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> Goodman 3.5 Ton 15.2 SEER2 Heat Pump System User Manual (Models GLZS4BA4210 & AMST42CU1300)

Goodman GLZS4BA4210AMST42CU1300



Goodman 3.5 Ton 15.2 SEER2 Heat Pump System User Manual

Models: GLZS4BA4210 (Condenser) & AMST42CU1300 (Air Handler)

INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your Goodman 3.5 Ton 15.2 SEER2 Multi-Position R-32 Heat Pump System. This system comprises the Goodman GLZS4BA4210 Heat Pump (condenser) and the Goodman AMST42CU1300 Air Handler. Proper installation and regular maintenance by qualified professionals are crucial for optimal performance, efficiency, and longevity of the unit.

Important Safety Notice:

Installation and servicing of air conditioning and heating equipment can be hazardous due to system pressure, electrical components, and sharp edges. Only trained, qualified service technicians should install, repair, or service this equipment. Failure to follow these instructions could result in property damage, personal injury, or death.



Image: The Goodman 3.5 Ton Heat Pump System, showing both the outdoor condenser unit and the indoor air handler unit. The condenser is a dark gray, rectangular unit with a fan on top, while the air handler is a taller, dark gray cabinet.

SETUP AND INSTALLATION

This section outlines key considerations for the professional installation of your Goodman Heat Pump System. Installation must be performed by a qualified HVAC technician.

1. System Components

- **Goodman GLZS4BA4210 Heat Pump (Condenser):** The outdoor unit responsible for heat exchange.
- **Goodman AMST42CU1300 Air Handler:** The indoor unit that circulates conditioned air.

Goodman GLZS4BA4210



Tonnage

3.5

Efficiency

14.3 SEER2

Type

Heat Pump

Dimensions

35.5 x 35.5 x 35.5

Weight

262

Lineset

3/8" x 1 1/8"

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R32

Image: The Goodman GLZS4BA4210 outdoor heat pump condenser unit, dark gray with a red Goodman logo. Specifications like Tonnage (3.5), Efficiency (14.3 SEER2), Type (Heat Pump), Dimensions, Weight, and Lineset are overlaid on the image.

Goodman AMST42CU1300



Tonnage

3.5

Dimensions

21 x 21 x 53.5

Connections

3/8" x 3/4"

Weight

153

Multi-Position, Variable Speed

ECM-Based with built-in TXV

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Image: The Goodman AMST42CU1300 indoor air handler unit, a tall, dark gray cabinet with a red Goodman logo. Specifications like Tonnage (3.5), Dimensions, Connections, and Weight are overlaid on the image, along with "Multi-Position, Variable Speed, ECM-Based with built-in TXV".

2. Pre-Installation Checks

- **Site Selection:** Ensure adequate space for airflow, maintenance, and proper drainage for both indoor and outdoor

units.

- **Electrical Requirements:** Verify that the electrical supply meets the specifications for both the condenser and air handler.
- **Ductwork:** Inspect existing ductwork for leaks or obstructions and ensure it is appropriately sized for the 3.5-ton system capacity.
- **Refrigerant Lines:** The GLZS4BA4210 condenser is pre-charged for 15 feet of tubing. Longer line sets may require additional R-32 refrigerant.

3. Air Handler Installation (AMST42CU1300)

- **Multi-Position Capability:** The AMST42CU1300 air handler is designed for flexible installation in upflow, horizontal right, or horizontal left configurations.
- **Downflow Installation:** An optional downflow kit must be purchased separately for downflow applications.
- **Coil Mounting Track:** The integrated coil mounting track allows for easy repositioning and flexible installation.
- **Condensate Drainage:** Ensure proper condensate drainage is established to prevent water damage.

4. Heat Kit (Optional)

For regions where temperatures frequently drop below freezing, it is strongly recommended to add an optional HKTS series heat kit. This provides supplementary electric heating for enhanced comfort during colder periods.



Image: An example of an optional electric heat kit, showing heating elements and wiring connections, designed to be installed within the air handler for supplementary heating.

