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› LOCKIMELOW 1.5KW CNC Spindle Motor HTZ80X73-1.5 User Manual

LOCKIMELOW HTZ80X73-1.5

LOCKIMELOW 1.5KW CNC Spindle Motor HTZ80X73-1.5 User Manual

Model: HTZ80X73-1.5 | Brand: LOCKIMELOW

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your LOCKIMELOW 1.5KW CNC Spindle Motor HTZ80X73-1.5. Please read this manual thoroughly before using the product to ensure proper function and to prevent damage or injury. Keep this manual for future reference.

2. SAFETY INFORMATION

WARNING: Failure to follow these safety instructions may result in serious injury or property damage.

- Always disconnect power before performing any installation, maintenance, or troubleshooting.
- Ensure proper grounding of the spindle motor and Variable Frequency Drive (VFD) to prevent electrical shock.
- Wear appropriate personal protective equipment (PPE), including safety glasses, gloves, and hearing protection, during operation.
- Do not operate the spindle motor beyond its specified voltage, current, or speed limits.
- Keep hands, clothing, and tools clear of rotating parts during operation.
- Ensure adequate ventilation to prevent overheating of the spindle and VFD.
- This equipment should only be installed and serviced by qualified personnel.

3. PACKAGE CONTENTS

Verify that all items listed below are present and undamaged upon unpacking. If any items are missing or damaged, contact your supplier immediately.



PRODUCT KIT 01

- ① ER11A Wrench
- ② ER11 Collet * 7
- ③ 1.5KW 110V HTNC Square air cooled spindle
- ④ 1.5KW 110V YL586K Frequency changer

1.5KW air cooled square spindle kit Product parameter			
Spindle type	HTZ80x73-1.5	Electric current	10 A
Power	1.5KW	Rotational speed	24000 rpm
Voltage	110V	Chuck head	ER11
Frequency	400Hz	Kit net weight	4.83Kg

Figure 3.1: Components of the 1.5KW Air Cooled Spindle Kit. This image displays the main spindle, a VFD, an ER11A wrench, and a set of ER11 collets. Weights for individual components are also indicated.

- 1x ER11A Wrench (Net weight: 78g)
- 7x ER11 Collets (Net weight: 60g)
- 1x 1.5KW 110V HTNC Square Air Cooled Spindle (Net weight: 3.9kg)
- 1x 1.5KW 110V YL586K Frequency Changer (VFD) (Net weight: 790g)

4. SPECIFICATIONS

The following table details the key technical specifications for the 1.5KW air-cooled spindle kit:

Parameter	Value	Parameter	Value
Spindle Type	HTZ80X73-1.5	Electric Current	10 A
Power	1.5KW	Rotational Speed	24000 rpm
Voltage	110V	Chuck Head	ER11

Parameter	Value	Parameter	Value
Frequency	400Hz	Kit Net Weight	4.83kg

Additional Specifications:

- **Maximum Torque:** 0.6Nm
- **Drive:** Motor
- **Construction:** High-strength alloy materials, sealed, dust-proof design
- **Cooling:** Air-cooled

5. SETUP

5.1 Wiring Diagram

Correct wiring is crucial for the safe and proper operation of the spindle motor and VFD. Refer to the diagram below for connection details.

