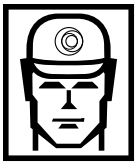


The Expert's Choice™

Expansion Tanks For Potable Water and Space Heating Systems





WATERGUARD™

WATER HEATER EXPANSION TANKS

Thermal expansion occurs when water is heated during non-use periods. The installation of a Pressure Reducing Valve (PRV), Check Valve or Back Flow Preventer “closes” the water system, leaving water with no room for expansion. Many local codes now require a closed system, to prevent backflow into the water main.

Thermal expansion in a closed plumbing system can be damaging, dangerous and costly. Its effects include damage to water heater connections, gas water heater flue tubes, pumps serving washers and dishwashers, leaking faucets, “weeping” of water through the water heater T&P Safety Valve, and noisy water hammer in the pipes.



A WaterGuard Expansion Tank eliminates these problems, by giving water a place to go when thermal expansion occurs. When a water heating cycle ends, or when any fixture is opened within the system, the impact of thermal expansion is reduced, and water drains out of the expansion tank back into the system.

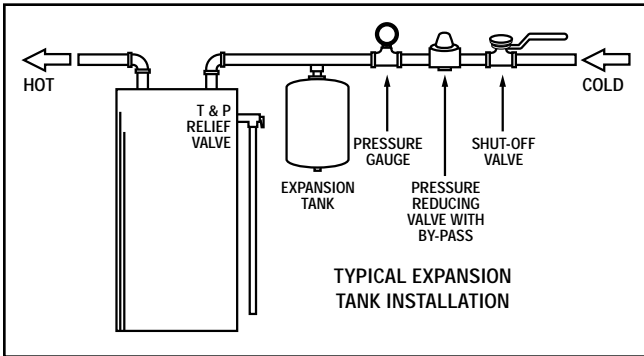
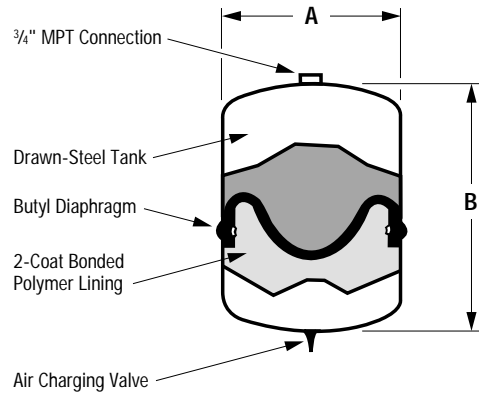


- For use with residential and commercial water heaters
- In-line design, with 3/4" MPT Connection: installs in cold water line of water heater
- Field-adjustable 40 PSI Air Charge
- Drawn-steel tank with 2-coat bonded polymer inner lining
- Butyl diaphragm, for permanent separation of air and water, with no waterlogging
- 2-Gallon (ETC-2X), 5-Gallon (ETC-5X) and 10-Gallon (ETC-10X)
- Maximum Working Pressure 150 PSI
- Maximum Temperature: 200°F
- IAPMO Approved
- 5-Year Limited Warranty



NSF International
Listed Standard 61

D022652



Expansion tanks are pre-charged with a 40 PSI air charge. If the inlet water pressure is higher than 40 PSI, the expansion tank's air pressure must be adjusted to match that pressure but must not be higher than 80 PSI.

WaterGuard Water Heater Expansion Tanks

Model Number	Gallon Capacity	Maximum Acceptable Volume (Gallons)		Dimensions in Inches		Shipping Weight (Lbs.)
		40 PSI	60 PSI	A	B	
ETC-2X	1.96	1.27	1.03	8 ⁷ / ₈	12 ¹ / ₂	5
ETC-5X	4.55	3.05	2.19	11 ³ / ₈	14 ³ / ₄	8
ETC-10X	9.21	6.55	5.25	15 ³ / ₈	15 ³ / ₄	20

All models: 150 PSIG Maximum Working Pressure

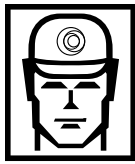
WaterGuard Sizing Chart For Residential Water Heaters

Inlet Water Pressure*	Water Heater Capacity in Gallons					
	30	40	50	66	82	100
40 PSI	ETC-2X	ETC-2X	ETC-2X	ETC-5X	ETC-5X	ETC-5X
50 PSI	ETC-2X	ETC-2X	ETC-2X	ETC-5X	ETC-5X	ETC-5X
60 PSI	ETC-2X	ETC-2X	ETC-5X	ETC-5X	ETC-5X	ETC-5X
70 PSI	ETC-2X	ETC-2X	ETC-5X	ETC-5X	ETC-5X	ETC-5X
80 PSI	ETC-2X	ETC-5X	ETC-5X	ETC-5X	ETC-5X	ETC-5X

*Highest recorded inlet water pressure in a 24-hour period of regulated water pressure.

