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GarveeTech SAC18-2-S21-B

GarveeTech SAC18-2-S21-B Split Air Conditioner User Manual

Model: SAC18-2-S21-B - 18,000 BTU, 230V, 21 SEER2

Overview Installation Operation Safety Information Maintenance Troubleshooting Product Specifications Warranty & Support

1. Safety Information

Please read all safety instructions carefully before installing and operating your GarveeTech Split Air Conditioner. Failure to follow these instructions may result in property damage, personal injury, or death.

- **Professional Installation Required:** Installation of this unit requires specialized skills and tools. It must be performed by a qualified and licensed HVAC technician to ensure proper function, safety, and compliance with local codes.
- **Electrical Safety:** Ensure the power supply matches the unit's specifications (230V). Always disconnect power before performing any maintenance or service.
- **Refrigerant Handling:** This unit contains refrigerant. Only qualified personnel should handle refrigerant to prevent environmental damage and personal injury.
- **Stable Mounting:** Both indoor and outdoor units must be securely mounted on stable, flat surfaces to prevent vibration, noise, and potential falling hazards.
- **Clearance:** Maintain adequate clearance around both units for proper airflow and maintenance access.

2. Product Overview

The GarveeTech SAC18-2-S21-B is an 18,000 BTU, 230V, 21 SEER2 split air conditioner designed for efficient year-round climate control. It offers multiple operating modes and smart features for enhanced comfort.

Key Features:

- **4-in-1 Comfort:** Provides Cooling, Heating, Dry (dehumidification), and Fan-Only modes.
- **Energy Efficiency:** AI-driven vector inverter technology with a 21 SEER2 rating, reducing energy consumption by over 25%.
- **Smart Connectivity:** Built-in Wi-Fi 2.0 for app control and compatibility with Alexa and Google Assistant.
- **Quiet Operation:** Operates as low as 28 dB in Sleep mode.
- **Space-Saving Design:** Outdoor unit is 23% smaller than standard models.

- **Rapid Climate Control:** Achieves rapid cooling and heating within seconds.



Figure 2.1: GarveeTech SAC18-2-S21-B Split Air Conditioner components.

The image above shows the complete GarveeTech SAC18-2-S21-B Split Air Conditioner system, including the indoor unit, outdoor unit, remote control, and connection piping. This visual representation helps in identifying the main components of the product.

3. Installation

Important: Installation must be performed by a qualified and licensed HVAC professional.

3.1. Preparation

Necessary Tools and Materials:

- Hole saw
- Multimeter
- Pipe cutter

- Hex wrenches
- Refrigerant (R32)
- Torque wrench
- Adjustable wrench
- Tape measure
- Pressure gauge
- Safety belt
- Flaring tool
- Bracket (not included)
- Level
- Phillips screwdriver
- Electroprobe
- Vacuum pump
- Pliers
- Copper tube

Check the Installation Environment:

- Avoid locations with heat sources or steam sources.
- Ensure no obstructions around the inlet and outlet of both indoor and outdoor units.
- Do not install in areas with flammable or explosive gas, or corrosive gas.

3.2. Indoor Unit Installation

Select Installation Location:

The wall for the indoor unit must be hard, flat, and firm to avoid vibration and noise. Ensure the following clearances:

- To ceiling: > 15cm
- To obstacle (left/right): > 20cm
- To floor: 230~260cm



Figure 3.1: Indoor unit placement guidelines for optimal operation.

This diagram illustrates the necessary distances from the indoor unit to the ceiling, floor, and side obstacles to ensure proper airflow and prevent operational issues.

Fix Mounting Plate:

1. Put the plate on the wall and use a level to make it horizontal.
2. Select the position of screws on the plate, no less than 5 screws.
3. Punch holes in the wall.**Note:** When drilling holes, ensure to avoid wires, plumbing, gas, and other sensitive components. The wall hole should be inclined outward by 5-10°, with a diameter of 60-80mm. Use an anti-dust bag to avoid dust when drilling.
4. Use expansion screw kits to firmly fix the plate to the wall.**Note:** Do not use nails to fix the plate.

Installation of Connection Cable:

1. Pass the power cable out from the back of the indoor unit and fix it on the terminal board.
2. Fix the cable with a clamp.

