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› Goodman 2.0 Ton 14.3 SEER2 Heat Pump System with Air Handler (Models GSZM402410 & AMST24BU1400) - User Manual

Goodman GSZM402410AMST24BU1400

Goodman 2.0 Ton 14.3 SEER2 Heat Pump System with Air Handler

Models: GSZM402410 (Heat Pump) & AMST24BU1400 (Air Handler)

INTRODUCTION

This manual provides essential information for the safe and efficient operation, maintenance, and troubleshooting of your Goodman 2.0 Ton 14.3 SEER2 Heat Pump System. This system comprises the GSZM402410 outdoor heat pump unit and the AMST24BU1400 multi-position air handler. Please read this manual thoroughly before installation or operation and retain it for future reference.



Image: The Goodman 2.0 Ton 14.3 SEER2 Heat Pump System, showing both the outdoor condenser unit and the indoor air handler unit.

IMPORTANT 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 or service agency.

- Always disconnect power to the unit before performing any service or maintenance.
- This system uses R-410A refrigerant. Only qualified personnel should handle refrigerant.
- Ensure proper grounding of all electrical components.
- Follow all local and national electrical codes.
- Keep children and pets away from the outdoor unit.

PRODUCT OVERVIEW

The Goodman Heat Pump System provides efficient heating and cooling for residential applications. It consists of two primary components:

1. Outdoor Heat Pump Unit (Model: GSZM402410)

This unit is responsible for transferring heat between the indoor and outdoor environments. It features a scroll compressor for reliable operation and is pre-charged with R-410A refrigerant.

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Goodman GSZM402410



Tonnage

2

Efficiency

14.3 SEER2

Type

Heat Pump

Lineset

3/8 x 3/4

Dimensions

29 x 29 x 36

Weight

164

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WARRANTY***

Image: The Goodman GSZM402410 outdoor heat pump unit, highlighting its specifications such as 2-ton tonnage, 14.3 SEER2 efficiency, and dimensions.

2. Indoor Air Handler Unit (Model: AMST24BU1400)

The air handler circulates conditioned air throughout your home. This multi-position unit is constructed with corrosion-

resistant aluminum and features grooved tubing for enhanced heat transfer.



Goodman AMST24BU1400



Tonnage

2.0

Dimensions

17.5 x 21 x 45

Connections

3/8" x 3/4"

Weight

112

Multi-Position, Multi-Speed

ECM-Based with built-in TXV



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Image: The Goodman AMST24BU1400 indoor air handler unit, detailing its 2.0-ton tonnage, dimensions, and multi-position, multi-speed capabilities.

Professional installation by a qualified HVAC technician is required for this system. Attempting self-installation may void warranties and lead to safety hazards.

Key installation considerations include:

- **Location:** The outdoor unit requires adequate airflow and clearance. The indoor air handler can be installed in various positions (upflow, downflow, horizontal).
- **Refrigerant Lines:** Proper sizing and connection of refrigerant lines (liquid and suction) are critical. The outdoor unit is pre-charged for 15 feet of tubing.
- **Electrical Connections:** Ensure correct voltage (208/230V) and proper wiring according to the unit's wiring diagram and local codes.
- **Condensate Drain:** The air handler requires a properly sloped and trapped condensate drain line.
- **Ductwork:** Connect the air handler to the existing or new ductwork system, ensuring proper sealing for optimal efficiency.
- **Heat Kit (Optional):** For colder climates, an auxiliary heat kit may be required and should be installed by a professional.

OPERATING INSTRUCTIONS

Once installed, your Goodman Heat Pump System is controlled by a compatible thermostat. Refer to your thermostat's user manual for specific programming and operation instructions.

Basic Operation:

1. **Power On:** Ensure the main power disconnect switch for both the outdoor unit and indoor air handler is in the "ON" position.
2. **Thermostat Settings:**
 - **Mode:** Select "COOL" for air conditioning, "HEAT" for heating, or "AUTO" for automatic switching.
 - **Fan:** Set to "AUTO" for the fan to run only when heating or cooling, or "ON" for continuous fan operation.
 - **Temperature:** Adjust the desired temperature setting.
3. **Initial Startup:** Allow the system a few minutes to respond to thermostat changes. During initial startup or after a power outage, there might be a slight delay.

For optimal efficiency, avoid frequent and drastic temperature adjustments. Consider using programmable thermostat features to set schedules.

MAINTENANCE

Regular maintenance ensures the longevity and efficiency of your heat pump system. Some tasks can be performed by the homeowner, while others require a qualified technician.

Homeowner Maintenance (Monthly/Quarterly):

- **Air Filter Replacement/Cleaning:** Check and replace or clean the air filter in the air handler every 1-3 months, or more frequently if you have pets or allergies. A dirty filter restricts airflow and reduces efficiency.
- **Outdoor Unit Cleaning:** Keep the area around the outdoor unit clear of debris, leaves, and vegetation. Ensure coils are free from obstructions. Gently rinse the outdoor coil with a garden hose if it appears dirty.
- **Condensate Drain Check:** Periodically check the condensate drain line for blockages. Clear any visible obstructions.

