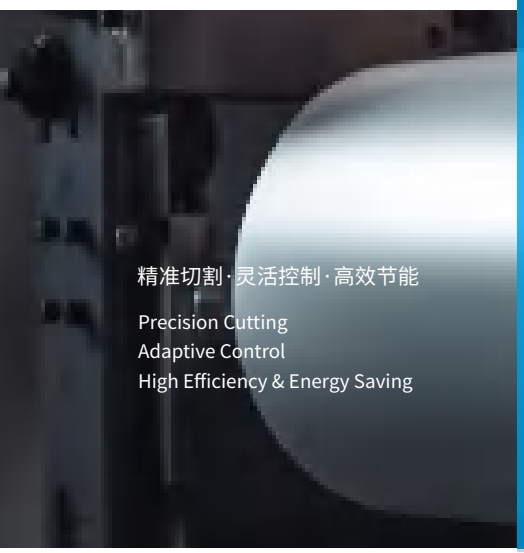
横切机解决方案

精准切割·灵活控制·高效节能

Precision Cutting·Adaptive Control·High Efficiency & Energy Saving

宁波菲仕技术股份有限公司

横切机解决方案
Rotary Cross-cutting Machine Solution



产品特点
Product Features

高性能伺服驱动器
High-Performance Servo Drive

内置PLC
直控驱动器，指令执行快速；支持5种PLC语言二次开发；嵌入式PLC控制卡取代外部运动控制器，节省空间和成本。

Built-in PLC
Direct drive control with rapid command execution;
5 IEC 61131-3 compliant programming languages for secondary developmen;
Embedded PLC control card replaces external motion controllers, saving space and costs.

高速电流环
1μs电流环周期（1000kHz刷新），实时补偿技术实现±1%/2rpm扭矩精度。循环周期0.125ms，DI端口采样为0.125ms。

High-Speed Current Loop
1μs current loop cycle (1000kHz refresh rate)
Real-time compensation ensures ±1% torque accuracy at 2rpm.
0.125ms cycle period with 0.125ms DI port sampling.

位置和速度双环并联控制
全闭环编码器支持，实现伺服系统的高响应、高精度的位置和速度控制。

Dual-Loop Position/Speed Control
Full-closed-loop encoder integration enables high-response servo control.

高速弱磁控制
弱磁能力10倍增强，提高伺服电机的速度范围及高速过载性能。

Advanced Field-Weakening Control
10x flux-weakening capacity extends motor speed range and enhances high-speed overload performance.

高性能永磁同步伺服电机
High-Performance Servo Motor

高效
采用高牌号稀土永磁体与成熟电磁方案，符合GB30549一级能效及IEC60034 IE5标准。

High Efficiency
High-grade rare-earth permanent magnets with proven electromagnetic design, compliant with GB30549 Tier 1 and IEC60034 IE5 standards.

轻巧
高强度合金材质实现转矩/体积比和功率/体积比，是普通电机的2~3倍。

Lightweight
High-strength alloy materials deliver 2-3x higher torque/volume and power/volume ratios than conventional motors.

低噪
精密制造工艺与核心部件精度控制，运行噪音更低。

Low Noise
Precision manufacturing and core component optimization ensure smoother operation with significantly reduced noise.

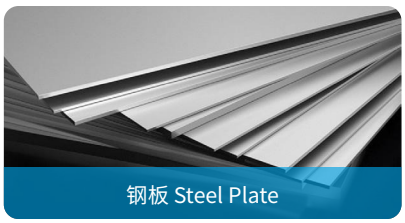
灵活
7种标准基座适配多场景，支持全平台非标定制。

Flexibility
7 standard sizes for diverse scenarios, complemented by full-platform custom solutions.

