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YIDOFENG 750W

YIDOFENG 750W 110V DC Brushless Spindle Motor and Driver Kit Instruction Manual

For CD210v / WM210v Mini Lathes

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the YIDOFENG 750W 110V DC Brushless Spindle Motor and its accompanying Power Driver Kit. This kit is designed for use with CD210v and WM210v mini lathes, offering high torque and low noise performance. Please read this manual thoroughly before installation and operation to ensure safe and efficient use of the product.

2. Safety Instructions

Always observe the following safety precautions to prevent injury and damage to the equipment:

- Ensure the power supply is disconnected before performing any installation, wiring, or maintenance.
- All electrical connections must be made by a qualified professional in accordance with local electrical codes.
- Do not operate the motor or driver board in wet or damp conditions.
- Wear appropriate personal protective equipment (PPE), such as safety glasses, when working with machinery.
- Keep hands and loose clothing away from moving parts during operation.
- Ensure proper ventilation around the motor and driver board to prevent overheating.
- Do not exceed the specified voltage and power ratings.

3. Product Overview

3.1 Components Included

The package includes the following items:

- 1 x YIDOFENG 750W DC Brushless Spindle Motor
- 1 x Control Driver Board



Figure 1: YIDOFENG 750W DC Brushless Spindle Motor and Driver Board Kit

3.2 Motor Features

- **High Speed and Large Torsion:** Maximum speed up to 4000 RPM.
- **Stable and Low Noise:** Designed for smooth and quiet operation.
- **High Efficiency:** 750W power for effective performance.
- **Fast Heat Dissipation:** Efficient cooling design.
- **Lightweight:** Easy to handle and integrate.

3.3 Driver Board Features

- Advanced technology for high speed control.
- Low noise and low vibration operation.
- Integrated protection features: over current, overload, less phase line, phase line short.
- Alarm output and speed output capabilities.
- Note: The color of the driver board (green or blue) is randomly shipped.