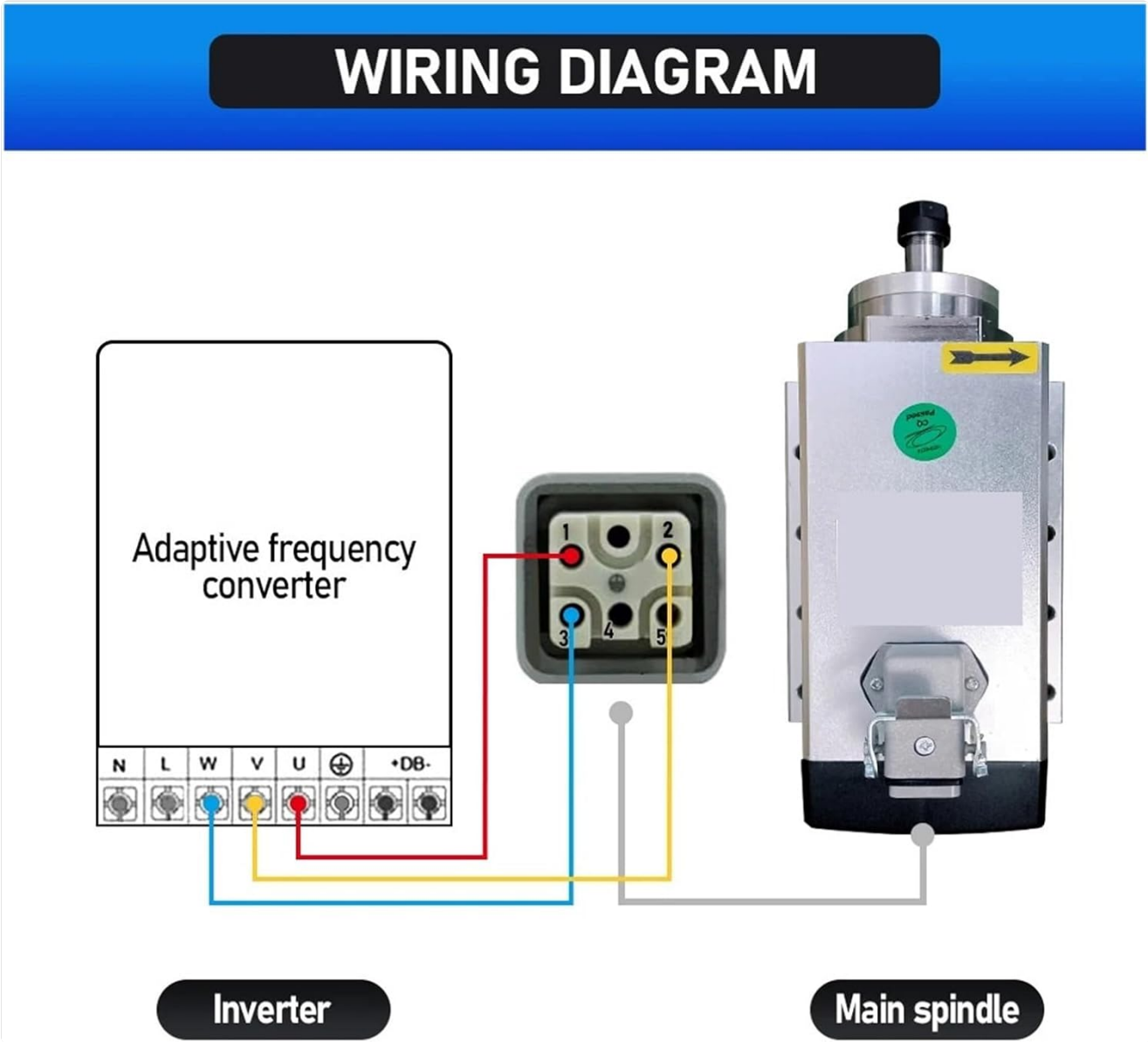


Figure 5.1: Wiring connections between the Inverter (Adaptive Frequency Converter) and the Main Spindle. The diagram illustrates the power input (N, L) to the inverter, output to the spindle (U, V, W), and ground connections.

5.2 Installation Steps

1. **Mounting:** Securely mount the spindle motor to your CNC machine using appropriate fasteners. Ensure the mounting surface is flat and stable to minimize vibration.
2. **VFD Placement:** Install the VFD in a well-ventilated area, away from excessive dust, moisture, and direct heat sources.
3. **Electrical Connections:**
 - Connect the main power supply (110V AC) to the input terminals (N, L) of the VFD.
 - Connect the output terminals (U, V, W) of the VFD to the corresponding terminals on the spindle motor.
 - Ensure all ground wires are properly connected to the designated ground terminals on both the VFD and the spindle.
 - Use shielded cables for spindle connections to minimize electromagnetic interference.
4. **Collet Installation:** Insert the desired ER11 collet into the spindle nut, then thread the nut onto the spindle shaft. Insert the cutting tool into the collet and tighten the nut with the ER11A wrench.
5. **Parameter Settings:** Configure the VFD parameters according to the spindle specifications (e.g., maximum frequency, voltage, current, acceleration/deceleration times). Refer to your VFD's specific manual for detailed parameter setup.

6. OPERATING INSTRUCTIONS

6.1 Initial Start-up

1. After completing all wiring and mounting, double-check all connections for security and correctness.
2. Power on the VFD. Observe the VFD display for any error codes.
3. Start the spindle at a low RPM and gradually increase the speed to the desired operating speed. Listen for unusual noises or vibrations.

6.2 Spindle Operation

- Always ensure the spindle is running at the correct speed for the material and cutting tool being used.
- Monitor the spindle for excessive heat, noise, or vibration during operation.
- Avoid sudden changes in speed or direction, as this can stress the spindle motor.
- Ensure proper chip evacuation and cooling for the cutting process to prolong tool life and spindle health.

7. MAINTENANCE

Regular maintenance is essential to ensure the longevity and optimal performance of your spindle motor.

- **Cleaning:** Regularly clean the exterior of the spindle and VFD to prevent dust and debris buildup, which can impede cooling. Use compressed air to clear cooling fins.
- **Collet and Nut Inspection:** Periodically inspect the ER11 collets and spindle nut for wear or damage. Replace worn components to maintain tool concentricity and grip.
- **Bearing Check:** Listen for unusual noises from the spindle bearings. If grinding or excessive noise is detected, professional inspection and bearing replacement may be required.
- **Electrical Connections:** Periodically check all electrical connections for tightness and signs of corrosion.
- **Air Cooling System:** Ensure the air intake and exhaust vents on the spindle are clear and unobstructed for

efficient heat dissipation.

8. TROUBLESHOOTING

This section provides solutions to common issues you might encounter. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
Spindle does not start	No power to VFD; Incorrect VFD parameters; Loose wiring connections	Check power supply; Verify VFD settings; Inspect and tighten all wiring
Excessive vibration or noise	Unbalanced tool; Worn bearings; Loose mounting; Incorrect collet installation	Balance tool or replace; Inspect bearings; Tighten mounting bolts; Reinstall collet and tool correctly
Spindle overheating	Blocked air vents; Overload; High ambient temperature	Clear vents; Reduce load or operating time; Ensure adequate ventilation in work area
VFD displays error code	Specific VFD fault (e.g., overcurrent, overvoltage)	Refer to your VFD's manual for specific error code meanings and troubleshooting steps

9. WARRANTY AND SUPPORT

This LOCKIMELOW 1.5KW CNC Spindle Motor is designed for durability and performance. For specific warranty terms and conditions, please refer to the documentation provided at the time of purchase or contact your vendor directly.

For technical assistance, troubleshooting beyond this manual, or spare parts inquiries, please contact LOCKIMELOW customer support or your authorized dealer. When contacting support, please have your product model number (HTZ80X73-1.5) and purchase information readily available.

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