Goodman AMST24BU1300

Goodman AMST24BU1300 Air Handler Instruction Manual

Model: AMST24BU1300

1. Introduction to Your Air Handler

The Goodman AMST24BU1300 is a 2-ton multi-position air handler designed for efficient air circulation and temperature regulation within your home. This unit is specifically compatible with R-32 refrigerant. Proper installation and maintenance are crucial for optimal performance and warranty validity.

An air handler is a key component of an HVAC system, responsible for moving conditioned air throughout your home's ductwork. It works in conjunction with an outdoor condenser (for cooling) or a heat pump (for heating and cooling) to maintain desired indoor temperatures.

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Video 1: An informational video explaining the function and components of air handlers. This video provides a general overview of how air handlers assist in regulating indoor air circulation and temperature.

2. How Your Air Handler Works

The air handler operates by drawing indoor air from your home's return ducts. This air first passes through a filter to remove dust, allergens, and other airborne particles. After filtration, the air moves across an evaporator coil. If cooling, the refrigerant within the coil absorbs heat and humidity from the air. If heating (with a heat pump or optional heat kit), the coil transfers heat to the air. Finally, a powerful blower motor pushes the conditioned air through the supply ducts and back into your living spaces.

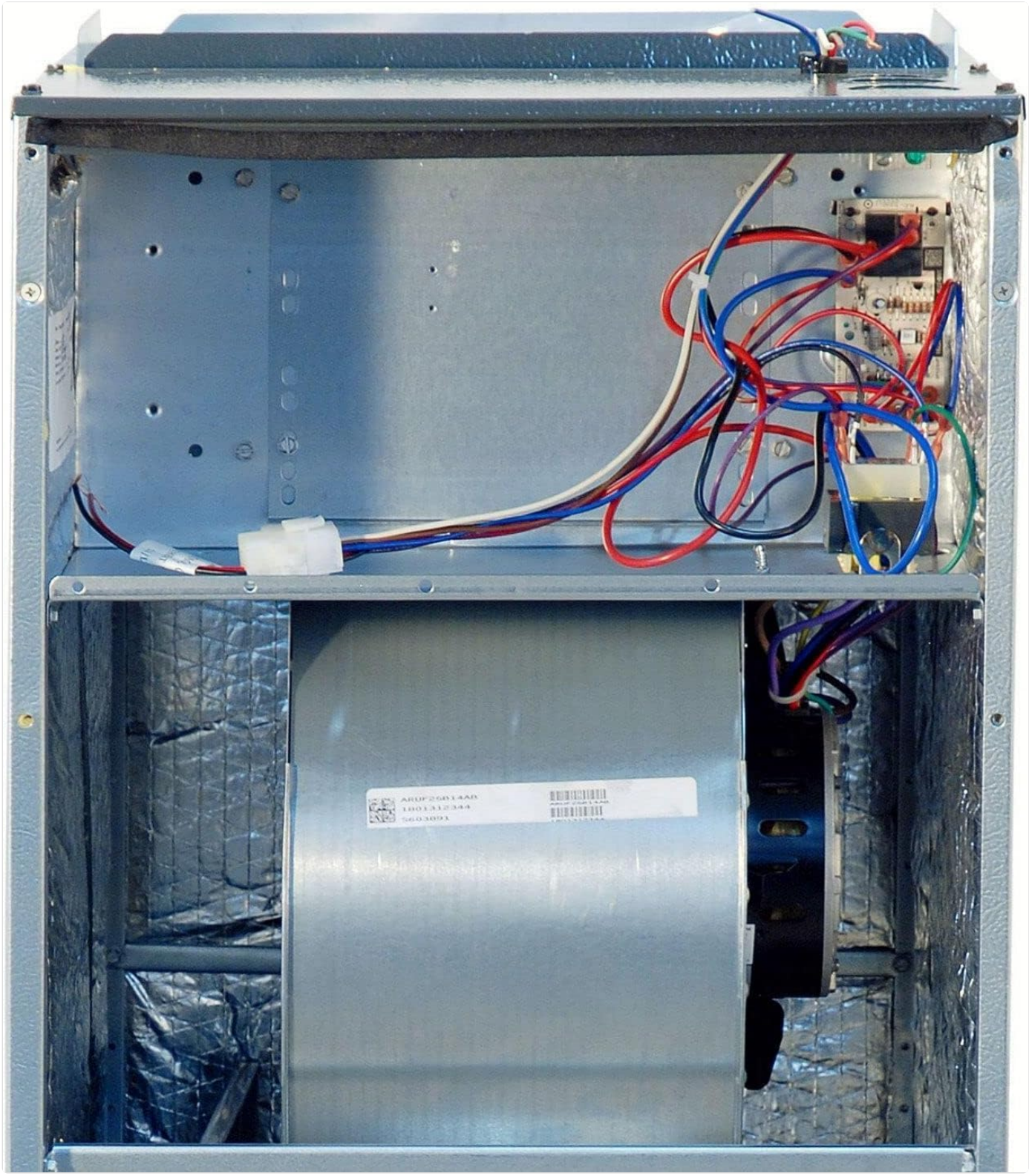


Image 1: Internal view of the Goodman AMST24BU1300 air handler, highlighting the blower motor and evaporator coil. This image illustrates the core components responsible for air movement and conditioning.

