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› Luxaire Furnace Control Circuit Board P031-01972-000 Instruction Manual

Luxaire P031-01972-000

Luxaire Furnace Control Circuit Board P031-01972-000 Instruction Manual

Model: P031-01972-000

INTRODUCTION

This manual provides essential instructions for the safe and proper installation, operation, and maintenance of the Luxaire Furnace Control Circuit Board, model P031-01972-000. This board is an OEM upgraded replacement component designed for specific Luxaire furnace systems. Please read this manual thoroughly before proceeding with any installation or service.

SAFETY INFORMATION

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or loss of life. Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

- Always disconnect electrical power to the furnace before installing or servicing the control board.
- Ensure all wiring connections comply with local and national electrical codes.
- Handle the circuit board by its edges to avoid damaging components or introducing static electricity.
- Verify correct voltage and current ratings before connecting power.

SETUP AND INSTALLATION

This section outlines the steps for replacing an existing furnace control board with the Luxaire P031-01972-000.

1. Pre-Installation Checks

- Confirm that the new control board (P031-01972-000) is the correct replacement for your specific Luxaire furnace model.
- Gather necessary tools: screwdriver set, wire strippers, multimeter, and static-safe handling equipment.
- **IMPORTANT:** Turn off all power to the furnace at the main electrical panel and the furnace disconnect switch. Verify power is off using a multimeter.

2. Removing the Old Control Board

1. Take clear photographs of all wiring connections to the existing board for reference.
2. Carefully disconnect all wires from the old control board. Label wires if necessary to ensure correct re-connection.
3. Unmount the old control board from the furnace chassis.

3. Installing the New Control Board

Mount the Luxaire P031-01972-000 control board in the same location as the old board, ensuring it is securely fastened.



Figure 1: Luxaire Furnace Control Circuit Board P031-01972-000. This image displays the full circuit board with various components such as relays, resistors, capacitors, and terminal blocks for wiring connections. Key labels like "REMOTE SWITCH", "FAN SPEED", "FLAME CURRENT", and terminal designations (Y1, Y/Y2, W, R, G, C) are visible, indicating connection points for furnace components and thermostats.

4. Wiring Connections

Refer to the photographs taken during removal and your furnace's wiring diagram to connect all wires to the new P031-01972-000 board. Ensure each wire is securely attached to its corresponding terminal. Pay close attention to:

- **Thermostat Connections:** Typically labeled R, G, W, Y (or Y1, Y/Y2).
- **Blower Motor Connections:** Often labeled for different speeds (e.g., LO COOL, HI COOL, HEAT).
- **Ignition System Connections:** Including flame sensor and igniter.
- **Transformer Connections:** For power supply.
- **Safety Switches:** Such as limit switches and pressure switches.

5. Initial Power-Up

1. Once all connections are verified, restore power to the furnace at the main electrical panel and the furnace disconnect switch.
2. Observe the furnace's operation. The control board will initiate a self-diagnostic sequence.
3. Check for any error codes displayed on the board (if applicable) or unusual sounds/smells.
4. Test the furnace in both heating and cooling modes (if applicable) to ensure proper functionality.

OPERATING PRINCIPLES

The Luxaire P031-01972-000 control board serves as the central command unit for your furnace. It manages various functions including:

- **Ignition Sequence:** Controls the igniter and gas valve for safe burner ignition.
- **Flame Sensing:** Monitors the presence of a flame to ensure safe operation.
- **Blower Motor Control:** Activates and regulates the blower motor for air circulation based on heating/cooling demands and fan settings (e.g., FAN SPEED, LO COOL, HI COOL, HEAT).
- **Safety Limit Monitoring:** Integrates with safety devices like limit switches and pressure switches to prevent overheating or unsafe conditions.
- **Error Code Diagnostics:** Provides diagnostic codes (e.g., "ERROR LAST SWI") to assist in troubleshooting malfunctions.
- **Thermostat Interface:** Interprets signals from the thermostat (R, G, W, Y) to initiate heating, cooling, or fan-only operations.

Maintenance

The control board itself requires minimal maintenance. However, regular furnace maintenance is crucial for its longevity and proper function.

- **Annual Inspection:** Have a qualified HVAC technician inspect your furnace annually. They will check electrical connections, clean components, and verify proper operation of the control board and associated systems.
- **Air Filter Replacement:** Regularly replace or clean your furnace's air filter as recommended by the furnace manufacturer. A dirty filter can restrict airflow, leading to overheating and potential stress on the control board.
- **Keep Area Clear:** Ensure the area around the furnace is free from obstructions and combustible materials to allow for proper ventilation.

Troubleshooting

Before attempting any troubleshooting, ensure all power to the furnace is disconnected. If you are unsure about any step, contact a qualified HVAC technician.

Symptom	Possible Cause	Action
Furnace not starting (no heat/cool)	No power, thermostat issue, safety switch tripped, wiring error.	Check circuit breaker. Verify thermostat settings. Inspect safety switches (e.g., limit switch, pressure switch). Re-check all wiring connections to the control board.
Blower motor not running	Blower motor fault, capacitor failure, control board issue, fan speed setting.	Ensure "FAN SPEED" settings are correct. Check blower motor connections. If the motor hums but doesn't spin, the capacitor may be faulty.
Furnace cycles on and off rapidly (short cycling)	Dirty air filter, restricted airflow, oversized furnace, faulty limit switch.	Replace air filter. Check for blocked vents. Consult a technician for proper sizing or limit switch diagnosis.
No flame ignition	Faulty igniter, dirty flame sensor, gas supply issue, control board fault.	Ensure gas supply is on. Clean flame sensor. Inspect igniter for damage. Check "FLAME CURRENT" readings if diagnostic tools are available.
Error codes displayed (e.g., "ERROR LAST SWI")	Specific system fault.	Refer to your specific furnace model's manual for a detailed explanation of error codes. Common codes relate to ignition failures, limit switch trips, or pressure switch issues.

Specifications

Feature	Detail
Model Number	P031-01972-000
Brand	Luxaire
Part Type	Furnace Control Circuit Board
Compatibility	OEM Upgraded replacement for specific Luxaire furnace models. Verify with furnace documentation.

Feature	Detail
Dimensions (Approx.)	8 x 6 x 10 inches
Material	Copper
Indoor/Outdoor Usage	Indoor

WARRANTY INFORMATION

For specific warranty details regarding the Luxaire Furnace Control Circuit Board P031-01972-000, please refer to the warranty documentation provided with your purchase or contact Luxaire customer service directly. Warranty terms typically cover manufacturing defects and may vary based on the seller and region.

SUPPORT

If you encounter issues that cannot be resolved using the troubleshooting guide, or if you require further assistance, please contact a qualified HVAC technician or Luxaire customer support. When contacting support, have your furnace model number and the control board model number (P031-01972-000) readily available.

For Luxaire official information, you may visit their official website or consult your local Luxaire dealer.

ASK A QUESTION ABOUT THIS MANUAL

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