OPERATING INSTRUCTIONS

Once installed by a qualified technician, your Goodman Heat Pump System is designed for efficient and reliable operation. Control of the system is typically managed via a compatible thermostat.

1. Thermostat Control

- **Setting Temperature:** Adjust the desired temperature using your thermostat.
- **Mode Selection:** Select the operating mode:
 - **Cool:** For cooling your home.
 - **Heat:** For heating your home (heat pump operation).
 - **Auto:** Automatically switches between heating and cooling to maintain the set temperature.
 - **Fan:** Circulates air without heating or cooling.
- **Fan Speed:** Your AMST42CU1300 air handler features a 9-speed ECM blower motor, which can be controlled by

compatible thermostats to optimize airflow and comfort.

- **App Control:** Some advanced thermostats offer app control for remote management of your system.

2. Heat Pump Operation

The heat pump system provides both heating and cooling. In cooling mode, it extracts heat from inside your home and releases it outside. In heating mode, it extracts heat from the outdoor air (even in cold temperatures) and transfers it indoors. When outdoor temperatures are very low, the optional heat kit will engage to provide supplemental heating.



Image: A stylized depiction of air currents (blue for cool, red for warm) flowing through a modern living space, illustrating the system's ability to regulate indoor temperature and provide comfort.

MAINTENANCE

Regular maintenance is essential for the efficient and reliable operation of your Goodman Heat Pump System. It is recommended to schedule professional maintenance annually.

1. User Maintenance (Monthly/Quarterly)

- **Air Filter Replacement/Cleaning:** Check and replace or clean the air filter in your air handler monthly or as needed. A dirty filter restricts airflow and reduces efficiency.
- **Outdoor Unit Clearance:** Ensure the outdoor condenser unit (GLZS4BA4210) is free from debris, leaves, and obstructions. Maintain at least 2 feet of clearance around the unit.

2. Professional Maintenance (Annually)

A qualified HVAC technician should perform the following checks annually:

- **Refrigerant Level Check:** Verify proper R-32 refrigerant charge.
- **Coil Cleaning:** Clean indoor (evaporator) and outdoor (condenser) coils.
- **Electrical Connections:** Inspect and tighten all electrical connections.
- **Blower Motor Inspection:** Check the AMST42CU1300's ECM blower motor for proper operation.
- **Drainage System:** Clear condensate drain lines to prevent blockages.
- **System Performance:** Test overall system operation, including temperature differential and pressure readings.

TROUBLESHOOTING

Before contacting a service technician, review these common issues and solutions. For complex problems, always contact a qualified HVAC professional.

Problem	Possible Cause	Solution
System not heating or cooling effectively	• Dirty air filter • Thermostat set incorrectly • Outdoor unit obstructed • Low refrigerant charge	• Replace/clean air filter. • Check thermostat settings (mode, temperature). • Clear debris from around the GLZS4BA4210 condenser. • Contact a qualified technician to check refrigerant levels.
No power to the unit	• Blown fuse or tripped circuit breaker • Emergency shut-off switch engaged	• Check and reset circuit breakers. • Ensure emergency shut-off switches (near indoor/outdoor units) are ON.
Water leaking from indoor unit	• Clogged condensate drain line • Frozen evaporator coil	• Clear the condensate drain line. • Turn off the system and allow the coil to defrost, then check airflow and filter. Contact technician if problem persists.
Unusual noises	• Loose parts • Motor issues • Refrigerant flow issues	• Contact a qualified technician for diagnosis and repair.

SPECIFICATIONS

Detailed technical specifications for the Goodman 3.5 Ton 15.2 SEER2 Heat Pump System.

System Overview

- **Brand:** Goodman
- **System Type:** Split System Heat Pump
- **Total Capacity:** 3.5 Tons
- **Seasonal Energy Efficiency Ratio 2 (SEER2):** 15.2
- **Refrigerant Type:** R-32
- **AHRI Certified:** Yes (Certificate Number: 215213860)
- **Power Source:** Corded Electric
- **Control Method:** Compatible Thermostat (App control available with compatible smart thermostats)

GLZS4BA4210 Heat Pump (Condenser)

- **Model Number:** GLZS4BA4210
- **Form Factor:** Outdoor Unit
- **Cooling Efficiency Rating (SEER2):** 14.30 - 15.20
- **Heating Efficiency Rating (HSPF2):** 7.50 - 7.80
- **Features:** Service valves, gauge ports, inspection points, pre-charged for 15' tubing.