3. Key Components

Your Goodman AMST24BU1300 air handler consists of several critical components working together:

- **Blower Motor:** This motor drives the fan that circulates air through the system and into your home's ductwork. The AMST24BU1300 features a multi-speed ECM-based motor for efficient and variable airflow.
- **Evaporator Coil:** This component contains the R-32 refrigerant. During cooling, it absorbs heat and humidity from the indoor air.
- **Air Filter:** Located at the air intake, the filter traps airborne particles, improving indoor air quality and protecting internal

components from debris. Regular replacement is essential.

- **Internal TXV (Thermostatic Expansion Valve):** This valve regulates the flow of refrigerant into the evaporator coil, optimizing system performance and efficiency.
- **Optional Heat Kit (HKT):** For heating applications, field-installed HKT heat kits are available separately to provide supplemental electric heat.

Image 2: A detailed view of the evaporator coil, showing the intricate copper tubing and fins where heat exchange occurs. This is a crucial part of the air conditioning process.

4. Types of Air Handlers

Air handlers come in various configurations to suit different installation requirements:

- **Multi-Positional Air Handlers:** The Goodman AMST24BU1300 is a multi-position unit, meaning it can be installed in upflow, downflow, or horizontal configurations. The chosen position must align with your home's ductwork and space availability.
- **Wall-Mounted Air Handlers:** These are typically more compact and designed for installation on walls or between wall studs, often in utility closets or areas with limited space.
- **Ceiling-Mounted Air Handlers:** Installed above ceilings, these units are ideal for homes without traditional ductwork or where space is a significant constraint.

Image 3: Front view of the Goodman AMST24BU1300 multi-position air handler, showcasing its compact design suitable for various installation orientations.

5. Setup and Installation

Installation of the Goodman AMST24BU1300 air handler should only be performed by a qualified HVAC technician. Incorrect installation can lead to system malfunction, voided warranty, and safety hazards.

5.1 Pre-Installation Checks

- Verify that the unit model (AMST24BU1300) matches your system requirements.
- Ensure compatibility with R-32 refrigerant ONLY. Using any other refrigerant will void the warranty.

- Confirm that the electrical supply meets the unit's voltage requirements (230 Volts).
- Inspect the unit for any shipping damage.

5.2 Positioning

As a multi-position unit, the AMST24BU1300 can be installed in upflow, downflow, or horizontal configurations. The chosen position must align with your home's ductwork and space availability. Ensure adequate clearance for maintenance and airflow.

Image 4: Dimensions of the Goodman AMST24BU1300 air handler, indicating its height, width, and depth for proper installation planning.

5.3 Refrigerant Lines and Electrical Connections

The unit must be connected to the outdoor condenser via appropriate refrigerant lines. Electrical connections should be made according to local codes and the wiring diagram provided with the unit. Only R-32 refrigerant should be used.

5.4 Heat Kit Installation (Optional)

If supplemental heating is required, an optional field-installed HKT heat kit can be integrated. Refer to the specific heat kit's installation manual for detailed instructions.

6. Operating Your Air Handler

Once properly installed, your air handler operates automatically in conjunction with your thermostat and outdoor unit. Set your desired temperature on the thermostat, and the system will engage to achieve and maintain that setting.

- **Thermostat Settings:** Familiarize yourself with your thermostat's operating modes (e.g., Cool, Heat, Auto, Fan On/Auto).
- **Fan Operation:** The fan can typically be set to "Auto" (runs only when heating or cooling) or "On" (runs continuously for constant air circulation). Continuous fan operation can help with air filtration and even temperature distribution.
- **R-32 Refrigerant:** This unit is designed exclusively for R-32 refrigerant. Ensure your outdoor unit is also compatible with R-32.