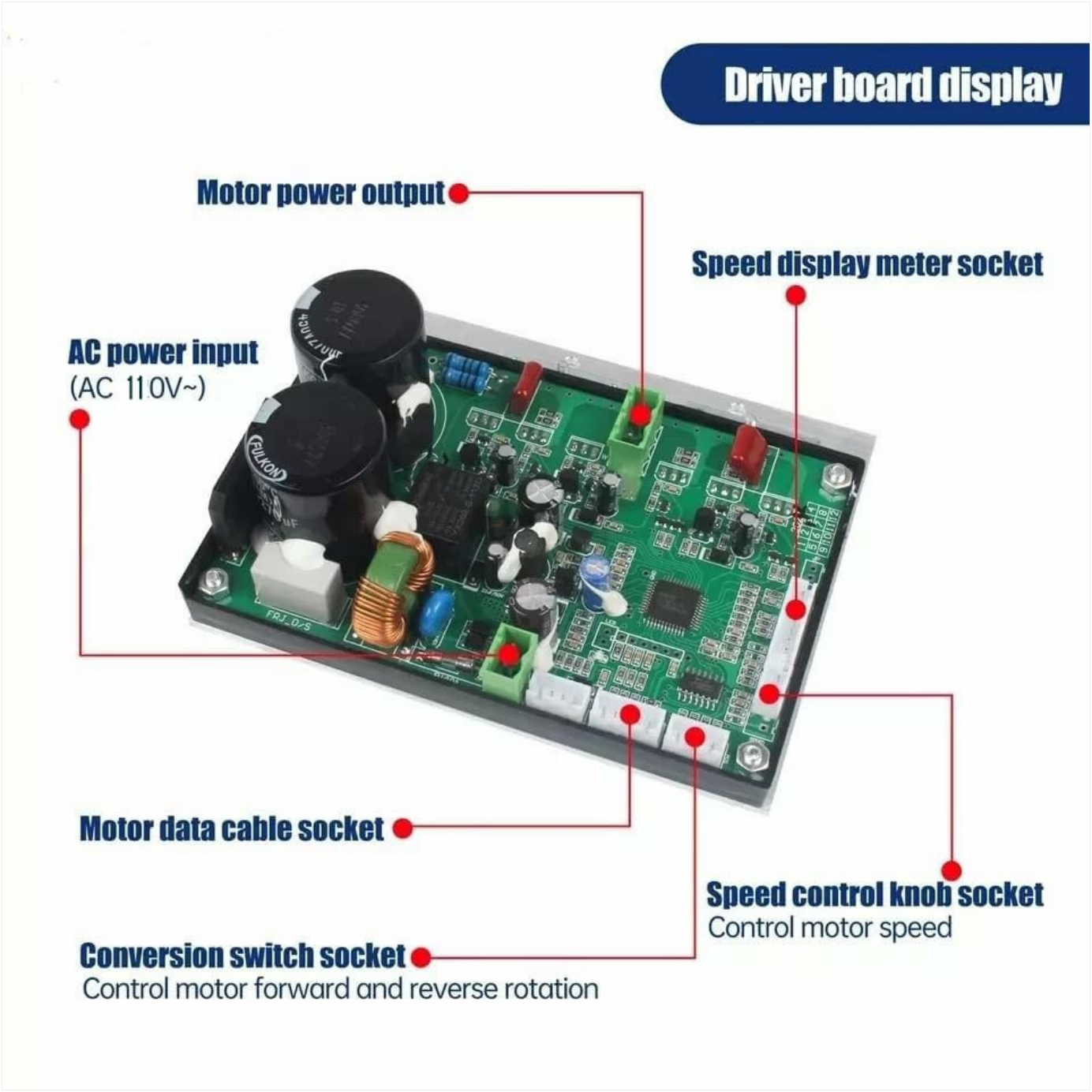


Figure 2: Driver Board Layout with Labeled Ports (1. AC Power Input, 2. Motor Data Cable Socket, 3. Conversion Switch Socket, 4. Speed Control Knob Socket, 5. Speed Display Meter Socket, 6. Motor Power Output)

4. Specifications

4.1 Motor Specifications

Parameter	Value
Power	750W
Voltage	110V DC
Maximum Speed	4000 RPM
Material	Iron

Parameter	Value
Weight	1.6 kg
Length	115.5 mm
Width	88 mm
Shaft Length	35 mm
Shaft Diameter	10 mm
Hole Distance	73 mm / 2.9 inches

