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Model: 502610A

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of the Caleffi 502610A 1/8-Inch Automatic Air Vent. Please read these instructions carefully before installation and retain them for future reference. This device is designed to automatically discharge air from heating and cooling systems, improving system efficiency and preventing issues caused by trapped air.

2. SAFETY INFORMATION

Important Safety Instructions:

- Installation should be performed by a qualified professional in accordance with local codes and regulations.
- Ensure the system is depressurized and cooled before attempting installation or maintenance.
- Wear appropriate personal protective equipment (PPE), such as safety glasses and gloves.
- Do not tamper with the device or attempt unauthorized repairs.
- The maximum working pressure and temperature limits must not be exceeded.

3. PRODUCT OVERVIEW

The Caleffi 502610A is a compact automatic air vent designed for efficient air removal from hydronic systems. It features a brass body and a 1/8-inch NPT male connection for easy integration.



Figure 1: Caleffi 502610A Automatic Air Vent. This image shows the brass body of the vent with a threaded male NPT connection at the bottom and a black manual vent cap at the top.

Key Features:

- Brass body construction for durability.
- 1/8-Inch NPT male connection for standard plumbing.
- Automatic air discharge mechanism.
- Manual vent cap for initial air purging or troubleshooting.

4. SPECIFICATIONS

Model Number	502610A
Connection Size	1/8-Inch NPT Male
Material	Brass
Maximum Working Pressure	150 psi
Maximum Discharge Pressure	90 psi
Maximum Working Temperature	240°F (115°C)
Dimensions (L x W x H)	Approximately 0.5 x 0.5 x 2.5 inches
Item Weight	Approximately 5.6 ounces (159 grams)

5. INSTALLATION

Proper installation is crucial for the effective operation of the automatic air vent. It is recommended that installation be performed by a qualified HVAC or plumbing professional.

Installation Steps:

1. **System Preparation:** Ensure the heating or cooling system is completely shut down, depressurized, and cooled to a safe temperature.
2. **Location Selection:** Install the air vent at the highest point of the system or at points where air is most likely to collect (e.g., top of risers, heat exchangers, or large horizontal runs). The vent must be installed vertically with the air discharge opening facing upwards.
3. **Thread Sealing:** Apply an appropriate thread sealant (e.g., PTFE tape or pipe dope suitable for hydronic systems) to the 1/8-inch NPT male threads of the air vent.
4. **Mounting:** Carefully thread the air vent into the designated female NPT port. Tighten securely, but do not overtighten, as this can damage the threads or the vent body.
5. **Initial Purging:** After installation, slowly refill the system. As the system fills, manually open the black vent cap (if present and designed for manual operation) to allow a large volume of air to escape quickly. Close the cap once water begins to discharge.
6. **System Startup:** Once the system is filled and initially purged, restore system pressure and temperature. The automatic air vent will then begin its normal operation.

Note: Some installations may benefit from a shut-off valve installed beneath the air vent to allow for servicing without draining the entire system.

6. OPERATION

The Caleffi 502610A Automatic Air Vent operates passively to remove trapped air from your hydronic

system. Its internal float mechanism responds to the presence of air or water:

- When air accumulates inside the vent, the float drops, opening a small valve that allows the air to escape.
- As air is discharged, water enters the vent, causing the float to rise and close the valve, preventing water from escaping.

This cycle repeats automatically as air collects in the system, ensuring continuous air removal without manual intervention. The small black cap on top of the vent should generally be left slightly open (unscrewed a turn or two) to allow air to escape. If it is fully tightened, the vent will not function automatically. It can be fully opened for manual purging during system filling or maintenance.

7. MAINTENANCE

The Caleffi 502610A is designed for minimal maintenance. However, periodic checks can help ensure its continued optimal performance:

- **Visual Inspection:** Periodically inspect the vent for any signs of leakage or corrosion.
- **Functionality Check:** If you suspect air is still trapped in the system, gently unscrew the black cap a few turns. You should hear a hiss of air escaping, followed by a small amount of water. If no air or water escapes, or if water continuously leaks, the vent may require attention.
- **Cleaning:** In systems with poor water quality, mineral deposits or debris can sometimes interfere with the float mechanism. If the vent is not operating correctly, it may need to be removed and cleaned. Ensure the system is depressurized and drained before removal.
- **Replacement:** Automatic air vents have a finite lifespan. If the vent consistently leaks or fails to remove air, it should be replaced.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Air not being discharged	Black cap is fully tightened. Vent is clogged with debris. Vent is installed incorrectly (not vertical). Vent has reached end of life.	Loosen black cap a few turns. Clean or replace the vent. Reinstall vent correctly. Replace the vent.
Water continuously leaks from vent	Debris preventing valve from closing. Damaged internal components. Excessive system pressure.	Clean or replace the vent. Replace the vent. Check system pressure and adjust if necessary.
Vent body leaking	Loose connection. Damaged threads or body.	Tighten connection (do not overtighten). Replace the vent.

9. WARRANTY AND SUPPORT

For specific warranty information and technical support, please refer to the documentation provided with your purchase or contact Caleffi directly through their official website or customer service channels. Keep your proof of purchase for warranty claims.

Caleffi Contact Information:

- Visit the official Caleffi website for support resources and contact details.
- Consult your local distributor for product inquiries and service.