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Broan-NuTone AE80S

Broan-NuTone AE80S Invent ENERGY STAR Certified Fan Instruction Manual

Model: AE80S | **Brand:** Broan-NuTone

This manual provides detailed instructions for the installation, operation, and maintenance of your Broan-NuTone AE80S Invent ENERGY STAR Certified Fan.

Key Product Features

- **High-Quality Fan:** Operates at 80 CFM and 0.8 Sones, suitable for rooms up to 75 sq. ft.
- **Efficient Humidity Sensing:** Automatically activates when humidity levels rise, ensuring clear mirrors and comfortable surroundings.
- **Easy Installation:** Designed for both new construction and room-side retrofit installations, eliminating the need for attic access.
- **TrueSeal Damper Technology:** Reduces air leakage by up to 50% compared to competitive models, improving home performance and reducing backdrafts.
- **Versatile Use:** UL Listed for safe use over bathtubs and showers when connected to a GFCI circuit.

1. Safety Information

Always prioritize safety during installation and maintenance. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **WARNING:** To reduce the risk of fire, electric shock, or injury to persons, observe the following:
- Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
- Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back-drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
- When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

- Ducted fans must always be vented to the outdoors.

2. Installation Guide

The Broan-NuTone AE80S fan is designed for flexible installation in both new construction and retrofit scenarios.



Figure 2.1: The Broan-NuTone AE80S Invent Fan, showcasing its compact design and integrated duct connector.



Figure 2.2: An internal view of the fan housing, showing the blower unit and wiring panel removed for initial setup.

2.1. New Construction Installation

1. **Prepare the Unit:** Remove the blower and wiring panel from the fan housing.
2. **Attach Damper and Duct Connector:** Push the damper and duct connector through the opening from the inside of the housing. Engage the tabs and secure with the provided screw.
3. **Mount Housing:** Mount the housing to the ceiling structure, ensuring the bottom of the housing will be flush with the finished ceiling. For proper location, use 1/2-inch ceiling material. Bend out the housing tabs to fit against the bottom of the structure. Secure the housing through the mounting ears on each side with appropriate fasteners. If mounting to an I-joist, use wood blocking.
4. **Connect Ducting:** Connect a 4-inch round duct to the duct connector using duct tape.
5. **Wiring:** Bend the wiring access tab to expose the desired access hole. Run the existing power cable into the housing. Connect black to black, white to white, and green to green or bare wire using appropriate UL-approved connectors.
6. **Reinstall Components:** Reinstall the wiring panel and secure it with the provided screw. Slide the blower into the clips on either side of the housing and secure it with the provided screws. Plug the blower into the black receptacle.
7. **Install Grille:** The grille will be installed after the ceiling has been finished.

2.2. Retrofit Installation

1. **Assess Opening:** First, determine if you must expand the existing ceiling hole. If necessary, enlarge the ceiling opening to 9 3/4 inches parallel to the joist by 10 1/2 inches perpendicular to the joist. Be sure not to cut through any existing ducting or wiring.
2. **Remove Old Fan:** Carefully remove the old fan, ductwork, and wiring.
3. **Prepare Housing:** Fold the mounting ears flat against the housing. Bend the wiring access tab to expose the desired access hole.

4. **Insert Housing:** Insert the new fan housing into the prepared hole and secure it.
5. **Connect Wiring:** Pull the existing wire through the hole in the housing. Connect the power cable to the housing with appropriate UL-approved connectors (black to black, white to white, green to green or bare wire).
6. **Reinstall Wiring Panel:** Install the wiring panel and secure it with the provided screw.
7. **Connect Ducting:** Pull the existing duct through the hole in the housing. Connect the duct to the connector with duct tape. Fit the duct connector into the housing.
8. **Install Blower:** Install the blower into the housing and secure it with the two provided screws. Plug the blower into the black receptacle.
9. **Install Grille:** Squeeze the grille springs and insert them into the slots in the housing. Push the grille up against the ceiling to complete the installation.



Figure 2.3: The fan housing with ducting connected, ready for final installation.



Figure 2.4: Detailed view of the humidity sensor controls, allowing for precise adjustment of fan operation.

2.3. Official Installation Videos

Broan-NuTone AE80S InVent Fan Installation Overview

This video provides a comprehensive overview of the installation process for the Broan-NuTone InVent series fan, including both new construction and retrofit methods.

Broan Flex Ventilation Fan Installation

This video demonstrates the installation of a Broan Flex series ventilation fan, highlighting key steps and features for a successful setup.

3. Operating Instructions

Your Broan-NuTone AE80S fan features advanced humidity sensing technology for optimal performance.

- **Automatic Operation:** The fan is equipped with a humidity sensor that automatically turns the fan on when it detects elevated humidity levels in the room. It will continue to operate until humidity levels return to normal, then automatically shut off.
- **Air Flow:** The fan provides 80 CFM (Cubic Feet Per Minute) of airflow, effectively ventilating rooms up to 75 sq. ft.
- **Quiet Performance:** Operating at 0.8 Sones, the fan provides quiet ventilation, minimizing disruption.

4. Maintenance

Regular maintenance ensures the longevity and efficient operation of your fan.

- **Cleaning the Grille:** Periodically remove the grille and wash it by hand with mild soap and water. Ensure it is completely dry before reattaching.
- **Cleaning Fan Blades:** With the power off at the service panel, carefully wipe down the fan blades and interior of the housing to remove dust and debris.
- **Humidity Sensor:** Keep the humidity sensor area clean and free from obstructions to ensure accurate readings and proper automatic operation.
- **Ductwork Inspection:** Annually inspect ductwork for any blockages or leaks that could impede airflow.

5. Troubleshooting

If you encounter issues with your fan, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Fan is too loud	Obstructions in fan or ductwork; improper installation; loose components.	Check for debris in the fan or duct. Ensure all components are securely fastened. Verify proper duct sizing and installation.

Problem	Possible Cause	Solution
Humidity sensor ineffective	Sensor is dirty or obstructed; incorrect sensitivity setting; sensor malfunction.	Clean the sensor area. If adjustable, try recalibrating the sensitivity. If issues persist, contact support.
Fan not turning on/off	No power; tripped circuit breaker; faulty wiring; humidity sensor issue.	Check power supply and circuit breaker. Verify all wiring connections are secure. Refer to humidity sensor troubleshooting.
Reduced airflow	Clogged grille or fan blades; restricted ductwork; damper stuck.	Clean the grille and fan blades. Inspect ductwork for kinks or blockages. Check that the damper opens freely.

6. Specifications

Attribute	Detail
Brand	Broan-NuTone
Model Name	Broan-NuTone AE80S Invent Energy Star Certified Fan, 80 CFM 0.8 Sones, White
Air Flow Capacity	80 CFM
Sones	0.8 Sones
Power Source	AC
Wattage	24.5 watts
Voltage	120V
Product Dimensions	10"D x 5.75"W x 9.25"H
Room Type	Bathroom
Special Feature	Humidity Sensor Switch
Certification	ENERGY STAR Certified, UL Listed
Blade Material	Plastic
Item Weight	9 Pounds
Connector Type	EzDuct®

7. Warranty and Support

For warranty information, please refer to the documentation included with your product or visit the official Broan-

NuTone website.
For additional support, product registration, or to explore other Broan-NuTone products, please visit the Broan-NuTone Store.

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