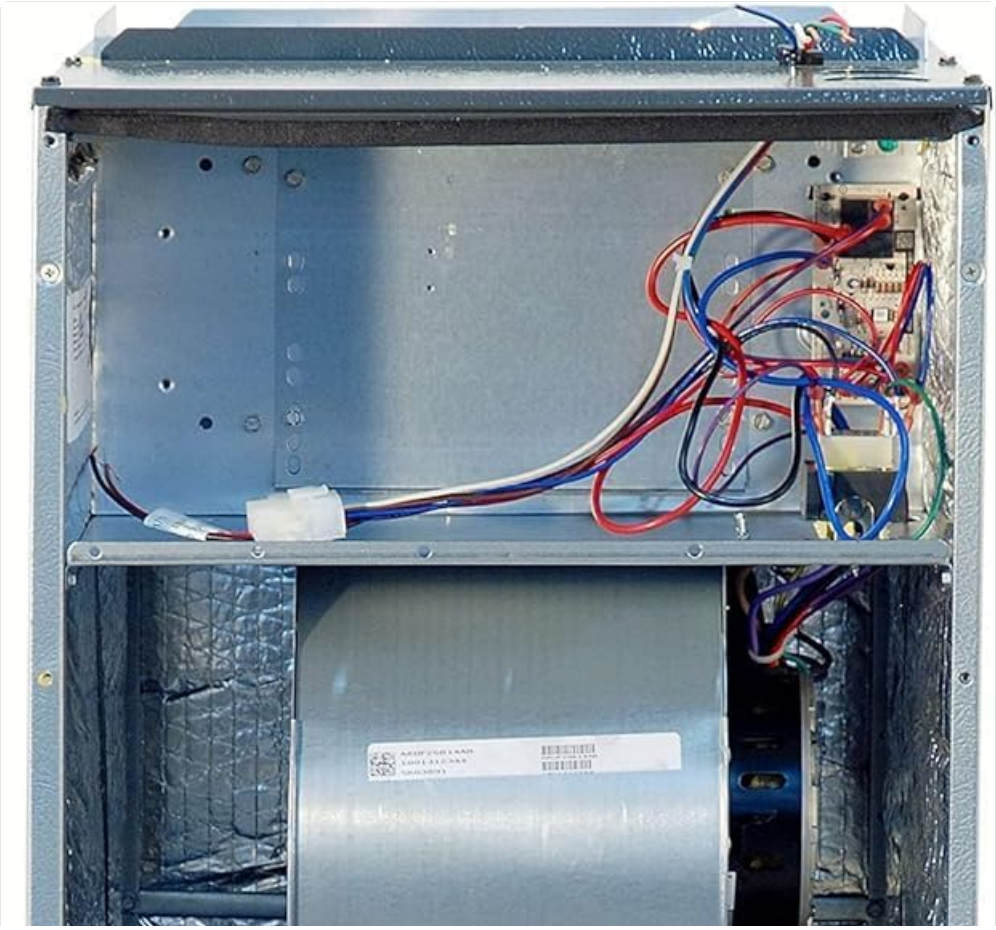
7. Maintenance

Regular maintenance is vital for the efficiency, longevity, and safe operation of your air handler. Always disconnect power to the unit before performing any maintenance.

7.1 Air Filter Replacement

The air filter should be inspected monthly and replaced every 1-3 months, or more frequently if you have pets, allergies, or high dust levels. A dirty filter restricts airflow, reduces efficiency, and can damage the unit.

- Locate the filter access panel on your air handler.
- Remove the old filter, noting the airflow direction arrow.
- Insert a new, clean filter of the correct size and MERV rating, ensuring the airflow arrow points towards the blower motor.



