GSK218MC MACHINING CENTER
CNC SYSTEM

Brief Introduction

GSK218MC series CNC systems are upgraded products from GSK218M. As the high-speed spline interpolation algorithm is employed in the system, the machining speed and precision and surface fineness are greatly improved. The new-designed interface is user-friendly. The CNC system supports GSK-Link Ethernet bus function and it is much easier to connect; and supports macro programs of statement type (macro B), which makes the programming more concise. The CNC system can be applied in such areas as Milling Machine, Machining Center, high-speed Engraving, Grinding Machine and Gear Hobbing Machine.

Characteristics

- Excellent high-precision and high-speed interpolation performance; complex curve surface machining effective speed: 8m/min, optimum machining speed:4m/min;
- Max. Positioning speed: 60m/min; max. feed rate: 15m/min;
- Up to 1000 blocks look-ahead capacity, powerful pre-processing function, featuring high speed, high precision and good finish.
- There are three structural types: horizontal, vertical and integrated, which adopting 8.4" or 10.4" color LCD with 800×600 resolution.
- The interface is comfortable, friendly and easy to use.
- Support Chinese, English, Russian, Spanish and Turkish language.
- Support PLC online monitoring, edit, compile and signal follow functions.
- Support turret type, circular and servo tool magazines etc.
- Support Statement type macro programs (macro B), which makes the programming more concise.
- With abundant help information and a big amount of prompt information, it is easy for user to learn, operate and debug.
- Support RS232, USB and network interfaces and realize data transfer, DNC machining and USB on-line machining.
GSK218MC Machining Center CNC System

3D wireframe processing graphic display
Abundant alarm information
Detailed help function

Technical Specification

Controlled and linked axes: standard: 4-axis with 3-axis linkage (standard) and 4-axis linkage (option); each axis can be set to rotary or linear axis by parameter.

Interpolation type: positioning (G00), linear (G01), arc (G02, G03), helical interpolation

Position instruction range: Metric: -9999.999mm~+9999.999mm, min. Input increment: 0.001 mm inch: -9999.9999inch~+9999.9999inch, min. Input increment: 0.0001 inch

Electronic gear: Instruction multiplication coefficient 1~65536, instruction division coefficient 1~65536

Rapid traverse speed: max. 60mm/min

Rapid override: F0 25%, 50%, 100% real-time adjustment in 4 levels

Cutting feedrate: max. 15m/min (G94) or 50m/min (G95)

Feed override: 0~200% real-time adjustment in 21 levels, can be controlled by band

MPG feedrate: 0.01mm/0.01mm, 0.1mm, 1mm, 3 levels;

Single step feedrate: 0.01mm, 0.01mm, 0.1mm, 1mm, 3 levels;

Pre acceleration/deceleration: The acceleration/deceleration before interpolation can set the linear or S type, and the acceleration/deceleration time constant can be set by parameter.

Post acceleration/deceleration: the acceleration/deceleration after interpolation can set the linear or exponential type, and the acceleration/deceleration time constant can be set by parameter.

Post acceleration/deceleration is default in manual, MPG and step mode.

Pre acceleration/deceleration or Post acceleration/deceleration type can be selected in cutting and rapid positioning.

Miscellaneous function

Function may be specified by address M and 2 digits, M function can be user-defined.

M instructions (cannot be defined again) end of program M02, M03; program stop M00; optional M01; tool magazine calling M08; subprogram calling M98; end of subprogram M99.

M codes defined by the standard PLC: M03, M04, M05, M08, M09, M10, M11, M16, M17, M18, M19, M20, M21, M22, M23, M24, M25, M26, M27, M28, M29, M30, M36, M44, M45, M50, M51

Tool function

T1 and 4 digits select the tool: 256 sets tool offset value, tool length compensation, tool wear compensation, tool nose radius compensation (C type)

Spindle function

Spindle encoder: resolutions can be set (100~50000p/p)

Transmission ratio between encoder and spindle: 11~255, 1~255

Spindle rate: 500~1200, real-time adjustment in 8 levels real-time adjustment in 8 levels, can be controlled by band

Automatic compensation

Meaning of compensation: compensation for fixed frequency or acceleration/deceleration can be selected

Tool length compensation: the type (A or B type) can be selected by parameter

Tool radius compensation: C type tool compensation

Max. compensation value: ±999.999mm or ±99.999inch

Overall Installation Dimensions

GSK218MC-H NC Unit

Reliability and safety

State signal: emergency stop, overtravel, stored alarm, on/off signal, NC ready signal, servo ready signal

Auto run start signal

Automatic running signal

Feed hold signal

Self-diagnosis function: signal abnormality, system abnormality, position control abnormality, servo abnormality, communication abnormality, spindle abnormality and so on.

NC alarm: program error, operation error, overtravel error, servo error, connection error, PLC error, ROM and RAM error

Operation function

Auto run, manual run, zero return, MPG, DNC, single block, skip, dry run, M-S-L, program restart, MPG interruption, step interruption, manual intervention, machine lock, interface, feed hold, cycle start, emergency stop, external reset signal, external power switch (ON/OFF)

Display

Program message, User program, system setting, PLC diagnosis information, system parameter, graph, alarm information, Help

Actual federate and spindle speed, real-time wave diagnosis, System running time and other NC instructions and state messages

Program edit

Program capacity: 57MB, max. 400 programs.

Program preview, program edit, background edit

PLC function

PLC processing speed: 3μs/s per step, up to 4700 steps; including 10 basic instructions and 35 functional instructions; ladder can be edited on-line.

I/O input / output, 48 output, expandable

Communication

Support RS-232 serial port, USB and network interface, can realize data transfer, DNC machining (serial port or net interface) and USB on-line machining.

Optional drive unit

DAS9 series and GS series digital AC Servo etc.