

Flamco 14670

Flamco Airfix A 35 Liter Drinking Water Expansion Vessel User Manual

Model: 14670

1. INTRODUCTION

1.1 Product Overview

The Flamco Airfix A 35 Liter Drinking Water Expansion Vessel (Model 14670) is a crucial component designed for use in drinking water heating systems. Its primary function is to absorb volume changes in the system caused by temperature fluctuations, thereby maintaining stable pressure and protecting system components. This vessel is constructed and tested according to DIN 4807 T5 standards, ensuring reliability and safety.

Key features include external and internal plastic coating for durability and hygiene, a flow distributor for efficient connection, and an external thread for secure wall mounting. It holds the DIN-DVGW approval mark: NW-0411AU2095 and is approved according to the EU Pressure Equipment Directive 97/23/EG.



Figure 1: Front view of the Flamco Airfix A 35 Liter Drinking Water Expansion Vessel.

1.2 Safety Information

WARNING: Improper installation, operation, or maintenance can lead to serious injury or property damage. Read this manual thoroughly before installation and operation.

- Ensure all local codes and regulations are followed during installation.
- Installation should only be performed by qualified personnel.
- Always depressurize the system before performing any maintenance or service.
- Do not exceed the maximum operating pressure or temperature specified for the vessel.
- Protect the vessel from freezing temperatures.

2. SETUP AND INSTALLATION

2.1 Unpacking

Carefully remove the expansion vessel from its packaging. Inspect the vessel for any signs of damage during transit. Do not install a damaged vessel. Retain packaging materials for potential future transport or return.

2.2 Mounting

The Flamco Airfix A vessel is designed for wall mounting.

1. Select a suitable location near the drinking water heating system, ensuring adequate space for installation and future maintenance.
2. Ensure the wall structure can safely support the weight of the vessel when full (approximately 9 kg empty + 35 kg water = 44 kg).
3. Use appropriate wall anchors and screws (not supplied) to securely fasten the mounting bracket (if separate) or directly mount the vessel using its integrated hanging points.
4. Mount the vessel in an upright position with the system connection facing downwards.

2.3 System Connection

Connect the expansion vessel to the drinking water heating system using the external threaded connection.

- Ensure all connections are clean and free of debris.
- Use appropriate sealing materials (e.g., PTFE tape or hemp with sealing paste) on the threads to ensure a watertight connection.
- Tighten connections firmly but do not overtighten to avoid damaging the threads or the vessel.
- The vessel should be installed with a flow distributor (T-piece) to ensure proper water circulation through the vessel.



Figure 2: Internal view showing the membrane and connection point of the expansion vessel.

2.4 Pre-charge Pressure Check

The vessel comes pre-charged from the factory. However, it is essential to verify and adjust the pre-charge pressure to match the system's static pressure at the point of installation.

1. Before connecting the vessel to the system, check the pre-charge pressure using a suitable pressure gauge at the air valve (usually located at the top or side of the vessel).
2. Adjust the pre-charge pressure to be slightly below (e.g., 0.2 bar) the static pressure of the drinking water system at the vessel's connection point.
3. Use a bicycle pump or air compressor to add air, or depress the valve stem to release air, until the correct pressure is achieved.
4. Once the pre-charge pressure is set, connect the vessel to the system and fill the system with water.

3. OPERATION PRINCIPLES

3.1 Functionality

The Flamco Airfix A expansion vessel operates on the principle of a flexible membrane separating a water chamber from a pre-charged air chamber. As the water in the drinking water heating system heats up, it expands. This expanded water enters the vessel, compressing the air in the air chamber and causing the membrane to flex. This absorption of expanded water prevents excessive pressure buildup in the system. When the water cools down and contracts, the pre-charged air pushes the water back into the system, maintaining stable pressure.

3.2 Normal Operating Conditions

Under normal operating conditions, the vessel will silently absorb and release water as the system temperature fluctuates. There should be no noticeable noise or vibration from the vessel itself. The system pressure gauge should remain within the acceptable operating range for your drinking water heating system.

- **Maximum Operating Temperature (Membrane):** 70 °C
- **Maximum Operating Pressure:** Refer to system specifications and local regulations.

4. MAINTENANCE GUIDELINES

Regular maintenance is essential to ensure the longevity and proper functioning of your Flamco Airfix A expansion vessel and the overall drinking water heating system.

4.1 Regular Inspections

- **Visual Check (Annually):** Inspect the vessel for any signs of external corrosion, leaks, or physical damage.
- **Connection Check (Annually):** Verify that all connections are secure and free from leaks.

4.2 Pre-charge Pressure Verification

The pre-charge pressure of the expansion vessel should be checked and adjusted annually, or more frequently if system pressure fluctuations are observed.

1. **IMPORTANT:** Before checking the pre-charge pressure, the system must be depressurized and the vessel isolated from the water supply.
2. Close the isolation valve to the expansion vessel.
3. Drain the water from the vessel by opening a nearby tap or drain valve until no more water flows out.
4. Attach a pressure gauge to the air valve on the vessel.
5. Read the pressure. If it is below the required static pressure of the system, add air using a pump until the correct pressure is reached. If it is too high, release air.
6. Once the pressure is correct, close the drain valve, open the isolation valve to the vessel, and repressurize the system.

5. TROUBLESHOOTING GUIDE

This section provides solutions to common issues that may arise with your expansion vessel. For problems not listed here, or if solutions do not resolve the issue, contact a qualified technician.

Problem	Possible Cause	Solution
System pressure fluctuates excessively.	Incorrect pre-charge pressure, damaged membrane, or undersized vessel.	Check and adjust pre-charge pressure (Section 4.2). If the issue persists, the membrane may be damaged, requiring vessel replacement. Consult a professional to verify vessel sizing.
Water leaks from the air valve.	Damaged internal membrane.	This indicates a failure of the internal membrane. The expansion vessel needs to be replaced.
Low system pressure despite adequate water supply.	Loss of pre-charge pressure in the vessel.	Check and adjust pre-charge pressure (Section 4.2).
Vessel feels heavy and full of water when tapped.	Loss of pre-charge pressure, allowing water to fill the air chamber.	Check and adjust pre-charge pressure (Section 4.2). If water cannot be drained from the air valve, the membrane is likely damaged, and the vessel requires replacement.

6. TECHNICAL SPECIFICATIONS

Brand	Flamco
Model	Airfix A
Model Number	14670
Capacity	35 Liters
Dimensions (L x W x H)	1 x 1 x 39.4 cm (Note: These dimensions seem unusually small for a 35L vessel, likely packaging or partial dimensions. Refer to manufacturer's full technical sheet for precise product dimensions.)
Weight (Empty)	9 kg
Maximum Membrane Temperature	70 °C
Approvals	DIN 4807 T5, DIN-DVGW: NW-0411AU2095, EU Pressure Equipment Directive 97/23/EG
Connection Type	External thread
Mounting	Wall mounting

7. WARRANTY AND CUSTOMER SUPPORT

7.1 Warranty Information

Specific warranty details for the Flamco Airfix A 35 Liter Expansion Vessel are not provided in this document. Please refer to the official Flamco website or contact your point of purchase for comprehensive warranty terms and conditions. Keep your proof of purchase for warranty claims.

7.2 Contact Information

For technical assistance, spare parts, or further inquiries, please contact Flamco customer support or your local distributor. Contact details can typically be found on the official Flamco website (www.flamco.com).