

EXPANSION TANKS POTABLE WATER AND SPACE HEATING SYSTEMS

WaterGuard

Therm-O-Flex

Potable water expansion tanks for:

- Residential water heaters
- Commercial water heaters
- Pressure to 150 PSI
- 2 gallon through 86 gallon

Hydronic expansion tanks for:

- Residential boilers
- Commercial boilers
- 2 gallon through 86 gallon

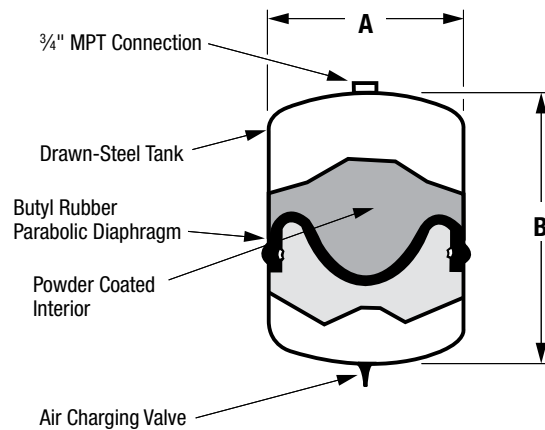
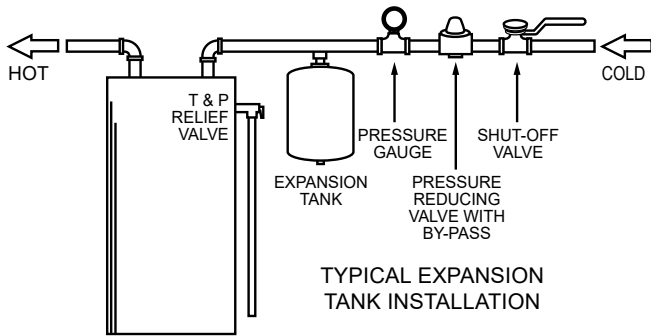


Thermal expansion occurs when water is heated during non-use periods. The installation of a Pressure Reducing Valve (PRV), Check Valve or Back Flow Preventer “closes” the water system, leaving water with no room for expansion. Many local codes now require a closed system, to prevent backflow into the 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 38 PSI Air Charge
- Drawn-steel tank with powder coated interior
- Butyl rubber parabolic diaphragm, for separation of air and water
- 2-Gallon (ETC-2X), 5-Gallon (ETC-5X) and 10-Gallon (ETC-10X)
- Maximum Working Pressure 150 PSI
- Maximum Temperature: 140°F Residential; 180°F Commercial
- IAPMO Approved
- 5-Year Limited Warranty
- Certified to NSF 61G and 372



Expansion tanks are pre-charged with a 38 PSI air charge. If the inlet water pressure is higher than 38 PSI, the expansion tank’s air pressure must be adjusted to match that pressure but must not be higher than 80 PSI.



Technical details						
Model number	Gallon capacity	Maximum acceptable volume (gal)		Dimensions in inches		Shipping weight (lbs)
		40 PSI	60 PSI	A	B	
ETC-2X	2	1.27	1.03	8-1/4	10-3/16	5
ETC-5X	5	3.05	2.19	11	14-3/4	9
ETC-10X	10	6.55	5.25	15-3/8	15-1/2	18

All models: 150 PSIG maximum working pressure

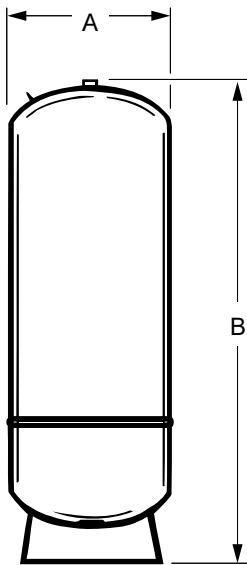
Sizing chart for residential water heaters						
Inlet water pressure*	Water heater capacity in gallons					
	30	40	50	66	82	100
40 PSI	ETC-2X			ETC-5X		
50 PSI	ETC-2X			ETC-5X		
60 PSI	ETC-2X			ETC-5X		
70 PSI	ETC-2X			ETC-5X		
80 PSI	ETC-2X			ETC-5X		

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

Sizing chart for commercial water heaters						
Water temperature	Water heater capacity in gallons					
	30	40	50	66	100	120
140°	ETC-2X		ETC-5X		ETC-10X	
150°	ETC-2X		ETC-5X		ETC-10X	
160°	ETC-2X		ETC-5X		ETC-10X	
170°	ETC-5X		ETC-5X		ETC-10X	
180°	ETC-5X		ETC-5X		ETC-10X	

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.