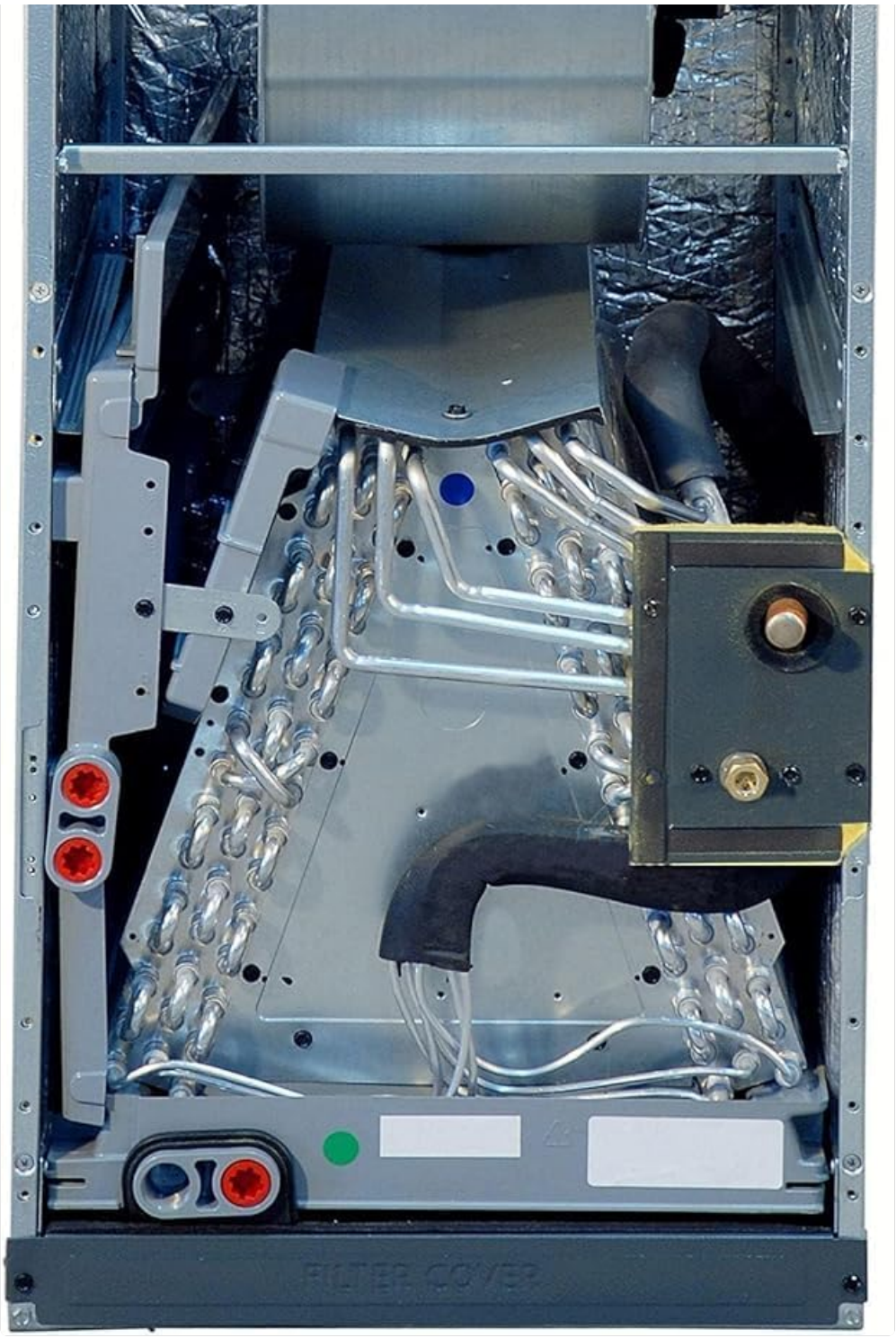


Image 5: The Goodman AMST24BU1300 air handler with the filter compartment open, illustrating the location and appearance of the air filter for maintenance.

7.2 Coil Cleaning

The evaporator coil should be professionally cleaned annually to ensure efficient heat transfer. Dirt and debris on the coil can significantly reduce cooling and heating capacity.

7.3 Drain Pan and Line

Check the condensate drain pan and line regularly for blockages or standing water. A clogged drain line can cause water overflow and damage.

7.4 Professional Inspection

It is recommended to have a qualified HVAC technician perform a comprehensive inspection and tune-up of your system annually.

8. Troubleshooting

Before calling for service, check these common issues:

Problem	Possible Cause	Solution
No heating or cooling	Thermostat setting incorrect, power supply off, dirty filter, outdoor unit issue.	Check thermostat, ensure power is on, replace filter, check outdoor unit.
Weak airflow	Dirty air filter, blocked return/supply vents, duct leaks.	Replace filter, clear vents, contact technician for duct inspection.
Unusual noises	Loose parts, motor issues, debris in blower.	Turn off unit and inspect for loose items. If noise persists, contact technician.
Water leakage	Clogged condensate drain line, frozen evaporator coil.	Clear drain line, check filter, ensure proper airflow. If coil is frozen, contact technician.

If these steps do not resolve the issue, contact a qualified HVAC technician for diagnosis and repair.

9. Specifications

Feature	Detail
Brand	Goodman
Model Number	AMST24BU1300
Capacity	2 Tons
Refrigerant Type	R-32 ONLY
Motor Type	Multi-Speed ECM Based
Installation Type	Multi-Position (Upflow, Downflow, Horizontal)
Voltage	230 Volts
Product Dimensions	23 x 18.5 x 49 inches (approximate)
Item Weight	175 pounds

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Video 2: An informational video discussing R-32 refrigerant, clarifying facts versus fiction regarding its use in HVAC systems. This is relevant as the AMST24BU1300 is R-32 compatible only.

10. Warranty Information

The Goodman AMST24BU1300 air handler comes with a **10-year parts-only limited warranty**. This warranty is valid if the unit is installed by a qualified installer and registered online within 60 days of installation. Online registration is not required in California. *Important:* Using this unit with any refrigerant other than R-32 will result in a voided warranty. For full warranty details, please contact Goodman customer support or your installer.

Image 6: Goodman 10-year limited warranty shield, indicating the product's warranty coverage.

11. Support and Service

For technical assistance, service, or warranty claims, please contact your installing dealer or a qualified Goodman service provider. Ensure you have your model number (AMST24BU1300) and serial number readily available.

You can also visit the official Goodman website for additional resources and to locate authorized service technicians in your area.