Connection of Refrigerant Piping:

1. Use both hands to turn the pipe in the desired direction.**Note:** It is forbidden to operate with one hand, which will make the tube deform and rupture.
2. Aim at the pipe center, tighten the taper nut with fingers, then tighten the taper nut with 2 wrenches.**Note:** It's better to use a torque wrench to tighten the taper nut. The required torque is shown in the picture.

Table 3.1: Recommended Torque for Taper Nuts

The size of pipe (mm)	Torque (N.m)
φ6/φ 6.35	15-25
φ9/φ 9.52	35-40
φ12/φ 12.7	45-60
φ 15.88	73-78
φ 19.05	75-80

Install the Drain Hose:

1. Connect the drain hose with the water outlet pipe, and fix it firmly with adhesive tape. The length should be more than 5cm to prevent water leakage.
2. When placing the drain hose, pay attention to the following:
    - Drain hose should be sloped down.
    - Never put the end of the drain hose in the water.

Wrap the Piping:

Wrap refrigerant piping, wires, and drain pipe with wrapping tape.

Mount Indoor Unit:

1. Put the refrigerant piping out of the wall hole.
2. Put the indoor unit on the mounting plate.
3. Push the lower part of the indoor unit until a 'click' sound is heard to make sure the indoor unit is firmly fixed to the wall.

Pipe Protecting Ring and Putty:

To protect piping and wires, a pipe protecting ring shall be installed sealed with putty.

3.3. Outdoor Unit Installation

Select Installation Location:

Outdoor unit must be installed in a firm and flat place to prevent vibration and noise. The outdoor unit should fulfill the following requirements:

- To the obstruction (top): > 20cm
- Air in side: > 10cm
- To the obstruction (left/right): > 30cm
- Air out side: > 200cm

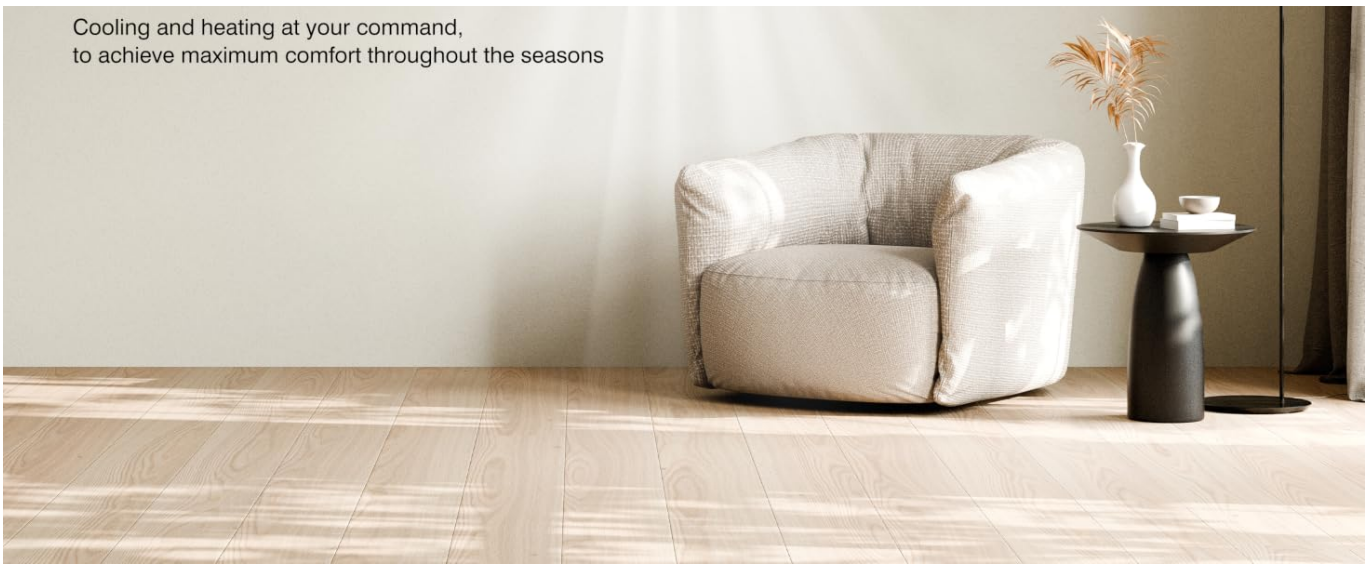

Figure 3.2: Outdoor unit placement guidelines for optimal operation.

