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Zilmet ZEP-1

Zilmet ZEP-1 Stainless Steel Thermal Expansion Tank User Manual

Brand: Zilmet

Model: ZEP-1

1. Product Overview

The Zilmet ZEP-1 is a compact stainless steel thermal expansion tank designed for use with tankless and Point-of-Use (POU) water heaters with a total water volume of 2 gallons or less. Its primary function is to protect the water heater's heat exchanger and the entire piping system from damage caused by thermal expansion. By absorbing increases in pressure within the system, the ZEP-1 helps prevent costly leaks and repairs, especially when a backflow preventer is installed.
This unit features durable 304 stainless steel construction, a 1/2" NPTM connection, and is NSF 61 certified for potable water applications. It is also UV resistant and approved for outdoor installation.

2. Key Features

- **Application:** Specifically designed for plumbing systems, particularly with tankless and POU water heaters.
- **Material:** Constructed entirely from 304 stainless steel for durability and corrosion resistance.
- **Connection:** Features a 1/2" NPTM threaded connection for easy integration.
- **Pressure Rating:** Maximum operating pressure of 150 PSI.
- **Pre-charge:** Factory pre-charged to 50 PSI, with an adjustable and serviceable air charge.
- **Diaphragm:** Equipped with a Butyl membrane diaphragm.
- **Certifications:** NSF 61 certified, ensuring safety for potable water.
- **Installation Versatility:** UV resistant and approved for outdoor installation.
- **Compact Design:** Ideal for installations in tight spaces.

3. Installation Guide

The Zilmet ZEP-1 thermal expansion tank is designed for straightforward installation. It is recommended that installation be performed by a qualified professional to ensure compliance with local plumbing codes and optimal system performance.

3.1. Placement

Install the ZEP-1 on the cold water supply line. It can be placed either below the isolation kit of the water heater or anywhere on the cold water supply line between the water heater and the check valve (backflow preventer).

3.2. Connection

Connect the 1/2" NPTM threaded connection of the ZEP-1 to the cold water supply line. Ensure all connections are properly sealed to prevent leaks.

3.3. Pre-charge Verification

The tank comes with a factory pre-charge of 50 PSI. Before installation, verify that the tank's air charge matches the incoming cold water supply pressure. If necessary, adjust the air charge using a standard tire pressure gauge and air pump at the Schrader valve located on the top of the tank.



Figure 1: Zilmet ZEP-1 Thermal Expansion Tank. This image shows the compact stainless steel body and the threaded connection point.

4. Operation

Once installed and properly charged, the Zilmet ZEP-1 operates passively. As water in the heater expands due to heating, the excess volume is absorbed by the tank's diaphragm, preventing pressure buildup in the system. When hot water is drawn, the pressure normalizes, and the tank returns to its resting state.
No user interaction is required during normal operation.

5. Maintenance

Regular maintenance helps ensure the longevity and proper function of your ZEP-1 thermal expansion tank.

5.1. Annual Air Charge Check

It is recommended to check the tank's air pre-charge annually. To do this:

1. Turn off the water supply to the water heater.
2. Drain a small amount of water from a hot water faucet to relieve system pressure.
3. Use a tire pressure gauge to check the pressure at the Schrader valve on top of the expansion tank.
4. The pressure should match the incoming cold water supply pressure. Adjust with an air pump if necessary.
5. Restore water supply to the water heater.

5.2. Visual Inspection

Periodically inspect the tank and its connections for any signs of corrosion, leaks, or physical damage. Address any issues promptly.

6. Troubleshooting

- **High Water Pressure:** If you experience consistently high water pressure, especially when the water heater is active, the expansion tank's air charge may be too low or the diaphragm may be compromised. Check and adjust the air charge as described in the Maintenance section. If the issue persists, the tank may need replacement.
- **Leaks Around the Tank:** First, confirm the leak source. Water dripping onto the tank from upstream piping can be mistaken for a tank leak. If the leak originates from the tank itself (e.g., from the Schrader valve or tank body), it may indicate a faulty diaphragm or tank integrity issue. Contact support for further assistance.
- **No Hot Water or Inconsistent Temperature:** While not directly caused by the expansion tank, issues with the water heater's performance can sometimes be exacerbated by improper system pressure. Ensure the expansion tank is functioning correctly as part of overall system diagnostics.

7. Specifications

Feature	Specification
Application	Plumbing (Tankless & POU Water Heaters)
Material	304 Stainless Steel
Connection Size	1/2"
Connection Type	NPTM Threaded
Maximum Pressure	150 PSI
Factory Pre-charge	50 PSI (Adjustable)
Maximum Operating Temperature	140°F (60°C)
Dimensions (Diameter x Height)	3.5" W x 4.6" H
Diaphragm Material	Butyl Membrane
Certifications	NSF 61
Outdoor Installation	Approved (UV Resistant)



Figure 2: NSF/ANSI 61 Certification Logo. This indicates the product is certified for potable water applications.

8. Warranty and Support

For specific warranty information regarding your Zilmet ZEP-1 thermal expansion tank, please refer to the documentation provided at the time of purchase or visit the official Zilmet website. For technical support, installation inquiries, or troubleshooting assistance, please contact Zilmet customer service directly.

Zilmet Official Website: www.zilmet.com (This is a placeholder link as no specific link was provided in the JSON. Users should verify the correct official website.)

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