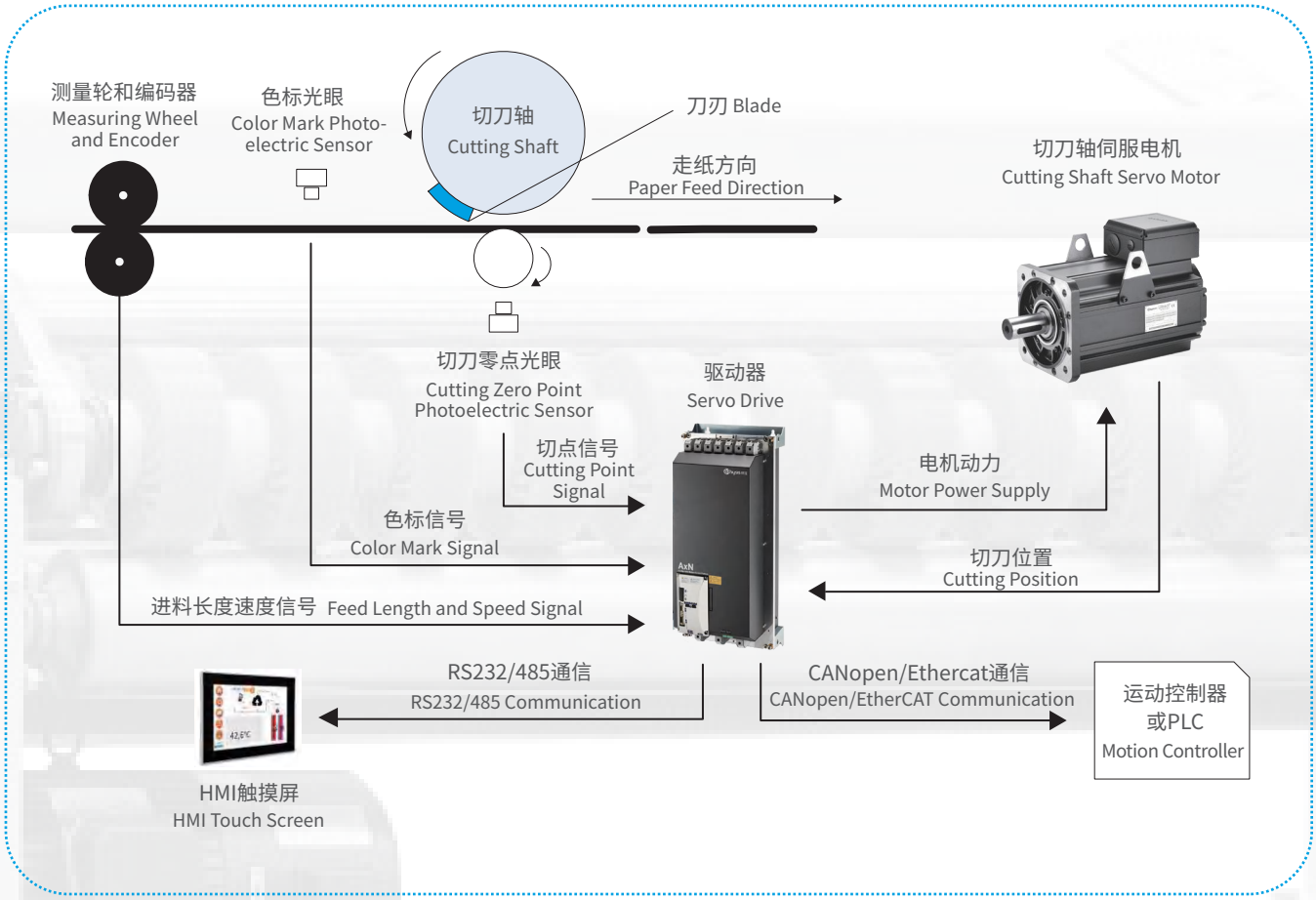
应用领域
Application


塑料膜 Plastic Film


瓦楞纸 Corrugated Board


钢板 Steel Plate

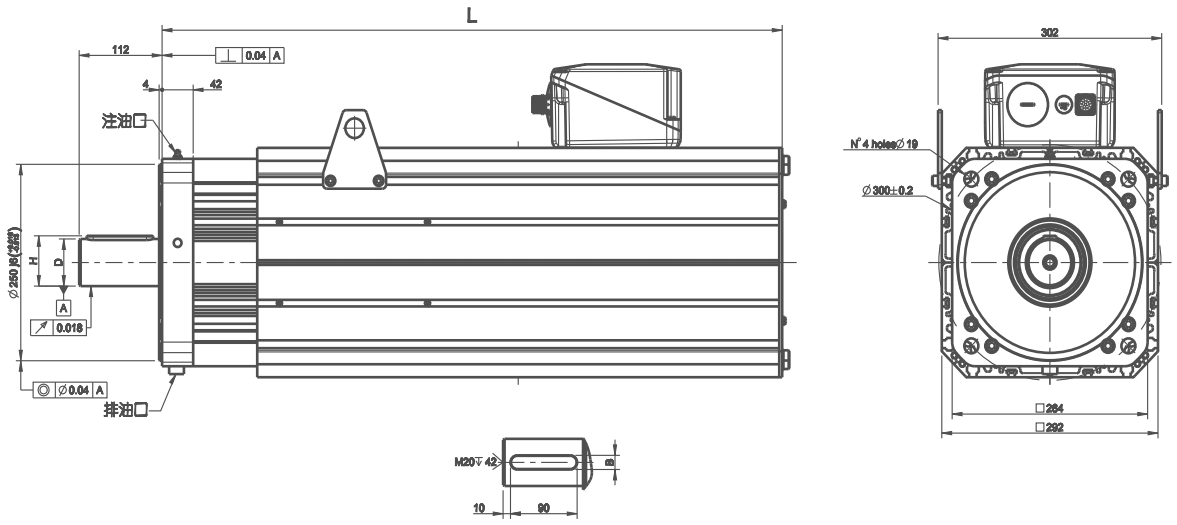
方案优势
Solution Advantages



- 切割速度高达400米/分钟
  Cutting speed up to 400m/min
- 切割范围300-200000mm
  Cutting range 300-200000mm
- 横切精度±0.5mm（全程无累计误差）
  Cross-cutting accuracy ±0.5mm (Zero cumulative deviation throughout operation cycles.)
- 可选储能电容模块，实现瞬时减速制动
  Supercapacitor module for instant braking (optional)
- 智能横切算法
  Intelligent cutting algorithm
- 灵活的双驱/四驱动态控制模式
  Adaptive Dual/Quad-Drive dynamic control
- 色标追踪裁切系统
  Color-marker tracking system
- 位置闭环算法实现任意低速无误差运行
  Position-closed-loop control for zero-deviation operation at minimal speeds
- 硬件级换单（在线插单零滞后）
  Hardware-level job switching with instant order insertion
- 刀轴无累计误差，免连续对刀
  Auto-calibrating spindle with zero cumulative deviation

电机参数
Parameter

电机型号 Motor Code		U31320F103	U31320F153	U31325F103	U31325F153	U31330F103	U31330F153	U31340F103	U31340F153