This diagram illustrates the necessary distances from the outdoor unit to surrounding obstacles to ensure proper airflow and prevent operational issues.

Install Outdoor Unit Bracket:

If installing the air conditioner in a higher place, the operator should wear a safety belt and helmet.

1. Use a level to ensure the bracket is horizontal and vertical.
2. Use at least 6 expansion bolts to make sure brackets are fixed firmly on the wall.

Fix Outdoor Unit:

1. Put the outdoor unit onto the brackets.
2. Use 4 screws to fix the feet of the outdoor unit.

Connect Refrigerant Piping:

1. Remove the nut from the stop valves.
2. Aim at the pipe center of the stop valve, tighten the taper nut with fingers.
3. Tighten the taper nut with 2 wrenches.**Note:** It's better to use a torque wrench to tighten the taper nut, the required torque is shown in Table 3.1.

Fix Cables:

1. Remove the electrical box cover.
2. Fix cables to the terminal board according to the wiring diagram on the E-parts cover.**Note:** Must follow the wiring diagram inside the box cover.
3. Use a clamp to fix cables.

4. Put the electrical box cover back.

Vacuumize:

1. Before vacuuming, check all the nuts of the indoor and outdoor unit are tightened.
2. Connect the stop valve, charging hose, manifold valve, and vacuum pump as shown in the diagram.
3. Turn on handle Lo to vacuumize.
4. Vacuumize for 15 minutes at least, make sure the value on the pressure gauge is ≤0.1MPa.
5. Pressure keep for 3-5 minutes after vacuumizing, make sure pressure springback ≤0.05MPa.
6. Open 1/4 liquid valve, and remove charging hose.
7. Open all the liquid valves and gas valves.
8. Screw all the caps and tighten up.

Table 3.2: Refrigerant Adjustment for Connection Pipe Length

Length of connection pipe	Added or reduced refrigerant	Amount of refrigerant for the unit
<3m	CC≤12000Btu reduce 20g/m	≤1Kg
	CC≥18000Btu reduce 50g/m	≤2Kg
3-5m	Not needed	
5-15m	CC≤12000Btu add 20g/m	≤1Kg
	CC≥18000Btu add 30g/m	≤2Kg

Attention: When the length of the connecting pipe is changed, an extra amount of refrigerant needs to be added or reduced, so that the operation and performance of the air conditioner will not be compromised.

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Video 3.1: Detailed installation guide for the Split Air Conditioner. This video demonstrates the step-by-step process for installing both the indoor and outdoor units, including piping, electrical connections, and vacuumizing.

4. Operating Instructions

Your GarveeTech Split Air Conditioner offers various modes and features for optimal comfort. Control can be achieved via the included remote control, the dedicated mobile app, or voice commands.

4.1. Operating Modes:

- **Cooling Mode:** Provides rapid cooling, ideal for hot environments.
- **Heating Mode:** Delivers turbo-heating for colder conditions.
- **Dry Mode (Dehumidifier):** Reduces humidity in the air.
- **Fan-Only Mode:** Circulates air without heating or cooling.

