FORYON F2300B

Fangling F2300B CNC Lathe Controller User Manual

Model: F2300B

1. Introduction

The Fangling F2300B CNC Lathe Controller is an advanced control system designed for various CNC machines, including lathes, CNC routers, pick-and-place machines, and milling machines. It integrates a human-computer interface with robust code analysis and an FPGA for underlying algorithms and control pulse generation, ensuring reliable control and user-friendly operation. Its internal operating system is designed for efficiency and precision.
This manual provides essential information for the proper installation, operation, and maintenance of your F2300B controller.

2. Setup and Installation

2.1 Initial Inspection

Upon receiving your F2300B controller, carefully inspect the packaging and the unit for any signs of damage during transit. Ensure all components listed in the packing list are present.

2.2 Mounting the Controller

Mount the controller securely in a suitable enclosure, ensuring adequate ventilation and protection from dust and moisture. Refer to the physical dimensions for proper panel cutout.

2.3 Connection Overview

The F2300B controller features various ports for power, motor control, and communication. Refer to the diagram below for a visual guide to the rear panel connections.



Figure 2.1: Rear panel connections of the F2300B controller.

This image displays the back of the F2300B controller, highlighting the input/output ports, motor connections (CN1-CN4), RS232 (CN5), CAN (CN8), and other signal connections (CN6, CN7). A warning label in both Chinese and English is visible at the bottom, emphasizing the use of 24V DC power, not opening the unit without warrant, proper installation and wiring, firm grounding, and not opening within 5 minutes after power off.

2.4 Power Supply Connection

Connect a **24V DC** power supply to the designated terminal (DC 24V+ / DC 24V-). Ensure the polarity is correct.*Warning: Do not open the unit within 5 minutes after power off to avoid electric shock.*

2.5 Motor and Signal Connections

Connect your stepper or servo motors to the appropriate motor output ports (CN1, CN2, CN3, CN4). Connect input/output signals to CN6 and CN7 as per your machine's requirements. The RS232 (CN5) and CAN (CN8) ports are available for communication with other devices.

2.6 Grounding

Ensure the controller is firmly grounded to prevent electrical interference and ensure safe operation.

3. Operating Instructions

The F2300B controller features a user-friendly interface with a 10.4-inch screen and a comprehensive keypad for intuitive operation.



Figure 3.1: Front panel of the F2300B controller.

This image shows the front of the F2300B controller, featuring a large display screen at the top and a full keypad below. The keypad includes numerical keys, navigation arrows, function keys (F1-F8), and dedicated control buttons like START, STOP, HOME, and specific cutting process buttons such as Ignition, Preheat, Cut, Arc, Heighten, and Mark. A USB port is visible on the bottom right, covered by a flap.

3.1 Powering On/Off

To power on, ensure all connections are secure and apply 24V DC power. To power off, remove the 24V DC power supply. Always wait at least 5 minutes after powering off before attempting to open the unit.

3.2 Keypad Functions

The keypad provides direct access to various functions and data input. It includes:

- **Numeric Keys (0-9)**: For data entry.
- **Function Keys (F1-F8)**: Context-sensitive functions displayed on the screen.
- **Navigation Keys (Arrows, HOME, END, PgUp, PgDn)**: For menu navigation and cursor movement.
- **Control Keys (START, STOP)**: To initiate and halt machine operations.
- **Specialized Cutting Keys (Ignition, Preheat, Cut, Arc, Heighten, Mark)**: Dedicated buttons for plasma/flame cutting processes.
- **USB Port**: Located on the bottom right, used for program transfer and data backup.



Figure 3.2: Close-up of the F2300B keypad and USB port.

This image provides a detailed view of the F2300B controller's keypad, showing the layout of the navigation keys (HOME, PgUp, PgDn, arrow keys), control buttons (START, STOP), and the specialized cutting function buttons (Ignition, Preheat, Cut, Arc, Heighten, Mark). The USB port, covered by a protective flap, is clearly visible on the right side of the keypad.

3.3 Program Loading and Execution

Programs can be loaded into the controller via the USB port. Navigate through the menu using the navigation keys to select and load your desired G-code or other compatible program files. Once loaded, use the START button to begin

execution.

3.4 Interface Navigation

The controller's interface is designed for intuitive use. Use the arrow keys to move the cursor, PgUp/PgDn to scroll through pages, and ENTER to confirm selections. The ESC key is used to go back or cancel operations.

4. Maintenance

Regular maintenance ensures the longevity and optimal performance of your F2300B controller.

4.1 Cleaning

Keep the controller's screen and keypad clean using a soft, dry cloth. Avoid using abrasive cleaners or solvents that could damage the surfaces. Ensure no dust or debris accumulates in the ventilation openings.

4.2 Environmental Conditions

Operate the controller within its specified environmental conditions (temperature, humidity) to prevent damage. Protect it from excessive vibration, direct sunlight, and strong electromagnetic interference.

4.3 Software Updates

Periodically check the manufacturer's website (FORYON) for any available software or firmware updates. Follow the provided instructions carefully for any update procedures.

5. Troubleshooting

This section addresses common issues you might encounter with your F2300B controller.

5.1 Power Issues

- **Controller does not power on:**
  - Verify the 24V DC power supply is correctly connected and providing the correct voltage.
  - Check all power cables for secure connections and damage.

5.2 Operation Issues

- **Machine not responding to commands:**
  - Ensure all motor and signal cables are securely connected.
  - Check if the correct program is loaded and selected.
  - Verify emergency stop buttons on the machine are not engaged.
- **Display is blank or distorted:**
  - Power cycle the unit (turn off, wait 5 minutes, then turn on). If the issue persists, contact support.

5.3 General Warnings

- **Do not open the controller:** The unit contains sensitive electronic components. Opening it without proper authorization or within 5 minutes of power-off can lead to electric shock or damage and may void your warranty.
- **Ensure proper grounding:** Improper grounding can lead to electrical hazards and erratic behavior of the controller.

For issues not covered in this section, please refer to the support information provided in Section 7.

6. Specifications

Key technical specifications for the Fangling F2300B CNC Lathe Controller:

Feature	Specification
Model Number	F2300B
Motor Type Supported	Servo and Stepper
Screen Size	10.4 inches
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	6.61 pounds
Manufacturer	FORYON
Country of Origin	China

7. Warranty and Support

7.1 Warranty Information

This product is manufactured by FORYON. For specific warranty terms and conditions, please refer to the documentation provided with your purchase or contact the seller directly. Typically, products come with a limited warranty covering manufacturing defects.

7.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or inquiries regarding parts and service, please contact your point of purchase or the manufacturer, FORYON. When contacting support, please have your product model (F2300B) and any relevant purchase information ready.

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