NEALMART WST2800

NEALMART Furnace Control Circuit Board Instruction Manual

Model: WST2800

1. Product Overview

This manual provides essential information for the installation, operation, and maintenance of the NEALMART B18099-13 Furnace Control Circuit Board. This board serves as a replacement for various furnace control modules, ensuring efficient and reliable furnace performance.

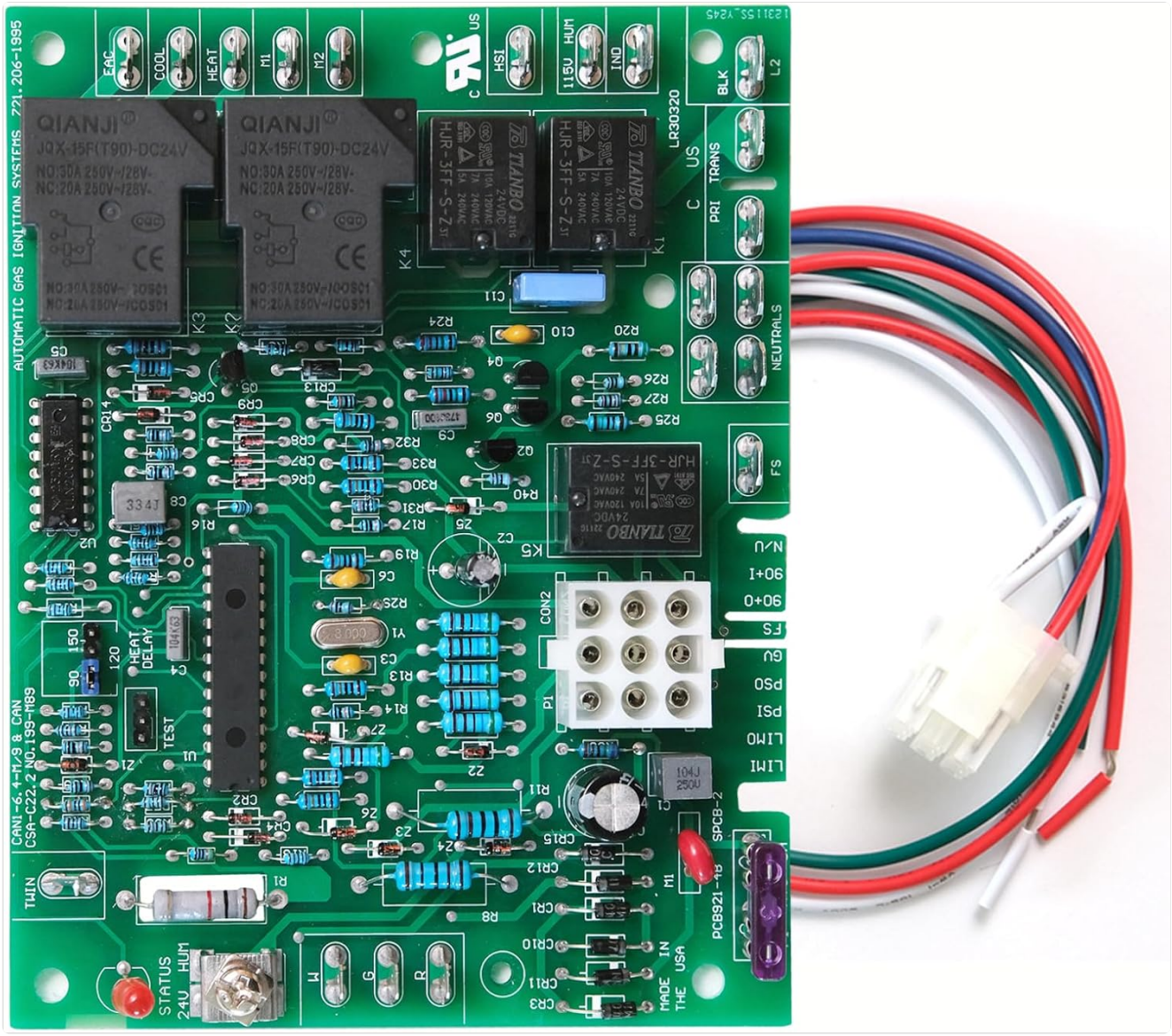

Image 1.1: The NEALMART B18099-13 Furnace Control Circuit Board, showing its green PCB and various electronic components.

