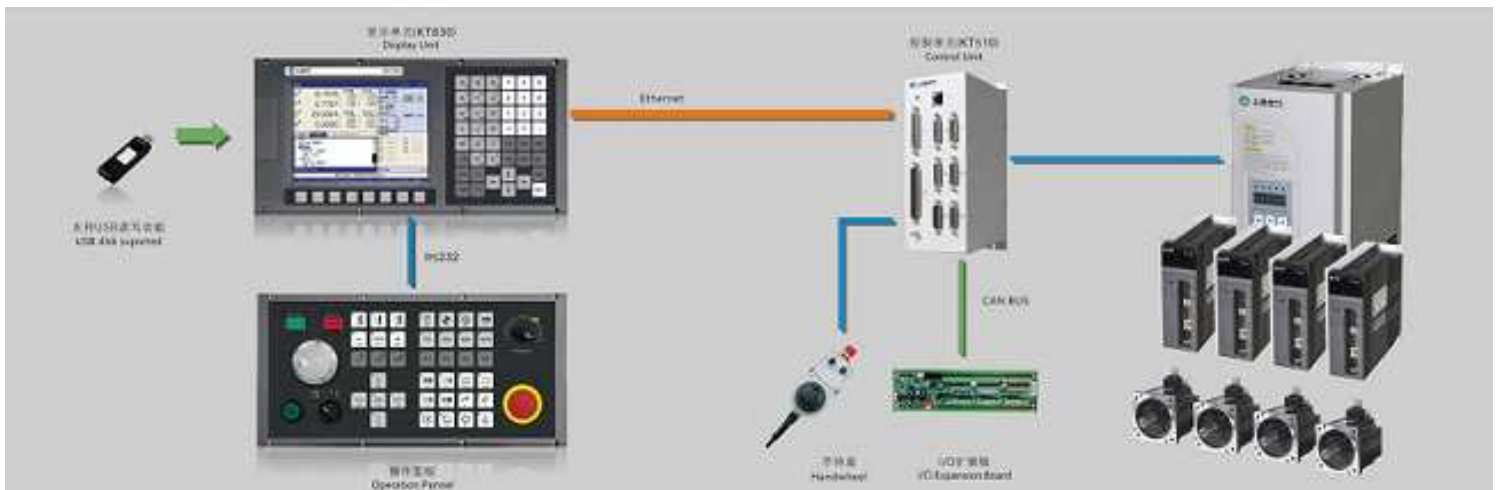


SEC500 CNC



传承经典，品质卓越

Classical Tradition, Excellent Quality

上海电气集团上海开通数控有限公司秉承二十余年来的优良传统，一贯坚持卓越的品质和严谨的作风，致力于发展中高档数控系统。

Shanghai Capital Numerical Control Corp. of Shanghai Electric Group keeps upholding the fine traditions and adhering to the outstanding quality and rigorous styles in over two decades and is dedicated to the development of high-end CNC system.

操作简便，功能强大

Simple in Operation, Powerful in Functions

我们追求友好的人机界面，在每一处细节中都为用户提供了无微不至的关怀。在系统功能更加强大和丰富的同时，操作却更加简单和方便。

We are pursuing friendly user-interface and providing users with meticulous care and concern both in every detail. The operation is more simple and convenient while the system functions are getting powerful and enrichment.

特点:

- 图形界面美观，提示信息丰富，操作简便
- 采用低功耗的嵌入式处理器
- 采用以太网通讯技术，接线简洁，可靠性高
- 8.4" 高分辨率真彩液晶显示器
- 内置2GB程序存储空间
- 前置USB接口，支持U盘文件读写
- 多级用户密码权限管理
- 支持CAN总线扩展I/O、A/D和D/A
- 内置在线帮助，方便查阅
- 高速小线段前看功能
- 断电记忆和从断点恢复加工的功能
- 用户可自定义的图示化参数编程界面
- PLC梯形图在线编程和监控

Features:

- Elegant graphical interfaces, rich prompting messages and simple operations
- Embedded processor with low power dissipation
- Ethernet communications technology featuring concise wiring and high reliability
- 8.4" true color LCD with high resolution
- Built-in 2GB memory space for part programs
- Front USB interface to facilitate read/write files with U disk
- Multi-level user password for management of access authority
- Support the CAN bus extension I/O, A/D and D/A
- Built-in online help, easy access
- High-speed preview functions for mini tool path
- Power-off memory and recovery processing from the breakpoint
- Customized graphic interface for parameter programming
- On-line programming and monitoring for PLC ladder diagram