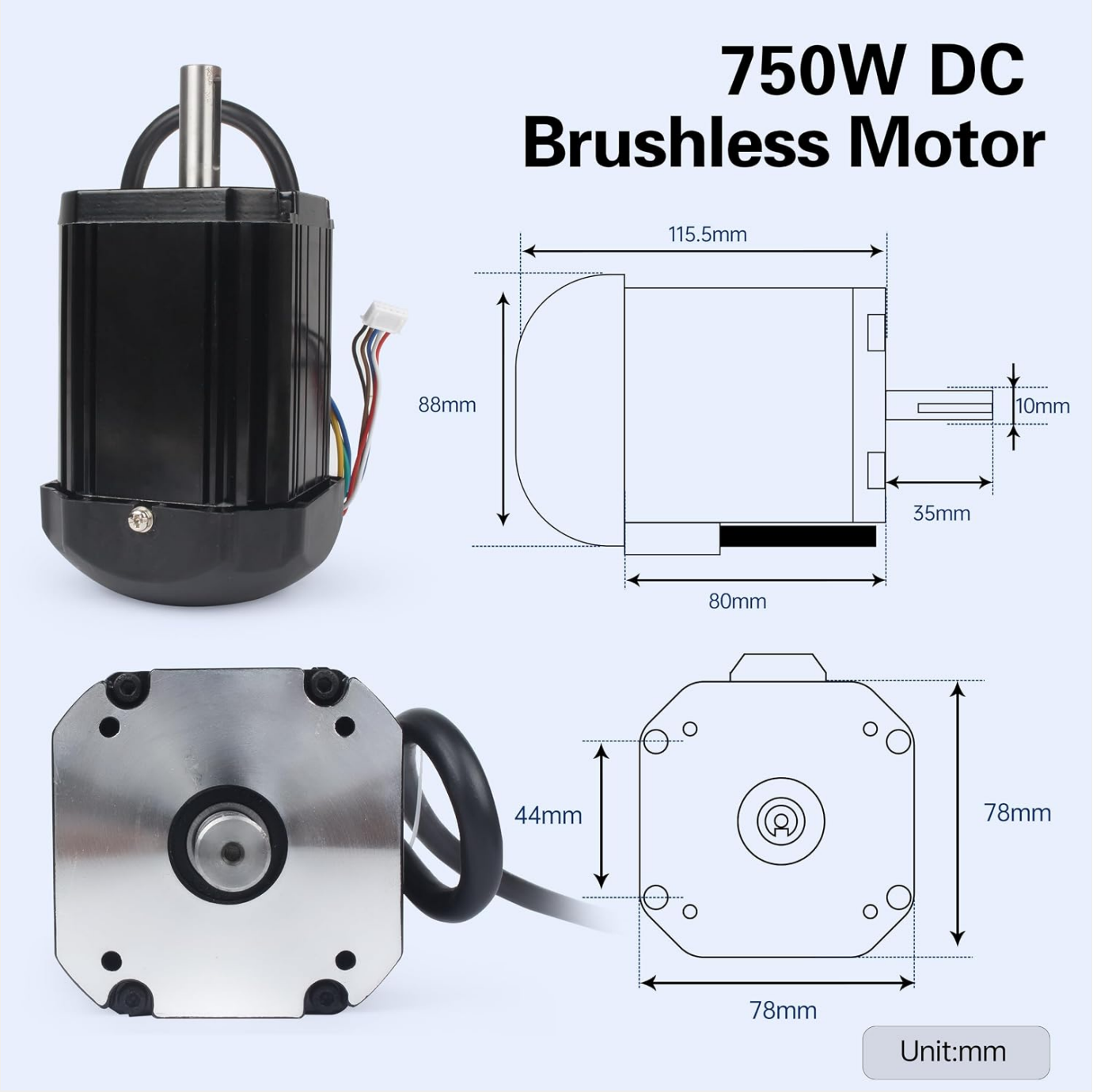


Figure 3: 750W DC Brushless Motor Dimensions Diagram

4.2 Driver Board Specifications

Parameter	Value
Input Voltage	110V AC, 50/60Hz
Output Voltage	110V DC
Maximum Output Power	1100W

5. Setup and Installation

Follow these steps for proper installation and wiring of the motor and driver kit.