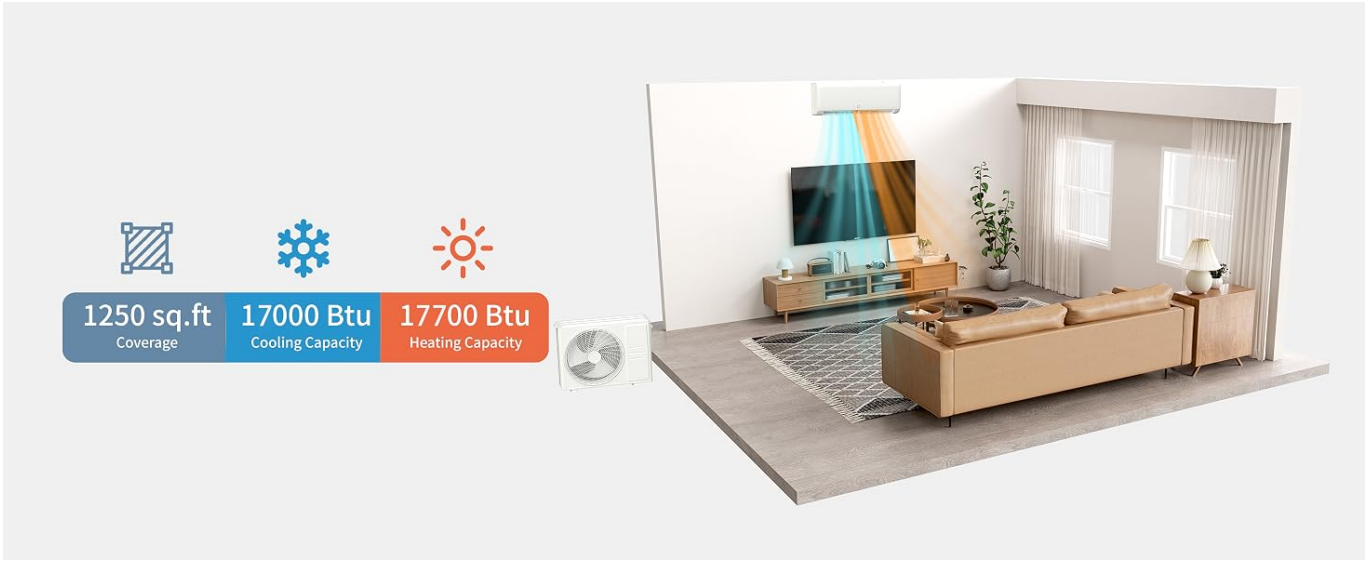

Figure 4.1: The 4-in-1 comfort modes: Heating, Cooling, Fan, and Dehumidifier.

This image visually represents the four primary operating modes of the air conditioner, highlighting its versatility for different climate needs.

4.2. Smart Connectivity:

The unit features built-in Wi-Fi 2.0, allowing control via a dedicated mobile application and voice commands through Alexa and Google Assistant.

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Video 4.1: GarveeTech Split AC Wi-Fi Connection Guide. This video provides instructions on how to connect your air conditioner to your home Wi-Fi network and control it using the mobile application.

This video demonstrates the process of connecting your GarveeTech Split AC to Wi-Fi and using the mobile app for control, including adding devices and assigning rooms.

4.3. Additional Features:

- **4-Way Swing:** Ensures uniform air distribution throughout the room.
- **Turbo Mode:** For rapid cooling or heating.
- **Sleep Mode:** Adjusts temperature and fan speed for quiet, comfortable sleep.
- **Timer:** Program schedules for automatic power on/off.
- **Air Purification Filter:** Helps maintain air quality.

5. Maintenance

Regular maintenance ensures the longevity and efficient operation of your air conditioner.

5.1. Filter Cleaning:

The unit features a filter-cleaning reminder. Regularly clean the air filters to maintain optimal airflow and air quality.

5.2. Self-Cleaning Function:

Utilize the 56°C High Temperature Self-cleaning function to ensure fresh and clean air by preventing mold and bacteria buildup.

6. Troubleshooting

If you encounter issues with your air conditioner, refer to the following common troubleshooting steps. For complex problems, contact customer service.

6.1. Electrical Safety Check:

Use a multimeter to test for possible leaking positions on the outdoor unit shell during trial operation. If there is electricity leakage, turn off power immediately to do further examination.

6.2. Water Drain and Leakage Test:

Pour in 500ml water along the evaporator (about 20 seconds) to check if water drain can normally flow out and if any water leakage is around the indoor unit.

7. Specifications

Feature	Detail
Model Number	SAC18-2-S21-B
Cooling Power	18,000 British Thermal Units
Capacity	1.5 Tons
Seasonal Energy Efficiency Ratio (SEER)	21
Voltage	230 Volts
Floor Area Coverage	1250 Square Feet
Noise Level	49 Decibels (Turbo mode), 28 Decibels (Sleep mode)
Product Dimensions	12.2"D x 37.8"W x 8.74"H
Item Weight	87.1 pounds
Special Features	Inverter Compressor, Heating & Cooling Function, Dehumidifier, 4 Way Swing, Turbo Mode, Sleep Mode, Air Purification Filter, Filter Light Reminder, Remote Controlled
Included Components	Outdoor unit, indoor unit and mounting accessories

8. Warranty and Support

Your GarveeTech SAC18-2-S21-B Split Air Conditioner is backed by a **5-year manufacturer's warranty**. This warranty covers:

- Shipping damage
- Normal-use part failures
- Any functional defects

For installation guidance, troubleshooting assistance, or replacement parts, please contact our customer service team directly to avoid unnecessary third-party fees. We are committed to providing support anytime.

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