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Goodman HKTSN05X1 5 kW Electric Heat Kit Instruction Manual

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1. INTRODUCTION

This manual provides instructions for the installation, operation, and maintenance of the Goodman HKTSN05X1 5 kW Electric Heat Kit. This heat kit is designed to integrate with compatible Goodman brand air handlers to provide supplemental electric heating. Please read these instructions thoroughly before installation and operation to ensure proper function and safety.

The Goodman HKTSN05X1 is a fully electric heating solution, eliminating the need for gas lines. It operates at 208/240V, single phase, 60 Hertz, and provides approximately 17125 BTUs of heating per hour with an average electricity consumption of 5 kW.

2. SAFETY INFORMATION

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read these instructions thoroughly before installing or servicing this equipment.

- Always disconnect power to the air handler unit before installing or servicing the heat kit.
- Installation must be performed by a qualified installer or service agency.
- Ensure all wiring complies with local and national electrical codes.
- This heat kit is designed for indoor use only.
- Do not operate the unit with damaged wiring or components.
- The unit contains no user-serviceable parts. Refer all servicing to qualified personnel.
- Meets UL 60335-2-40 standards for safety and quality assurance.

3. SETUP AND INSTALLATION

3.1 Compatibility Check

Verify that your air handler is compatible with the Goodman HKTSN05X1 heat kit. This kit is compatible with the following Goodman brand products:

- AHVE Air Handlers
- AMVE Air Handlers
- AMVT Air Handlers
- AMST Air Handlers
- AWST Air Handlers

Always double-check your air handler's model number before proceeding with installation.

3.2 Installation Steps

1. **Power Disconnection:** Ensure the main power supply to the air handler unit is completely disconnected at the circuit breaker before beginning any installation. Verify with a voltage tester.
2. **Access Panel Removal:** Locate and remove the access panel on your Goodman air handler unit where the heat kit is to be installed. Refer to your air handler's manual for specific instructions.
3. **Heat Kit Insertion:** Carefully slide the HKTSN05X1 heat kit into the designated slot within the air handler. Ensure it is seated firmly and correctly.
4. **Wiring Connection:** Connect the plug-in wiring harness from the heat kit to the corresponding receptacle within the air handler. The design is intended for quick and straightforward connection. Ensure all connections are secure.
5. **Secure Heat Kit:** Fasten the heat kit in place using any provided screws or clips, as per the air handler's installation guide.
6. **Replace Access Panel:** Reinstall the air handler's access panel, ensuring it is securely closed.
7. **Power Restoration:** Restore power to the air handler unit at the circuit breaker.
8. **Test Operation:** Proceed to the "Operating Instructions" section to test the heat kit's functionality.

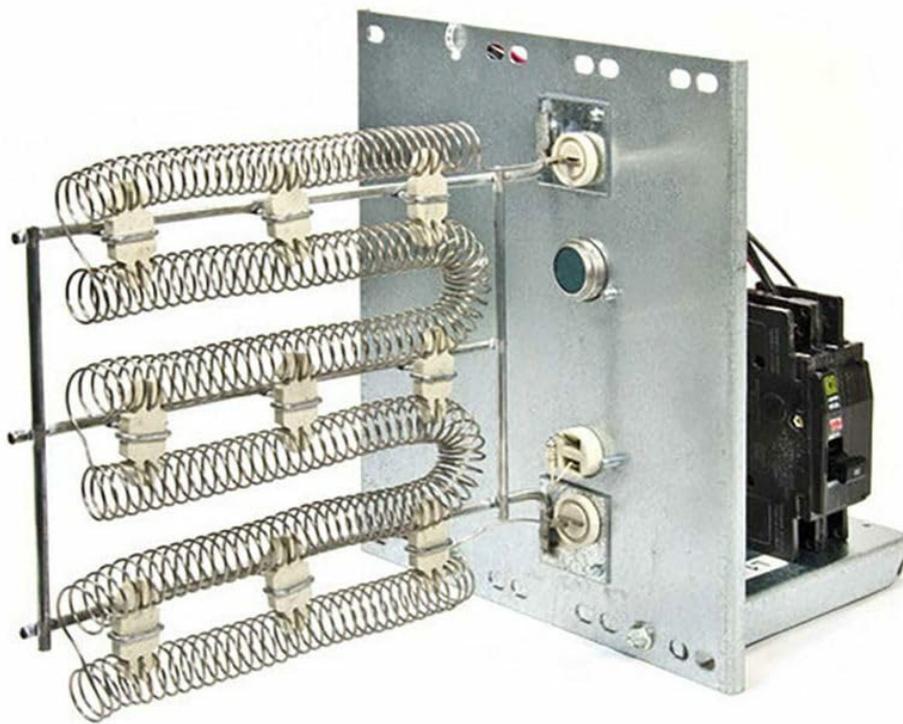


Figure 1: Goodman HKTSN05X1 Electric Heat Kit. This image shows the compact design of the heat kit, highlighting its heating elements and electrical connections, ready for installation into a compatible air handler.