额定转速 Rated Speed	(RPM)	1000	1500	1000	1500	1000	1500	1000	1500
额定扭矩 Rated Torque	(Nm)	270	265	371	308.2	400	390	510	500
额定电流 Rated Current	(A)	56	81	87	99.9	83	121	118	155
堵转扭矩 Stall Torque	(Nm)	280	280	380.6	324.2	410	410	540	540
堵转电流 Current@Stall Torque	(A)	58	86	89.3	116.8	85	127	125	167
最大扭矩 Max. Torque	(Nm)	550	550	690	690	830	830	1100	1100
最大电流 Max. Current	(A)	125	186	180	251	189	283	281	357
扭矩系数 Torque Constant	(Nm/A)	5.5	3.7	4.78	3.43	5.5	3.67	4.9	3.67
定转子电阻 Stator Resistance	(Ω)	0.3	0.136	0.151	0.087	0.196	0.087	0.105	0.059
定转子电感 Stator Inductance	(mH)	9.1	4	6.04	3.4	6	2.7	3.87	2.2
电压等级 Rated Voltage	(Vac)	380							
极数 Number of Poles	-	8							



型号 Model	ΦD (mm)	H (mm)	B (mm)	L (mm)	KEY
U31320F	48j6	51.5	14	621.5	14*9*90
U31325F	48j6	51.5	14	674.5	14*9*90
U31330F	48j6	51.5	14	743.5	14*9*90
U31340F	60m6	64	18	837.5	18*11*90
U31350F	60m6	64	18	947.5	18*11*90

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