AMST42CU1300 Air Handler

- **Model Number:** AMST42CU1300
- **Form Factor:** Indoor Unit
- **Construction:** Corrosion-resistant aluminum
- **Coil:** Grooved tubing for enhanced heat transfer, rigorously helium pressure tested.
- **Blower Motor:** Direct-drive, 9-speed ECM (Electronically Commutated Motor)
- **Expansion Valve:** Internal factory-installed Thermal Expansion Valve (TXV)
- **Installation Positions:** Upflow, Horizontal Right, Horizontal Left (Downflow requires separate kit)
- **Features:** Coil mounting track for flexible installation.

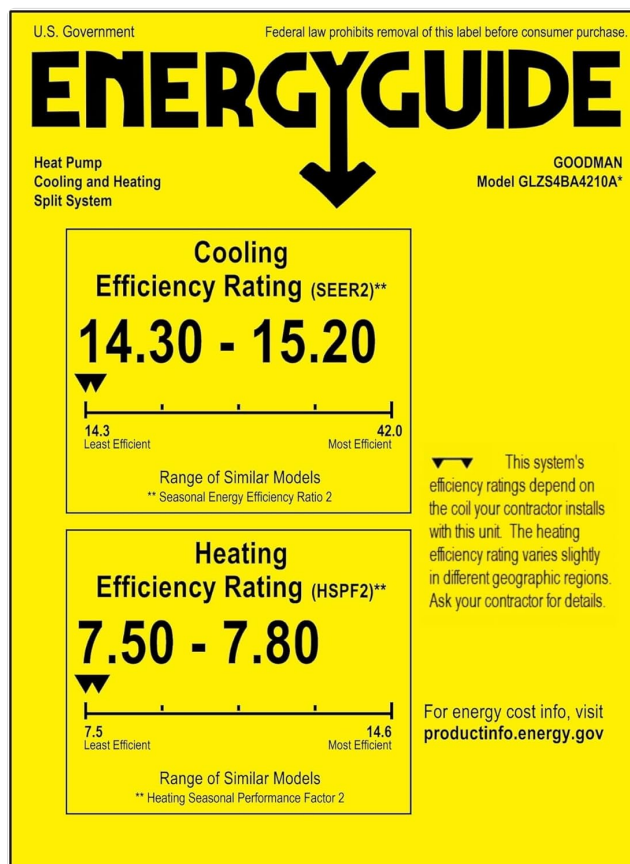


Image: The U.S. Government EnergyGuide label for the Goodman GLZS4BA4210 Heat Pump, showing Cooling Efficiency Rating (SEER2) of 14.30 - 15.20 and Heating Efficiency Rating (HSPF2) of 7.50 - 7.80. It notes that efficiency ratings depend on the coil installed.

WARRANTY INFORMATION

Your Goodman Heat Pump System comes with a limited warranty to protect your investment.

- **Warranty Type:** Limited Parts Warranty

- **Duration:** 10 Years on all parts.
- **Conditions:** The warranty is valid when the system is installed by a qualified installer and registered online within 60 days of installation. Failure to register within this period may affect warranty coverage.

Please retain your proof of purchase and installation records for warranty claims.



Image: A metallic shield icon with "10 YEAR LIMITED WARRANTY" prominently displayed, symbolizing the product's warranty coverage.

SUPPORT AND CONTACT

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

- **Goodman Official Website:** www.goodmanmfg.com
- **AHRI Certification Lookup:** You can verify the system's certification using AHRI certificate number 215213860 at www.ahridirectory.org.

Note:

Accessories such as thermostats, additional heat kits, and outdoor sensors are sold separately and may require specific compatibility checks.

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Name

Email

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question