4. OPERATING INSTRUCTIONS

Once installed, the Goodman HKTSN05X1 Electric Heat Kit operates in conjunction with your air handler and thermostat. The heat kit does not have independent controls; its operation is managed by the air handler's control board and your home's thermostat.

4.1 Initial Start-up

1. Ensure power is restored to the air handler unit.

2. Set your thermostat to "Heat" mode.
3. Adjust the thermostat's temperature setting to a value higher than the current room temperature.
4. The air handler fan should activate, and after a short delay, the heat kit's elements will energize, producing warm air.

4.2 Normal Operation

- The heat kit will cycle on and off as needed to maintain the temperature set on your thermostat.
- Enhanced sequencers allow for increased temperature control, ensuring efficient heating.
- The system's control circuitry is arranged to permit staging, meaning the heat elements can be activated in stages to match heating demand.

5. MAINTENANCE

The Goodman HKTSN05X1 Electric Heat Kit is designed for minimal maintenance. However, regular inspection of the air handler and its components is recommended to ensure optimal performance and longevity.

- **Annual Inspection:** It is recommended to have a qualified HVAC technician inspect the heat kit and air handler annually. This inspection should include checking electrical connections, heating elements, and safety devices.
- **Air Filter Replacement:** Ensure the air filter in your air handler is replaced regularly according to the air handler's manufacturer recommendations. A clean filter ensures proper airflow and prevents overheating of the heat kit elements.
- **Cleaning:** The heat kit itself generally does not require cleaning. If dust or debris accumulates, ensure power is disconnected and gently remove it using a soft brush or vacuum.
- **Fuse Links:** The incorporated fuse links provide high-temperature safety. If a fuse link trips, it indicates an issue that requires professional diagnosis and repair. Do not attempt to bypass or reset fuse links yourself.

6. TROUBLESHOOTING

This section provides solutions to common issues. For problems not listed here or if solutions do not resolve the issue, contact a qualified HVAC technician.

Problem	Possible Cause	Solution
No heat output	<ul style="list-style-type: none"> • No power to air handler • Thermostat set incorrectly • Tripped circuit breaker • Loose wiring connection • Blown fuse link in heat kit 	<ul style="list-style-type: none"> • Check main power supply • Ensure thermostat is in "Heat" mode and set above room temperature • Reset circuit breaker • Verify all wiring connections (<i>ensure power is off first</i>) • Contact a qualified technician for fuse link replacement
Insufficient heat	<ul style="list-style-type: none"> • Dirty air filter • Incorrect thermostat settings • Partial element failure 	<ul style="list-style-type: none"> • Replace or clean air filter • Adjust thermostat settings • Contact a qualified technician

Problem	Possible Cause	Solution
Burning smell	<ul style="list-style-type: none"> Dust accumulation on elements (common during initial use) Overheating due to restricted airflow 	<ul style="list-style-type: none"> Ensure proper ventilation. Smell should dissipate quickly. Check and replace air filter. If smell persists, disconnect power and contact technician.

7. SPECIFICATIONS

Feature	Detail
Model Number	HKTSN05X1
Brand	Goodman
Heating Capacity	5 kW (approximately 17125 BTUs/hour)
Voltage	208/240V
Phase	Single Phase
Frequency	60 Hertz
Compatibility	Goodman AHVE, AMVE, AMVT, AMST, AWST Air Handlers
Safety Standards	UL 60335-2-40, ETL Listed, ISO Certified
Heat Elements	Rust and corrosion-resistant nickel chromium

8. WARRANTY AND SUPPORT

For specific warranty information regarding your Goodman HKTSN05X1 Electric Heat Kit, please refer to the documentation provided with your purchase or visit the official Goodman website. Warranty terms typically cover defects in materials and workmanship under normal use and service.

Customer Support:

- For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact Goodman customer service or your authorized Goodman dealer.
- Ensure you have your model number (HKTSN05X1) and purchase date available when contacting support.
- Online resources and FAQs may be available on the official Goodman website: www.goodmanmfg.com