2. Compatibility

The NEALMART B18099-13 Furnace Control Circuit Board is designed for wide compatibility, serving as a direct replacement for several models. Please verify your existing board's model number against the list below to ensure proper fit and function.

- **Goodman:** B1809906, B1809908, B1809910, B1809913, B1809913S
- **White-Rodgers:** 50T35-730, 50T35-743
- **UTEC:** 1012-933D
- **Texas Instruments:** 41F-5
- **ICM:** ICM280

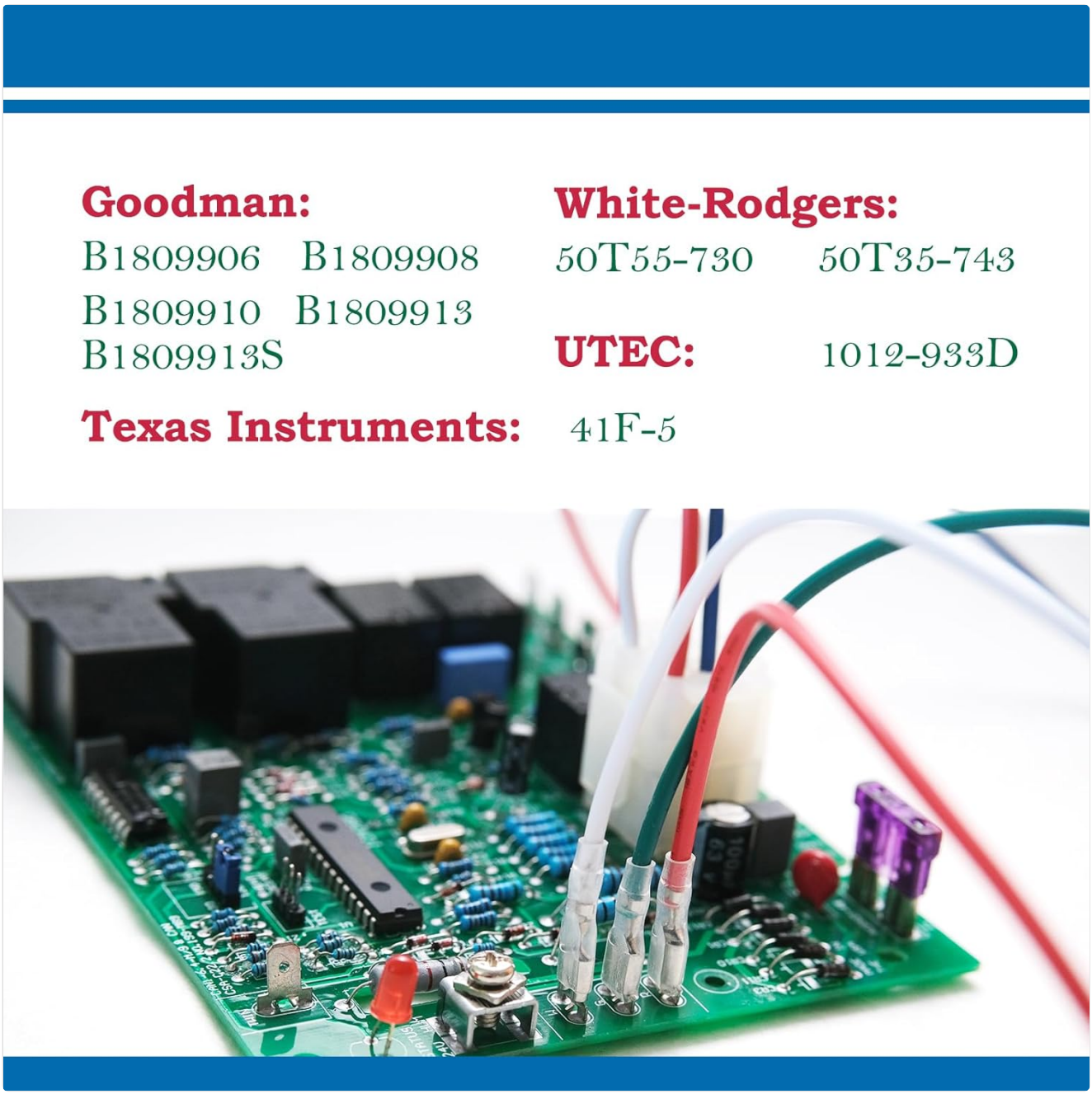

Image 2.1: Visual representation of compatible furnace control board models, including Goodman, White-Rodgers, UTEC, and Texas Instruments.