Professional Maintenance (Annually):

Schedule an annual inspection and tune-up by a qualified HVAC technician. This typically includes:

- Checking refrigerant levels and pressures.
- Inspecting electrical connections and components.
- Cleaning evaporator and condenser coils.
- Lubricating moving parts (if applicable).
- Checking thermostat calibration.
- Inspecting ductwork for leaks.

TROUBLESHOOTING

Before calling for service, review the following common issues and potential solutions:

Problem	Possible Cause	Solution
System not turning on	No power, thermostat off, tripped breaker	Check power switches, thermostat settings, and circuit breakers.
Insufficient heating/cooling	Dirty air filter, blocked outdoor unit, incorrect thermostat setting, low refrigerant	Replace/clean filter, clear outdoor unit, verify thermostat mode, contact technician for refrigerant check.
Unusual noises	Loose parts, debris in fan, motor issues	Turn off unit and inspect for debris. If noise persists, contact a technician.
Water leaking from air handler	Clogged condensate drain line	Clear the condensate drain line. If problem persists, contact a technician.

If these steps do not resolve the issue, contact a qualified HVAC service technician.

SPECIFICATIONS

Detailed technical specifications for the Goodman 2.0 Ton 14.3 SEER2 Heat Pump System:

Feature	Specification
System Type	Split System Heat Pump
Outdoor Unit Model	GSZM402410
Indoor Unit Model	AMST24BU1400
Cooling Capacity	2 Tons (24,000 BTU)
SEER2 Rating	14.3
Refrigerant Type	R-410A
Voltage	208/230 Volts

Feature	Specification
Outdoor Unit Dimensions (H x W x D)	36" x 29" x 29"
Outdoor Unit Weight	Approximately 164 lbs
Air Handler Dimensions (H x W x D)	45" x 21" x 17.5"
Air Handler Weight	Approximately 112 lbs
Noise Level (Outdoor Unit)	72 dB
Special Features	Scroll Compressor, Factory-installed filter drier, Corrosion-resistant aluminum air handler, ECM-based with built-in TXV



Image: An internal cutaway view of the Goodman heat pump unit, showing the compressor, coils, and fan assembly.

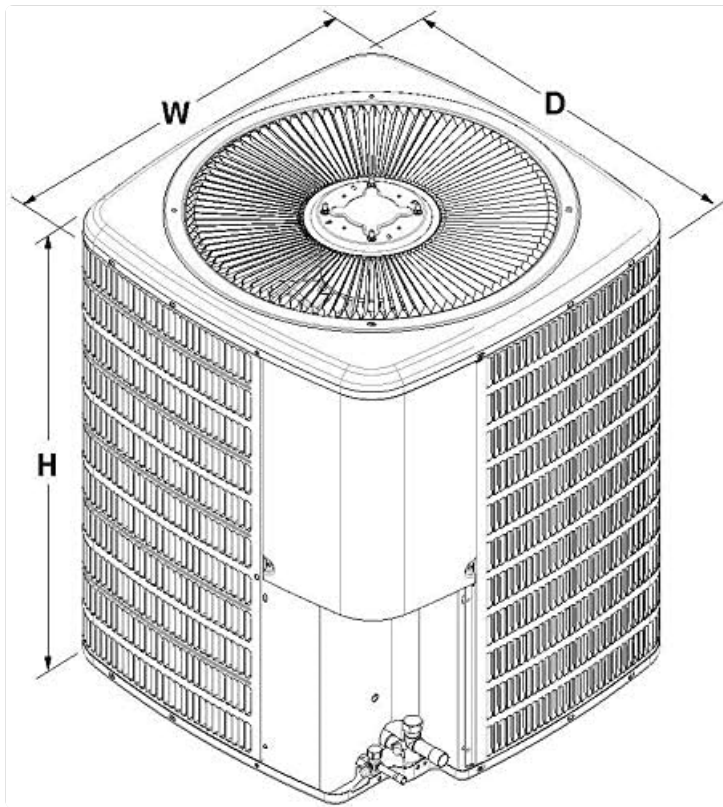


Image: A dimensional diagram of the Goodman heat pump unit, indicating height (H), width (W), and depth (D) for installation planning.

WARRANTY INFORMATION

Goodman offers a **10-Year Parts Limited Warranty** on this heat pump system. This warranty covers parts only and is subject to terms and conditions, including proper installation by a qualified professional and timely registration of the product.



Image: A shield graphic indicating the Goodman 10-Year Limited Warranty for parts.

For complete warranty details, please refer to the warranty certificate included with your product or visit the official Goodman website. Keep your proof of purchase and installation records.

SUPPORT AND SERVICE

For technical assistance, warranty claims, or to schedule professional service, please contact your installing HVAC contractor or visit the official Goodman website for authorized service providers.

Goodman Customer Support:

- **Website:** www.goodmanmfg.com
- **Phone:** Refer to the contact information provided on the Goodman website for your region.

When contacting support, please have your model numbers (GSZM402410 and AMST24BU1400) and serial numbers readily available.

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