5.1 Physical Wiring Diagram

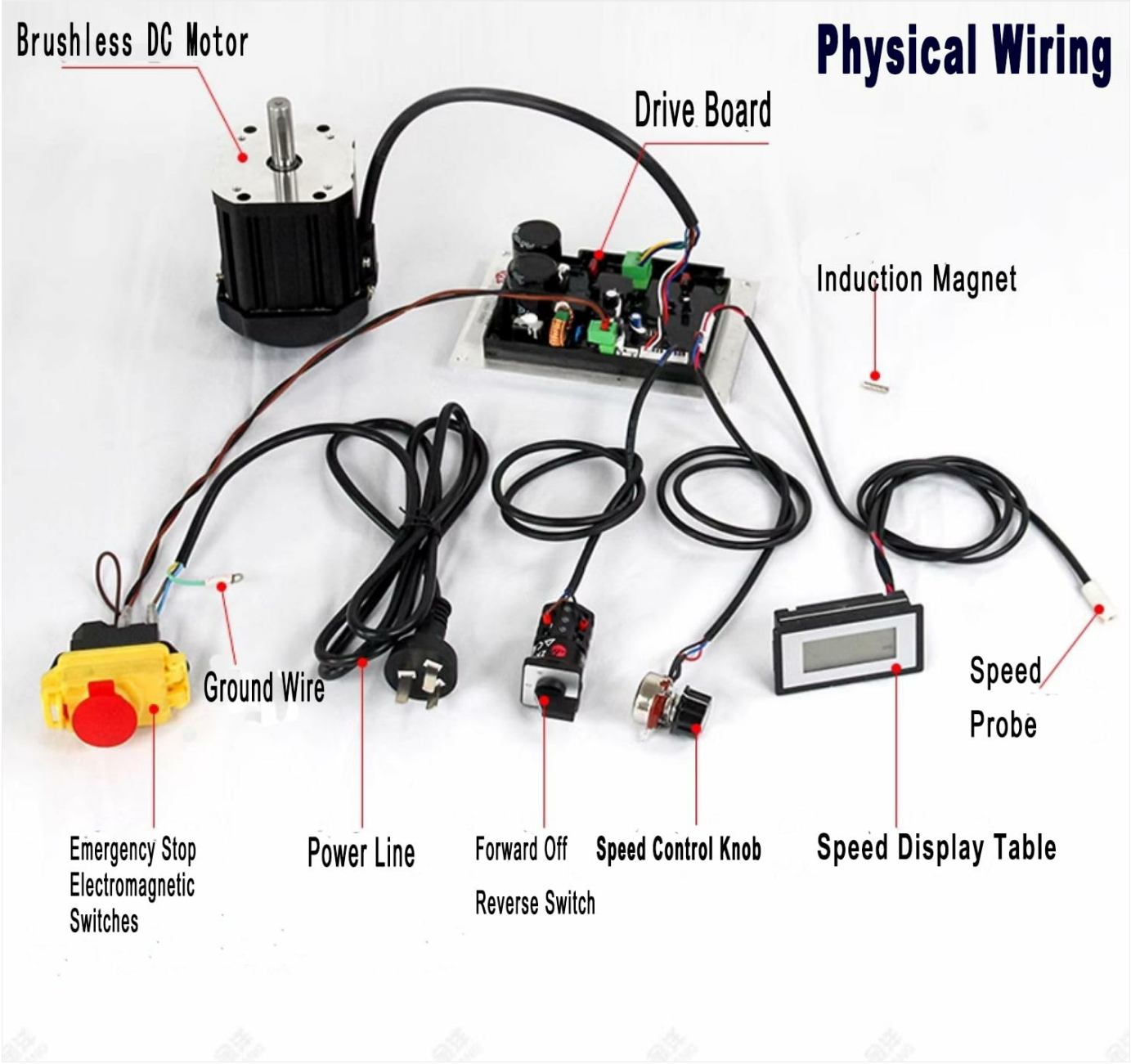


Figure 4: Physical Wiring Diagram for Brushless Motor System (Illustrates connections for motor, drive board, emergency stop, power, forward/reverse switch, speed control knob, speed display, and probe)

5.2 Connection Steps

1. **Mounting:** Securely mount the brushless motor and the driver board to a stable surface on your lathe setup. Ensure

adequate clearance for ventilation.

2. **Motor to Driver Board:** Connect the motor's data cable to the designated motor data cable socket on the driver board (refer to Figure 2, point 2).
3. **Power Output:** Connect the motor power output wires from the driver board to the motor (refer to Figure 2, point 6).
4. **AC Power Input:** Connect the 110V AC power supply to the AC power input terminals on the driver board (refer to Figure 2, point 1). Ensure the power is OFF during this connection.
5. **Speed Control Knob:** Connect the speed control knob to its socket on the driver board (refer to Figure 2, point 4). The center pin of the 3-pin socket typically connects to the center lug of the potentiometer. The other two wires are interchangeable.
6. **Forward/Reverse Switch:** Connect the conversion switch for forward and reverse rotation to its socket (refer to Figure 2, point 3). For a 4-pin socket, the pin nearest the corner of the board usually connects to the center lug on the switch. The neighboring two wires are interchangeable, and the fourth pin furthest from the corner may be unused.
7. **Speed Display Meter:** Connect the speed display meter to its dedicated socket (refer to Figure 2, point 5).
8. **Grounding:** Ensure all components are properly grounded to prevent electrical hazards.





