



# Zilmet USA

## Thermal Expansion Tank Guide

### What is Thermal Expansion?

- When heated, water expands
- Under normal circumstances, a 40 gal hot water heater creates roughly an additional half gallon of water when heated (with no demand)
- In the past this expanded water would flow back into the public water supply
- However, in many countries, where applicable by code, a backflow preventer is required, creating a closed system and a new problem as this extra half gallon of water must go somewhere since water is **not compressible**

### Potential Problems

- Failure to use a thermal expansion tank may void the warranty of the water heater as it can lead to premature failure of the water heater:
  - “This warranty shall apply only when the water heater is installed and operated in accordance with...is used in an open system or in a closed system with a properly sized and installed thermal expansion tank...”
- Other possible problems include: dangerous high pressure, leaky fittings and valves, collapsed center flues and/or flames coming out of combustion chamber and the safety relief valve can release water

A properly sized and installed thermal expansion tank can safely resolve these issues

QUICK SIZING CHART for Applications up to 150° F			
Water Heater Size	Supply Pressure		
Gallons	40 psig	60 psig	80 psig
40	ZEP5	ZEP5	ZEP5
50	ZEP5	ZEP5	ZEP5
60	ZEP12	ZEP12	ZEP12
80	ZEP12	ZEP12	ZEP12
120	ZEP12	ZEP12	ZEP104IL
Applications up to 180° F			
40	ZEP12	ZEP12	ZEP12
50	ZEP12	ZEP12	ZEP12
60	ZEP12	ZEP12	ZEP104IL
80	ZEP12	ZEP104IL	ZEP104IL
120	ZEP104IL	ZEP104IL	ZEP104IL



## How to install Thermal Expansion Tanks

- Proper thermal expansion tank sizing depends upon the volume of water being heated, the temperature and the incoming water pressure – please refer to the Quick Sizing Chart on the opposite side to properly size your thermal expansion tank
- When in doubt always go to the next larger size as you can never oversize an expansion tank, but can easily undersize the tank
- Adjust pre-charge to be equivalent to the incoming system water pressure (adjust the pre-charge while the tank is empty)

### Installation Location

- Expansion tanks and water heaters may leak over time
  - Install on the cold water side after the pressure reducing valve and between the backflow preventer and the water heater
  - Do not install in an area where leakage could cause property damage
  - The tank can be installed either vertically or horizontally. However, if the tank is to be installed horizontally, then it must be fully supported independent from the piping. Failure to do so will void the warranty.

### Maintenance

- Visual Inspection every 6 months
  - \*PLEASE SEE THE ENCLOSED INSTALLATION MANUEL FOR COMPLETE DETAILS