3. Key Features and Components

This furnace control board is manufactured with high-quality PCB materials and components to ensure reliability and durability in various environments. It features a microprocessor-based control module for precise timing and optimal furnace performance.

- **High-Quality Construction:** Made from durable PCB materials and robust electronic devices.
- **Microprocessor-Based Control:** Provides precise timing control for efficient furnace operation.
- **Included Cables:** Replacement cables are provided for convenience, addressing potential damage to old wiring during installation.
- **Tier-1 Brand Components:** Utilizes components from world-tier brands for enhanced stability and durability.

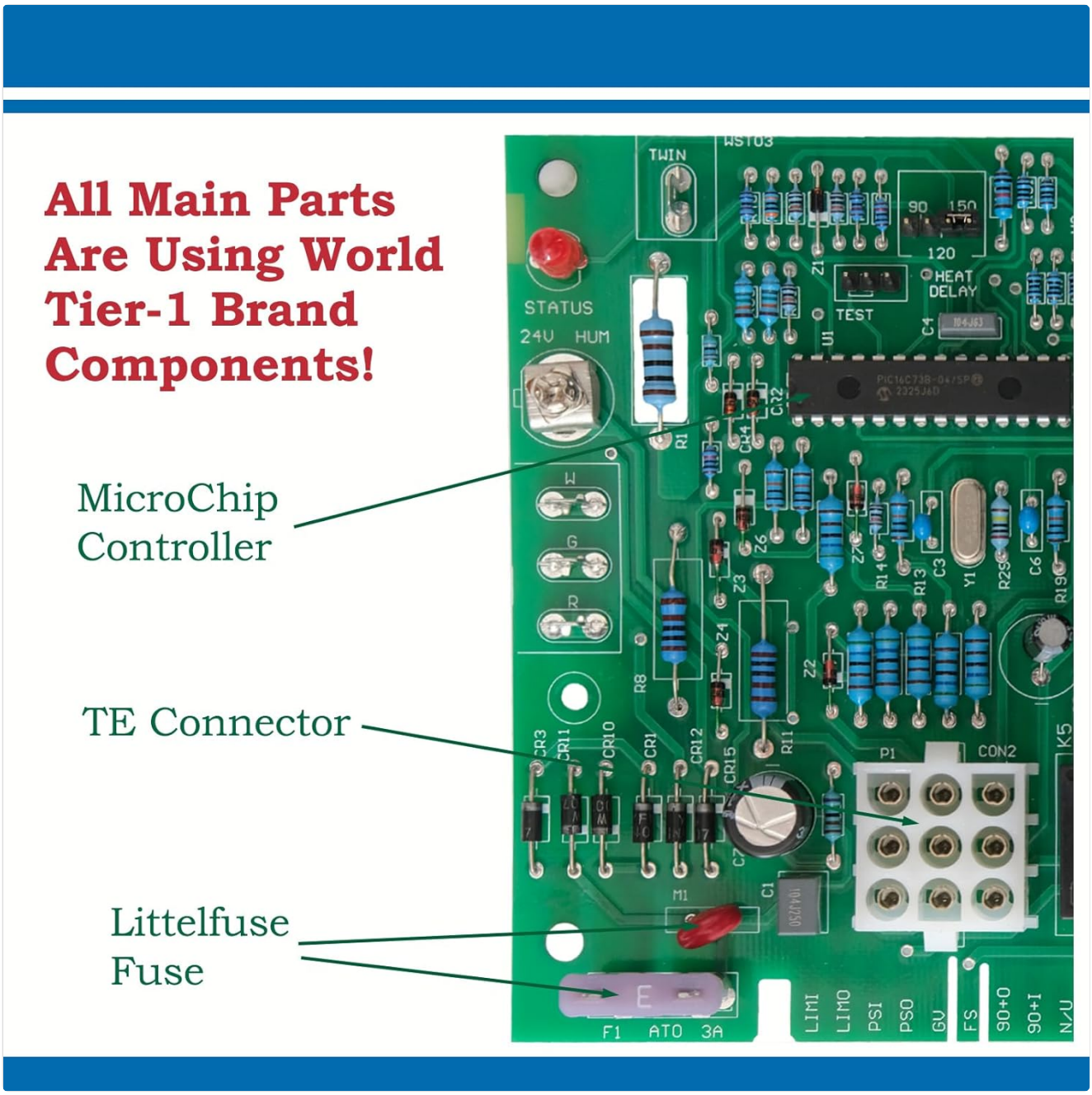

Image 3.1: Detailed view of the control board highlighting key components such as the MicroChip Controller, TE Connector, and Littelfuse Fuse.

Image 3.2: The control board showcasing TIABO Relays and Texas Instruments IC, emphasizing stability and durability.

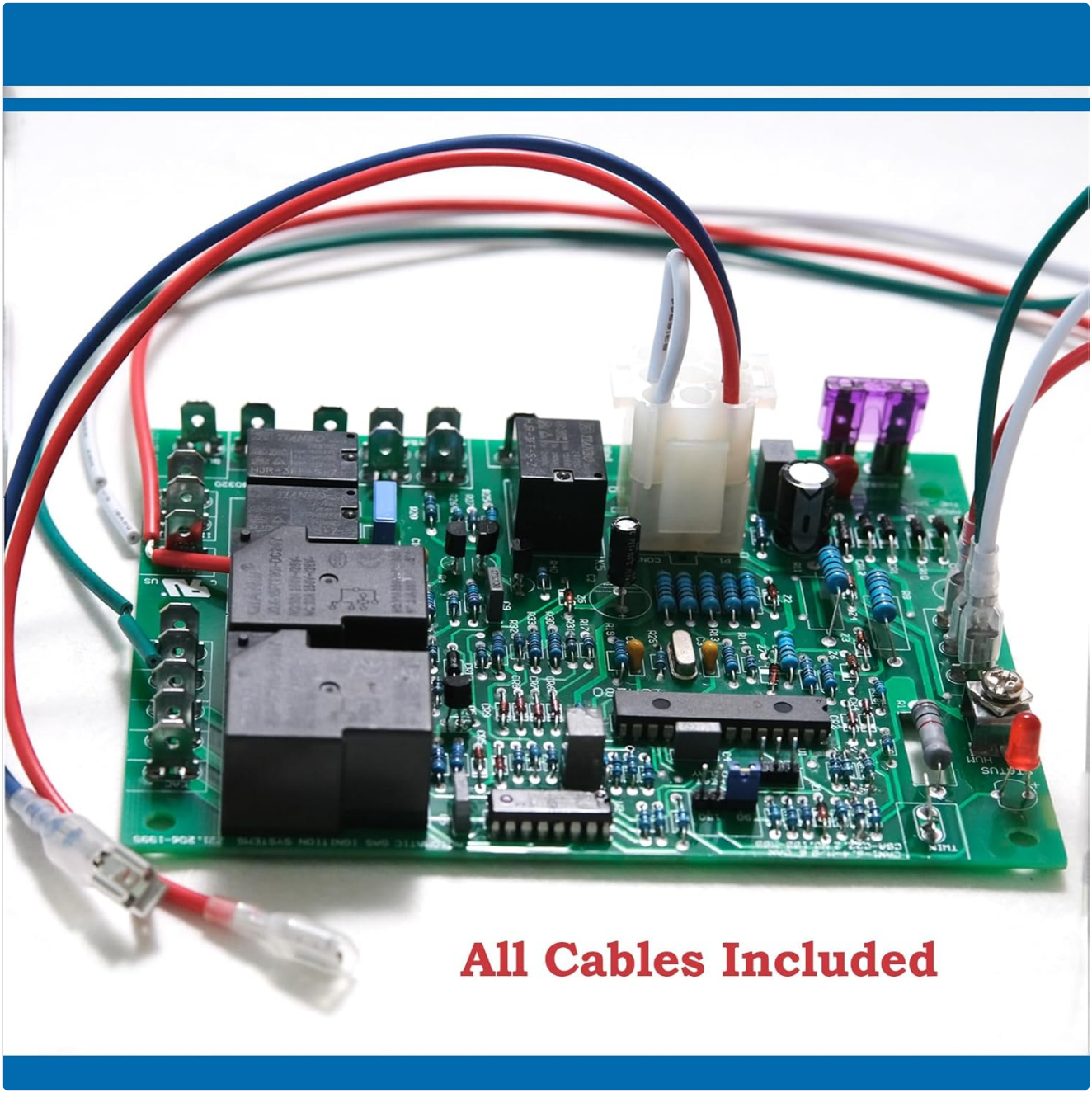

Image 3.3: The furnace control board with all necessary replacement cables included.