Figure 5: Detailed Wiring Connection Example

6. Operating Instructions

Once the motor and driver board are correctly installed and wired, follow these steps for operation:

1. **Power On:** Connect the main power supply to the driver board. The system should power up.
2. **Speed Control:** Use the speed control knob to adjust the motor's rotational speed. Turn clockwise to increase speed and counter-clockwise to decrease speed. The speed display meter will show the current RPM.
3. **Forward/Reverse Rotation:** Utilize the conversion switch to change the direction of the motor's rotation (forward or reverse). Ensure the motor has come to a complete stop before changing direction to prevent damage.
4. **Emergency Stop:** In case of an emergency, activate the emergency stop switch to immediately cut power to the motor.
5. **Power Off:** When finished, turn the speed control knob to its minimum setting, then disconnect the main power supply.

7. Maintenance

Regular maintenance ensures the longevity and optimal performance of your motor and driver kit:

- **Cleaning:** Periodically clean the motor and driver board to remove dust and debris. Use a soft, dry cloth. Do not use liquids or solvents.
- **Ventilation:** Ensure that the ventilation openings on the motor and driver board are not obstructed to allow for proper heat dissipation.
- **Connections:** Regularly check all electrical connections for tightness and signs of wear or corrosion. Re-tighten or replace as necessary.

- **Inspection:** Inspect the motor shaft and bearings for any signs of damage or excessive play.
- **Storage:** If storing the unit for an extended period, keep it in a dry, dust-free environment.

8. Troubleshooting

This section addresses common issues you might encounter:

Problem	Possible Cause	Solution
Motor does not start	No power supply; Incorrect wiring; Emergency stop engaged; Faulty component.	Check power connections; Verify all wiring according to diagram; Disengage emergency stop; Contact support if components are suspected faulty.
Motor runs intermittently or with reduced power	Loose connections; Overload protection activated; Insufficient power supply.	Check and secure all wiring connections; Reduce load on the motor; Ensure power supply meets specifications.
Motor makes unusual noise or vibrates excessively	Improper mounting; Damaged bearings; Unbalanced load.	Ensure motor is securely mounted; Inspect bearings for damage; Balance the load if applicable.
Speed control is unresponsive	Speed control knob not connected or faulty; Driver board issue.	Check connection of speed control knob; Test knob functionality; Contact support if driver board is suspected faulty.
Motor direction cannot be changed	Forward/reverse switch not connected or faulty; Driver board issue.	Check connection of forward/reverse switch; Test switch functionality; Contact support if driver board is suspected faulty.

9. Application Examples

The YIDOFENG 750W DC Brushless Spindle Motor and Driver Kit is suitable for a variety of applications, particularly in:

- Industrial manipulators
- Semiconductor equipment
- Carving equipment
- Measuring equipment
- Medical equipment
- Robotics and other automated equipment

It is ideal for occasions requiring repetitive positioning control, numerous input and output points, and networking communication applications.



Figure 6: Application Examples with MX-210/CD-210 and WM-210 Lathes

10. Warranty and Support

YIDOFENG is committed to providing high-quality products and customer satisfaction. If you encounter any issues or have questions regarding the installation, operation, or maintenance of your 750W DC Brushless Spindle Motor and Driver Kit, please do not hesitate to contact our customer service team. We are always ready to assist you with any inquiries you may have.

For support, please refer to the contact information provided with your purchase or visit the official YIDOFENG store on Amazon.

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