WaterGuard Sizing Chart For Commercial Water Heaters

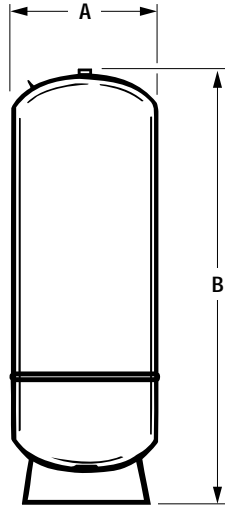
Water Temperature	Water Heater Capacity in Gallons						
	30	40	50	66	82	100	120
140°	ETC-2X	ETC-2X	ETC-5X	ETC-5X	ETC-5X	ETC-10X	ETC-10X
150°	ETC-2X	ETC-2X	ETC-5X	ETC-5X	ETC-5X	ETC-10X	ETC-10X
160°	ETC-5X	ETC-5X	ETC-5X	ETC-5X	ETC-5X	ETC-10X	ETC-10X
170°	ETC-5X	ETC-5X	ETC-10X	ETC-10X	ETC-10X	ETC-10X	ETC-10X
180°	ETC-5X	ETC-5X	ETC-10X	ETC-10X	ETC-10X	ETC-10X	ETC-10X



THERM-O-FLEX™

WATER HEATER EXPANSION TANKS

While most water heater installations in closed systems can be served by WaterGuard Expansion Tanks, State Industries offers larger Therm-O-Flex Water Heater Expansion Tanks for installations requiring higher storage volumes. All models offer the same quality drawn-steel diaphragm design as WaterGuard Tanks, including bonded polymer lining.



Therm-O-Flex Water Heater Expansion Tanks

Model Number	Gallon Capacity	Maximum Acceptable Volume (Gallons)		Dimensions in Inches		Shipping Weight (Lbs.)
		40 PSI	60 PSI	A	B	
ETC-15	14.6	8.0	5.6	15 ³ / ₈	24 ³ / ₄	25
ETC-20	20	10.1	6.7	15 ³ / ₈	32 ³ / ₄	32
ETC-36	36	16.6	11.4	20	32 ³ / ₈	45
ETC-52	52	25.5	19.7	23 ³ / ₈	32 ³ / ₈	80
ETC-86	86	45.4	32.8	23 ³ / ₈	59	99
ETC-96	96	49.2	34.6	23 ³ / ₈	63 ³ / ₈	110

All models: 100 PSIG Maximum Working Pressure



THERM-O-FLEX™

SPACE HEATING EXPANSION TANKS

- For use with space heating boilers in closed systems — not for use with potable water heating systems
- Models up to 14.6 gallons feature in-line design for installation directly into system piping
- Models from 14.6 gallons and up feature free-standing design
- Field-adjustable 12 PSI Air charge
- Drawn-steel tank
- Butyl diaphragm, for permanent separation of air and water, with no waterlogging
- Maximum Working Pressure 100 PSI
- Maximum Temperature: 240°F
- 1-Year Limited Warranty

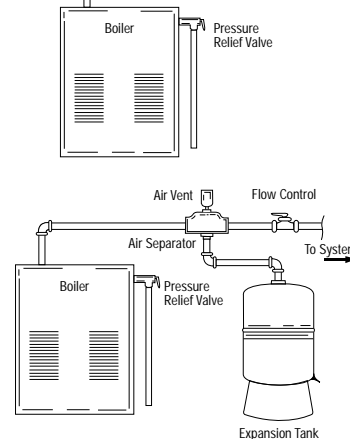
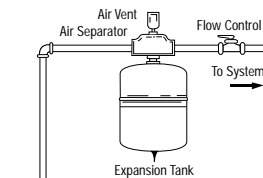


NSF International
Listed Standard 61

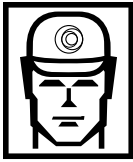
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Therm-O-Flex Expansion Tanks for closed space heating systems provide the same benefit as WaterGuard and Therm-O-Flex tanks for water heaters...they provide a place for expanding water to go during cycles of thermal expansion, eliminating the risk of damage to the boiler and piping in the system.

State offers in-line tanks from 2 through 14.6-gallons free-standing models from 14.6 gallons through 96 gallons, plus special Combination Units, which are shipped with an air vent and separator, both of which are required for proper installation, as shown in the drawings below.