系统特点

System Features

界面友好、提示丰富

Friendly interface, Rich tips

- 系统的各项操作都提供了丰富的提示信息，引导用户执行每一步操作。所有的系统状态都有完整的文字内容。操作者无需太多的培训和记忆就能够熟练应用。即使初次使用本系统也能做到得心应手。
- Rich prompting messages are provided in the system to guide the user at every step of the operation. Texts are provided to give a full picture of each system state. Operators can master the system without special training and memorization. The system can be run with proficiency even in initial use.



多级用户密码访问权限管理

Multi-level user password for management of access authority



- 系统提供了包括普通用户、高级用户、管理员和超级用户在内的四级用户权限。编辑数控程序、修改系统参数、调整速度倍率等重要操作都可以通过密码或外部钥匙开关进行保护。
- System provides four levels of customer authorities including ordinary users, advanced users, administrators and super-users. Important operations such as NC program editing, system parameters modification, speed ratio setting etc. can be protected by password or by an external key switch.

用户可自定义的图示化参数编程界面

Customized graphic interface for parameter programming

- 采用提供的软件工具可以方便地制作参数化编程的模板文件。操作工人只需要在图示的引导下输入零件的特征参数和加工参数，就可以加工相应的零件，而不需要编写G代码程序。
- The offered software tool will facilitate to build template file for parameterized programming. Under the graphical guidance, the operator can input characteristic parameters and process parameters of the part to process relevant parts without the need to write G code program.



内置在线帮助，查阅方便

Built-in online help, easy access

- 通过系统的“帮助”按钮一键式操作，系统可以显示有关常用的操作、编程指令、PLC指令和系统参数的帮助信息。机床制造商还可以把关于机床的使用说明和注意事项等放入帮助信息中。
- One-key operation of the system "help" button can display help information on respective general operations, programming codes, PLC instructions and system parameters. Machine builders can store operating instruction and notices for the machine in help information.



最多可达30天的日志记录

Log records for max. 30 days



- 本系统可以在系统日志中详细地记录用户所执行的每一步操作、所修改的每一个参数以及各种报警和状态信息的变化。这些记录可以帮助用户准确定位和分析解决疑难问题。
- The system can log every step of the user operation, all modifications of each parameter and various changes on alarms and status information in considerable detail in the system log file. These records can help the user to pinpoint and analyze the solution of problematic issues.

一目了然的诊断功能

Diagnostic features at a glance

- 在诊断界面中，系统的I/O信号、操作面板信号和用户自定义报警信号都可以直接显示信号的名称。逼真的圆形LED指示灯能够灵敏地反映出端口状态的变化。



- In the diagnostic interface, I/O signals, signals on control panel and user-defined alarms can be displayed directly with their signal name. Realistic round LED lights can reflect the port status changes sensitively.

方便的软件升级操作

Convenient software upgrading



- 系统提供了专门的操作界面，可以方便地下载存储在U盘中的新版软件和参数。快速更新和升级系统的各项功能。
- The system provides a special operation interface to facilitate download of new software version stored in U disk. Various system functions can be updated and upgraded quickly.

特定的多通道结构

Specific multichannel structure

- 通过标准工业以太网交换机，一台SEC500显示单元可以同时连接多个控制单元，并实现同步控制。为构建多功能复合加工设备或包含上下料机械手的柔性加工生产线提供了一种经济的解决方案。

- A SEC500 display unit, via the standard industrial hub, can connect multiple control units at the same time to realize synchronization control. This function is available to build multi-functional and complex processing equipment or offers an economical solution for flexible production line with automatic loading and unloading robots.



I/O端口灵活配置

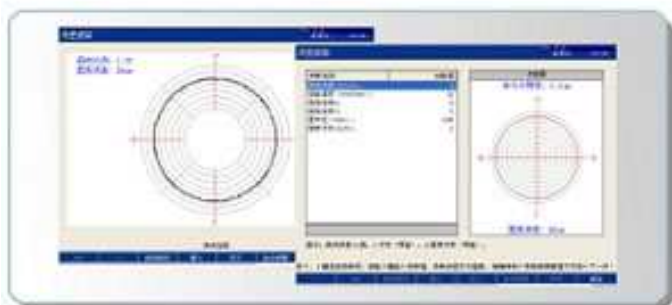
Flexible configuration of I/O port



- 在端口配置界面中可以简便灵活地定义系统信号的地址和有效方式，配置端口的功能。为系统的安装、调试和维护带来了方便。
- In the port configuration interface signal address, effective measures, port function configuration of the system can be defined freely and easily. It provides convenience for system setup, debugging and maintenance.