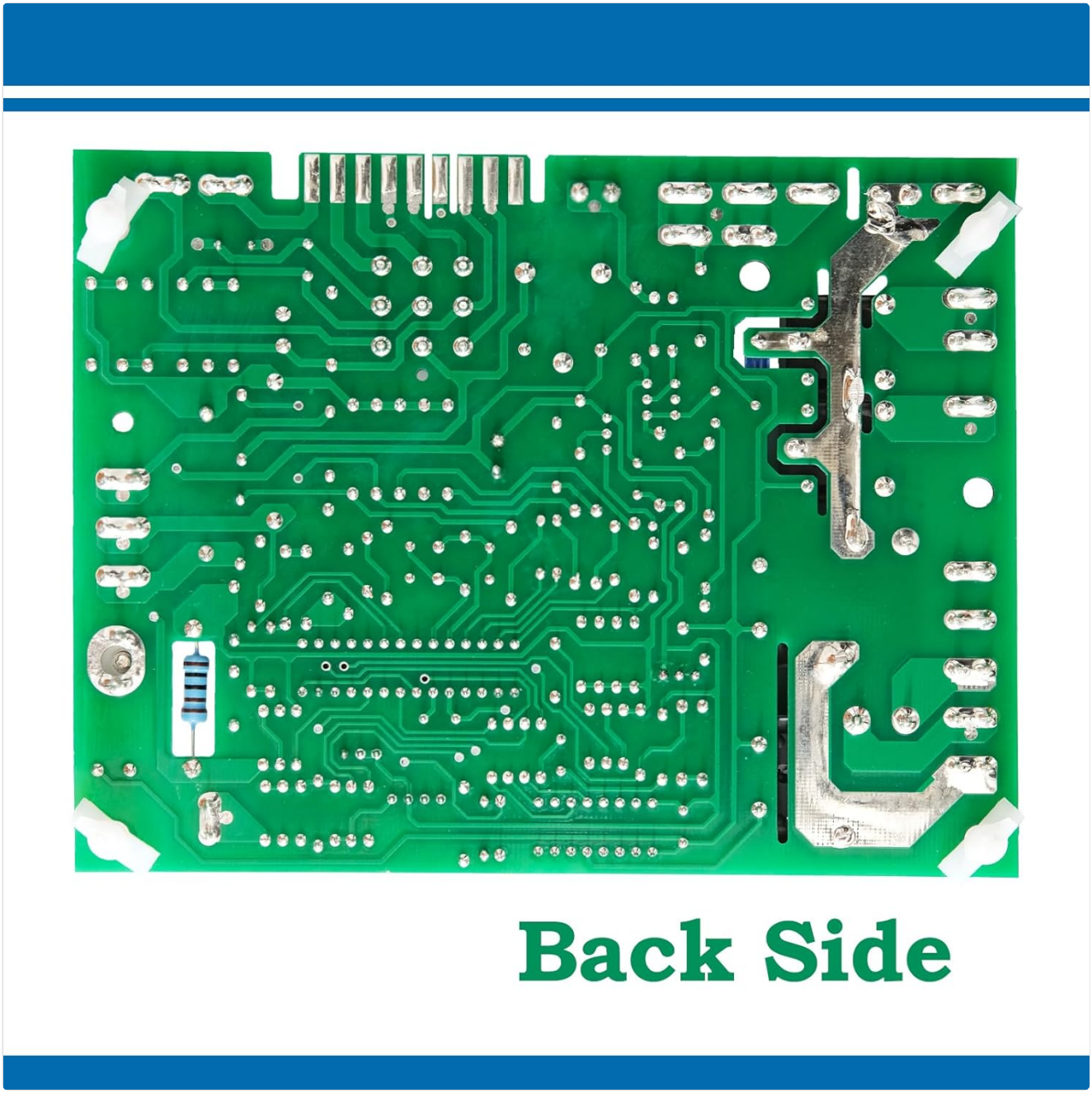

Image 3.4: View of the back side of the furnace control board, showing solder points and circuit traces.

