XYZ Stage

GOOGOL TECHNOLOGY

XYZ stage, together with single axis linear module and XY table belongs to Googol's NC series products. They are the basic components of CNC processing, electronic machining equipment, as well as the general platform for different scientific research, application developing and educational experiment. The XYZ stage series is designed with modularisation and industrial manufacturing standard, suitable for manufacturing fields and colleges.

The accompanying software is developed based on object-oriented technology. 3 axes motion control system main functions and G code compiling DLL are all included, which will realize different single-axis motor motion modes (S curve, T curve, speed mode, electronic gear mode) control, 2/3-axis interpolation or synchronizing controls. In addition, it provides abundant graphical interface, which displays curves of the motor parameters (speed, acceleration, position) in real time. Moreover, it displays real-time platform simulation and actual motion trajectory. Users can choose different experiment modules according to different experiments need, and

System Characteristics

- Modularized structure thus can be used as single-axis linear modules or XY tables.
- Modularization in mechanical, electrical components and software, easy for research and extension.
- Industrial standard components are used to ensure reliability of the system
- PC + motion controller control mode is adopted for flexibility.
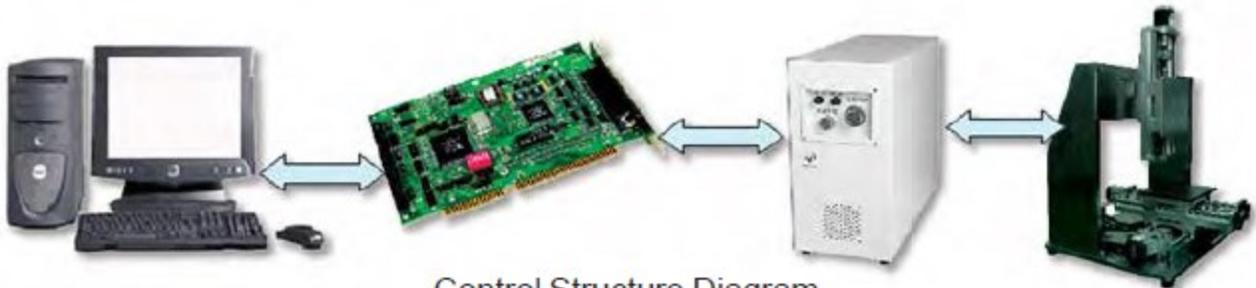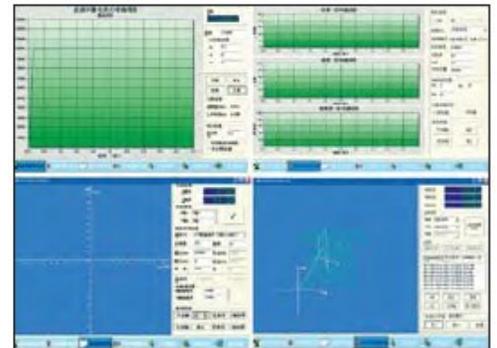
Experiments and Research Content
Fundamental Experiments

- Motion Control System fundamental experiment
- Motion Control System PID control experiment
- Motor and drive device comprehension and tuning experiment
- Single-axis motion planning experiment
- 2D, 3D interpolation principle and application experiment
- XYZ table motion control experiment
- NC code programming experiment

Part of Research Work

- 2D, 3D motion control application system development
- 2D, 3D trajectory interpolation algorithm research

Motion Control Development Platform Software

Control Structure Diagram

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Technical Specification

Component Name	Specification	
Dimension	630 x 470 x 815 mm (L x W x H), for GXYZ-202010 Series only	
Weight	~ 100Kg	
Setting accuracy	0.05	
Resetting accuracy	± 0.03	
Stepper motor	**Step angle**：1.8 degree **Holding torque**：1.35NM	**Rated current**：2.5A **Motor weight**：1Kg
Stepper driver	Maximum 200 subdivided Maximum response frequency 200Kpps Opto-isolated input / output	Driving current 0.5-4A adjustable Input power: DC12－40V
AC servo motor	**Power**：200W **Type**：AC servo **Encoder**：2500P/R	**Input voltage**：92V **Input current**：1.6A **Rated torque**：0.64NM **Maximum angular speed**：3000 rpm
Servo driver	**Power**：200W **Type**：AC servo **Input voltage**：AC 200－230V **Input current**：1.1A	**Input voltage frequency**：50/60HZ **Output voltage**：92V **Output current**：1.6A **Output frequency**：0-333.3HZ
Motion controller	GT－400－SG or GT－400－SV motion controller	
Track	**Effective distance**：200 or 300mm	
Ball screw	**Distance**：5mm	

Ordering Guide

Model Number	Product Name	Product Configuration
GXYZ202010GT/ GXYZ303010GT	3-axix stepping platform	◆ Mechanical main body ◆ GT-400-SG motion controller ◆ 3-axis stepping electric control module ◆ Googol motion control software with source code
GXYZ202010VP/ GXYZ303010VP	3-axis AC servo closed-loop platform	◆ Mechanical main body ◆ GT-400-SV motion controller ◆ 3-axis AC servo closed-loop electric control module ◆ Googol motion control software with source code
GXYZ202010GP/ GXYZ303010GP	3-axis AC servo open-loop platform	◆ Mechanical main body ◆ GT-400-SG motion controller ◆ 3-axis AC servo open-loop electric control module ◆ Googol motion control software with source code
GXYZ202010VD/ GXYZ303010VD	3-axis DC servo closed-loop platform	◆ Mechanical main body ◆ GT-400-SV motion controller ◆ 3-axis DC servo closed-loop electric control module ◆ Googol motion control software with source code
GXYZ202010GD/ GXYZ303010GD	3-axis DC servo open-loop platform	◆ Mechanical main body ◆ GT-400-SG motion controller ◆ 3-axis DC servo open-loop electric control module ◆ Googol motion control software with source code