伺服特性调整功能

Justified function of servo characters



- 通过系统对由位置反馈接口采集数据的处理及绘制的图形，帮助用户分析和调整伺服系统的特性参数，从而有效地提高数控机床的加工精度。
- Through system processing of data sampling at the position feedback interface and the rendered graphics it will help users to analyze and justify the servo system parameters, hence to improve the machining accuracy of CNC machine tools effectively.

强大的PLC梯形图功能

Powerful PLC ladder diagram function

- 在数控系统上可进行PLC梯形图编程，并可通过梯形图来监视端口和PLC寄存器的状态。离线PLC程序编辑工具还提供在梯形图中添加注释、自定义PLC报警信息和用户参数等。
- PLC ladder programming can be applied in this CNC system while the port status and the PLC register could be monitored via ladder diagram. Editing tools for offline PLC programming also provides other functions such as adding of comments, self-defined PLC warning messages and user parameters etc. in ladder diagram.

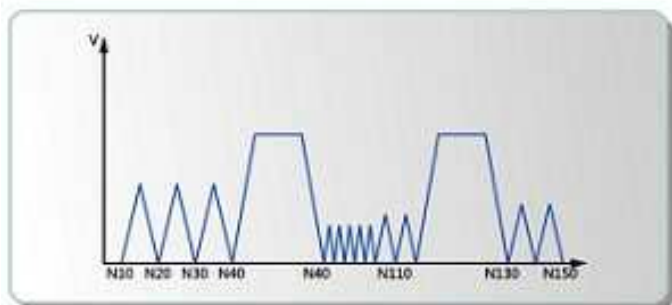


高速小线段前看插补

High-speed look-ahead interpolation

- 高速小线段前看插补技术可以提前对加工表面的曲率进行分析和预测，从而有效减少频繁地加减速，显著提高生产效率和工件表面的质量。

- High-speed look-ahead interpolation technique for fine-segment can analyze in advance and forecast the curvature of a surface for machining; this function can help to offer an effective reduction of the frequency for acceleration and deceleration, significant improvement of efficiency and workpiece surface quality.



双向螺距误差补偿功能

Bidirectional pitch error compensation

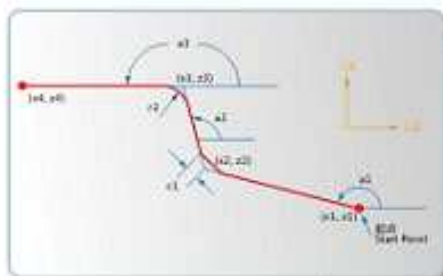
- 系统可以对正向移动和负向移动时的丝杠螺距误差分别进行连续线性补偿，同时可以实现对不同位置下的反向间隙值进行精确的标定。
- The system can provide continuous linear compensation respectively for pitch errors that occur as the leadscrew is moving in positive or negative directions while achieving precise calibration of the backlash at different positions.



图纸尺寸直接编程（适用于车床）

Direct drawing dimensions programming (For lathe only)

- 用户可以按照零件图的尺寸标注，直接指定诸如直线的倾角、倒角/倒圆角值等尺寸。不必通过繁琐的公式来计算圆弧的切点和交点。极大地简化了加工程序的编制。



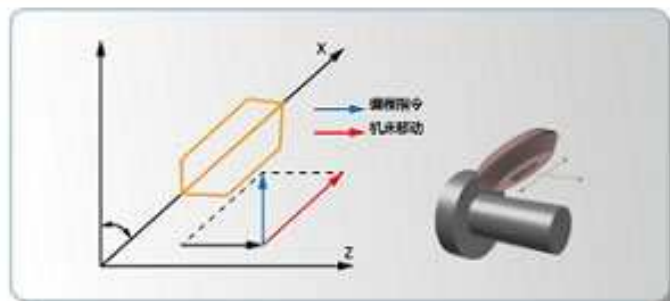
X(x2) Z(z2) ; C(c1);
X(x3) Z(z3) ; R(r2);
X(x4) Z(z4);
or
A(a1) ; C(c1);
X(x3) Z(z3) ; A(a2) ; R(r2);
X(x4) Z(z4);

- Users can specify directly the dimensions such as slope angle and angles for chamfering/rounding etc. according to the part drawing dimensions, There is no need to calculate the arc tangent points and intersection points through complicated formulas, so that the establishment for processing program is simplified greatly.