4. Installation Guidelines

WARNING: Installation of this furnace control board should be performed by a competent technician only. Improper installation can lead to property damage, serious injury, or death.

Before beginning the installation process, ensure the power to the furnace is completely disconnected at the circuit breaker or fuse box. Always prioritize safety.

1. **Power Disconnection:** Turn off all power to the furnace unit at the main electrical panel. Verify power is off using a voltage tester.
2. **Document Existing Wiring:** Before disconnecting any wires from the old board, take clear photographs of all connections. This will serve as a crucial reference for connecting the new board correctly.
3. **Remove Old Board:** Carefully disconnect all wires and mounting screws securing the old furnace control board.
4. **Install New Board:** Position the NEALMART B18099-13 board in the same location as the old board and secure it with the appropriate mounting hardware.

5. **Connect Wiring:** Using your documented photographs, connect all wires to the corresponding terminals on the new board. Ensure all connections are secure and correct. The included replacement cables can be used if existing cables are damaged.
6. **Verify Connections:** Double-check all wiring connections against your photographs and the furnace's wiring diagram to prevent miswiring.
7. **Restore Power:** Once all connections are verified and the board is securely mounted, restore power to the furnace unit.
8. **Test Operation:** Follow the furnace manufacturer's instructions for initial startup and testing to ensure the new control board is functioning correctly.

Image 4.1: The furnace control board packaged with anti-static protection, emphasizing the importance of professional installation.

5. Operation

Once properly installed, the NEALMART B18099-13 Furnace Control Circuit Board operates automatically to manage the various functions of your furnace. It controls the ignition sequence, fan operation, and safety limits, ensuring the furnace runs efficiently and safely according to the thermostat's demands.

The microprocessor-based design allows for precise control and monitoring of furnace cycles, optimizing performance and energy usage. No direct user interaction with the board is required during normal operation.

6. Maintenance and Care

The furnace control board itself requires minimal maintenance. However, to ensure its longevity and proper function, consider the following general guidelines:

- **Regular Furnace Maintenance:** Ensure your overall furnace system receives regular professional maintenance, including filter changes and system checks. A well-maintained furnace reduces strain on all components, including the control board.
- **Keep Dry:** Protect the board from moisture and excessive humidity.
- **Dust and Debris:** Periodically, and only when power is disconnected, gently clean any accumulated dust or debris from around the board using compressed air or a soft brush.
- **Avoid Physical Damage:** Handle the board with care during any furnace servicing to prevent physical damage to components or connections.

7. Troubleshooting

While the NEALMART B18099-13 control board undergoes rigorous factory testing, issues can sometimes arise. If your furnace is not operating as expected after installation, consider the following:

- **Wiring Check:** The most common issue is incorrect wiring. Refer to the photographs you took of the old board's connections and the furnace's wiring diagram to meticulously verify every terminal connection. Ensure wires are firmly seated.
- **Power Supply:** Confirm that the furnace is receiving adequate power and that the circuit breaker has not tripped.
- **Furnace Error Codes:** Many furnaces have diagnostic lights or display error codes on the control board. Consult your furnace's specific manual to interpret these codes, as they can indicate the source of a problem.
- **Component Check:** Visually inspect the board for any signs of burnt components or loose connections.

Note: If you encounter any issues during the replacement process or have questions about our products, please do not hesitate to contact customer support. Your satisfaction is our priority.

8. Technical Specifications

Specification	Detail
Brand	NEALMART
Model Number	WST2800
Part Number	WST2800
Item Weight	12.3 ounces
Product Dimensions	6 x 4.5 x 1 inches
Included Components	Cables
Batteries Required?	No
Date First Available	June 15, 2023

9. Warranty and Support

For any questions regarding the NEALMART B18099-13 Furnace Control Circuit Board, including installation assistance or troubleshooting, please contact our customer support. We are committed to ensuring your satisfaction with our product.

While specific warranty details are not provided in this manual, please refer to your purchase documentation or contact the seller for information regarding warranty coverage and claims.