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 gallons feature in-line design for installation directly into system piping
- Models from 15 gallons and up feature free-standing design
- Field-adjustable 12 PSI Air charge
- Drawn-steel tank
- Butyl rubber parabolic diaphragm, for separation of air and water
- Maximum Working Pressure 100 PSI
- Maximum Temperature: 240°F
- 1-Year Limited Warranty

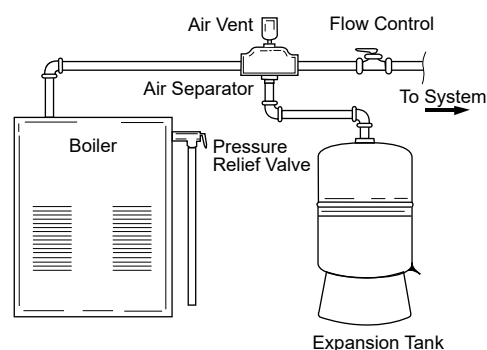
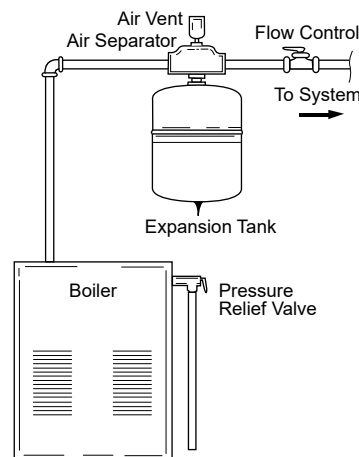


Therm-O-Flex Expansion Tanks for closed space heating systems provide the same benefit as WaterGuard and Therm-O-Flex tanks for water heaters...they provide a place for expanding water to go during cycles of thermal expansion, eliminating the risk of damage to the boiler and piping in the system.

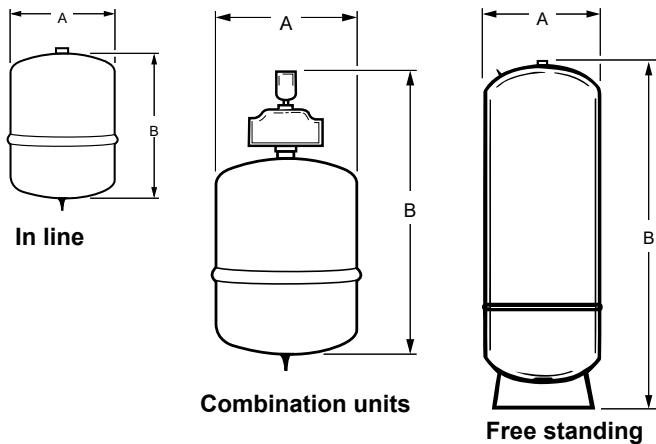
State offers in-line tanks from 2 through 14-gallons free-standing models from 15 gallons through 86 gallons, plus special Combination Units, which are shipped with an air vent and separator, both of which are required for proper installation, as shown in the drawings below.

Technical details Water heater expansion tanks						
Model number	Gallon capacity	Maximum acceptable volume (gal)		Dimensions in inches		Shipping weight (lbs)
		40 PSI	60 PSI	A	B	
ETC-15	15	8.0	5.6	15-3/8	24-3/4	25.5
ETC-20	20	10.1	6.7	15-3/8	32-3/4	30
ETC-36	36	16.6	11.4	20	32-3/8	45
ETC-52	52	25.5	19.7	23-3/8	32-5/8	77
ETC-86	86	45.4	32.8	23-3/8	59	105

All models: 100 PSIG maximum working pressure



More details on the space heating expansion tanks on the next page



Sizing guide	
Net Boiler Output in 1000s of Btu's	Recommended Therm-O-Flex Tank(s)
25 - 50	ET-2, ET-2V-1, ET-2V-2
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
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.

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.

Technical details Space heating expansion tanks						
	Model number	Gallon capacity	Max acceptable volume (gal) 20 PSIG	Dimensions in inches		Shipping weight (lbs)
				A	B	
In line	ET-2	2	1.53	8-1/4	10-3/16	5
	ET-5	5	3.75	11	14-3/4	8
	ET-7	7	4.6	11	21-1/16	14
	ET-14	14	10.5	15-3/8	23-1/2	25
Free-standing	ET-15	15	10.5	15-3/8	24-3/4	25.5
	ET-20	20	13.5	15-3/8	32-3/4	32
	ET-36	52	33.8	23-3/8	32-5/8	45
	ET-52	52	33.8	23-3/8	32-5/8	77
	ET-86	86	61.2	23-3/8	59	105
Combination units*	ET-2V-1	2	1.53	8-1/4	20-1/2	10
	ET-2V-2	2	1.53	8-1/4	20-1/2	10
	ET-5V-1	5	3.75	11	22-3/4	13
	ET-5V-2	5	3.75	11	22-3/4	13
	ET-7V-1	7	4.6	11	29-1/8	16
	ET-7V-2	7	4.6	11	29-1/8	16

*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 1/4" MPT connection