斜轴控制功能（适用于磨床）

Control function for inclined axis (For grinding only)

- 针对X与Z轴采用非正交结构的磨床，系统可以根据所设置的斜角进行自动补偿和控制。用户无需考虑坐标转换的问题，可以直接按照直角坐标系进行编程和操作。
- It is applied to the grinding machine adopting non-orthogonal structure for X and Z axis. The system can provide automatic compensation and control according to the setting bevel angle. Users can perform programming and operation against Cartesian coordinate system with no more need to consider coordinate transformation.

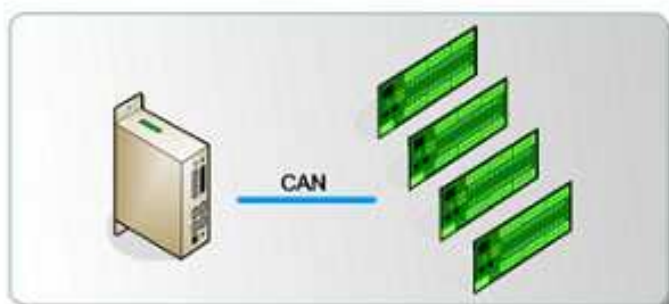


CAN总线扩展丰富接口

CAN bus-extension interfaces

- 通过控制单元的CAN总线扩展接口，可以连接最多4块I/O扩展板。每块扩展板有：24路输入信号、24路输出信号、1路模拟量输入信号和1路模拟量输出信号。

- By the CAN bus extension interface on control unit, up to four (4) I / O expansion boards can be connected. Each expansion board has: 24-channel input signal, 24-channel output signal, one channel of analogue input signal and one channel of analogue output signal.

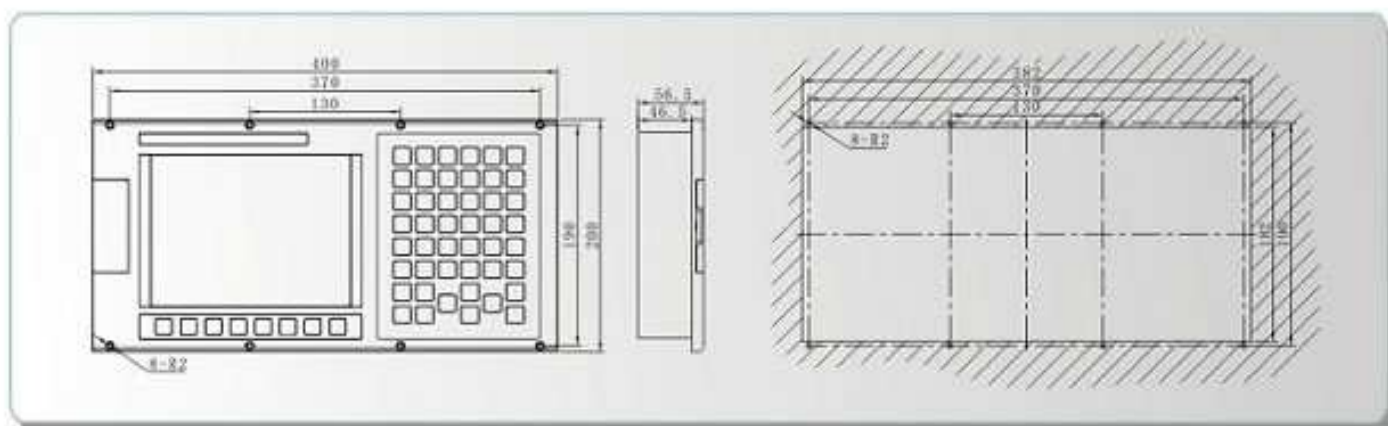


产品结构

System Structure

显示单元的外形尺寸 (KT630)

Display unit outline and dimensions



控制单元外形尺寸 (KT510)

Control unit outline and dimensions