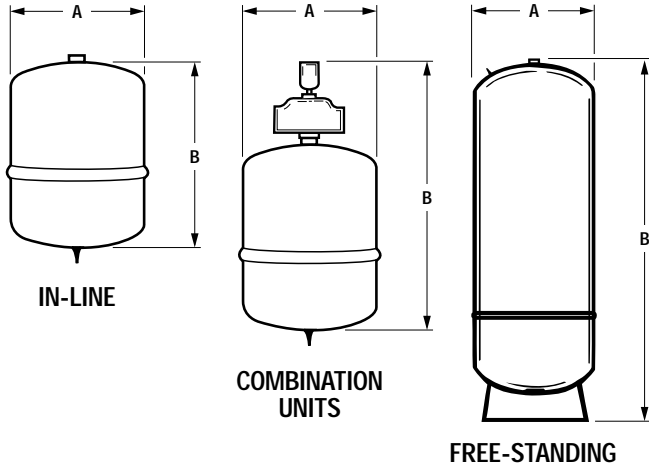


See next page for specifications and sizing information on Therm-O-Flex Space Heating Expansion Tanks.



THERM-O-FLEX™

SPACE HEATING EXPANSION TANKS



Therm-O-Flex Sizing Guide

Net Boiler Output in 1000s of Btu's	Recommended Therm-O-Flex Tank(s)
25 – 50	ET-2, ET-2V-1, ET-2V2
75 – 150	ET-5, ET-5V-1, ET-5V-2
175 – 200	ET-7, ET-7V-1, ET-7V-2
200 – 400	ET-14, ET-15, ET-14V-3, ET-14V-4
425 – 600	ET-20
625 – 950	ET-36
975 – 1350	ET-52
1375 – 1600	ET-86

Sizing based on the following operating conditions: Cold pressure 12 PSI, Relief set 30 PSI, maximum temperature 240°F. Sizes shown are for fin-tubed baseboard radiation. For systems with converters and/or unit heaters, increase tank one size. For cast iron radiation increase tank two sizes.

Therm-O-Flex Space Heating Expansion Tanks

	Model Number	Gallon Capacity	Maximum Acceptable Volume (Gallons) 20 PSIG	Dimensions in Inches		Shipping Weight (Lbs.)
				A	B	
In-Line	ET-2	1.96	1.53	8 $\frac{3}{8}$	12 $\frac{1}{2}$	5
	ET-5	4.55	3.75	11 $\frac{3}{8}$	14 $\frac{3}{4}$	8
	ET-7	7.3	4.6	11 $\frac{3}{8}$	21 $\frac{1}{8}$	11
	ET-14	14.6	10.5	15 $\frac{5}{8}$	15 $\frac{3}{4}$	22
Free-Standing	ET-15	14.6	10.5	15 $\frac{5}{8}$	24 $\frac{3}{4}$	25
	ET-20	20	13.5	15 $\frac{5}{8}$	32 $\frac{3}{4}$	32
	ET-36	36	21	20	32 $\frac{5}{8}$	45
	ET-52	52	33.8	23 $\frac{3}{8}$	32 $\frac{5}{8}$	80
	ET-86	86	61.2	23 $\frac{3}{8}$	59	99
	ET-96	96	64.2	23 $\frac{3}{8}$	63 $\frac{3}{8}$	110
Combination Units*	ET-2V-1	1.96	1.53	8 $\frac{3}{8}$	20 $\frac{1}{2}$	10
	ET-2V-2	1.96	1.53	8 $\frac{3}{8}$	20 $\frac{1}{2}$	10
	ET-5V-1	4.55	3.75	11 $\frac{3}{8}$	22 $\frac{3}{4}$	12 $\frac{1}{2}$
	ET-5V-2	4.55	3.75	11 $\frac{3}{8}$	22 $\frac{3}{4}$	12 $\frac{1}{2}$
	ET-7V-1	7.3	4.6	11 $\frac{3}{8}$	29 $\frac{1}{8}$	21
	ET-7V-2	7.3	4.6	11 $\frac{3}{8}$	29 $\frac{1}{8}$	21
	ET-14V-3	14.6	10.5	15 $\frac{5}{8}$	29 $\frac{3}{4}$	24
	ET-14V-4	14.6	10.5	15 $\frac{5}{8}$	29 $\frac{3}{4}$	24

*Combination Units with Air Vent and Air Separator.

All Models: 100 PSIG Maximum Working Pressure

All In-Line and Free-Standing Models have 1/2" MPT connections;

Combination Unit Connection Sizes: ET-2V-1, ET-5V-1, ET-7V-1 have 1" MPT connection;
 ET-2V-2, ET-5V-2, ET-7V-2 have 1/4" MPT connection;
 ET-14V-3 has 1 1/2" MPT connection;
 ET-14V-4 has 2" MPT connection

For larger systems, it will be necessary to calculate the expansion of water within the system. Our engineering department can assist you, if you provide the size of the system in gallons, the pressure, and the maximum operating temperature. If you do not know the system capacity, it can be calculated from the amount and size pipe used.



All State expansion tanks are manufactured in the United States of America.

Specifications are subject to change without prior notice.