Reliance Pump Tanks

Pump and Expansion Tanks

Reliance Pump Tanks

www.RelianceWaterHeaters.com

500 Tennessee Waltz Parkway
Ashland City, TN 37015
1-800-365-4054

EXPANSION TANKS

Why Expansion Tanks are Important

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. National Standard Plumbing Code 10.5.7 requires backflow prevention, 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 tank and 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. Most water heater warranties do not cover failure due to thermal expansion.

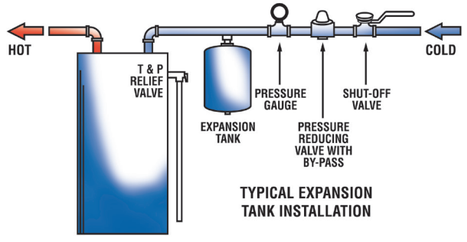
A properly sized Expansion Tank eliminates these problems, by giving water a place to go when thermal expansion occurs. When a water heating cycle ends, or when any fixture is opened within the system, the impact of thermal expansion is reduced, and water drains out of the expansion tank back into the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

Expansion tanks are pre-charged with 38 PSI. 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.

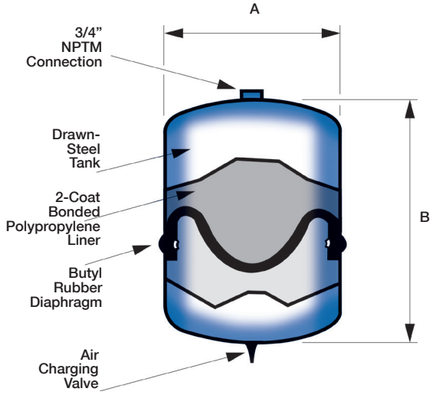
Reliance® Expansion Tank Features

- Stainless Steel Acceptance Fitting
- External Baked Epoxy-Polyester Coating
- Two-Piece design
- 150 PSI rating
- Butyl Rubber Diaphragm
- Deep Drawn Steel
- 1- and 5-Year Limited Warranty
- 2-Coat Bonded Polypropylene Liner
- No wasted water

Typical Expansion Tank Installation



TYPICAL EXPANSION TANK INSTALLATION



Expansion Tank Sizing Chart For Residential Water Heaters

Inlet Water Pressure*	Water Heater Capacity in Gallons					
	30	40	50	66	82	100
40 PSI	TW5	TW5	TW5	TW12	TW12	TW12
50 PSI	TW5	TW5	TW5	TW12	TW12	TW12
60 PSI	TW5	TW5	TW12	TW12	TW12	TW12
70 PSI	TW5	TW5	TW12	TW12	TW12	TW12
80 PSI	TW5	TW12	TW12	TW12	TW12	TW12

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

MODEL NUMBER	MAX WORKING PRESSURE (PSIG)	TANK VOLUME (GAL)	MAX ACCEPTANCE VOL (60 PSI)	CONN. SIZE (MPT)	DIMENSIONS (INCHES) DIAMETER	DIMENSIONS (INCHES) HEIGHT	WEIGHT (LBS)	HEATER SIZE
ONE-YEAR LIMITED WARRANTY								
TW 5-1	150	2.1	1.03	3/4”	7.9	11	4.5	Up to 52 gal.
TW 12-1	150	4.8	2.19	3/4”	10.6	13.7	8.2	Up to 100 gal.
FIVE-YEAR LIMITED WARRANTY								
TW 5-5	150	2.1	1.03	3/4”	7.9	11	4.5	Up to 52 gal.
TW 12-5	150	4.8	2.19	3/4”	10.6	13.7	8.2	Up to 100 gal

PUMP TANKS

Why Pump Tanks are Important

A Pump Tank is an essential part of any well system, delivering these benefits:

- It ensures that your pump will run for at least one minute each time it cycles, as required by pump manufacturers.
- It stores a supplemental water supply between pump cycles, to reduce the number of cycles throughout the day, and helps prolong pump life.
- It helps maintain water pressure within your system, ensuring proper operation of your dishwasher and washing machine, and robust flow for showering and bathing.

A properly sized pump and pump tank will work as a team to meet your needs and will deliver many years of dependable service.

How to Size a Pump Tank

1. If you know your current pump size, use columns 2 and 3 in the sizing chart below to make your tank selection.

2. If you do not know your pump size or the size of your current tank, count all your water fixtures. Be sure to include sinks, tubs, showerheads, outside faucets, utility sinks, dishwasher, washing machine, etc. Count each fixture individually. Use columns 1 and 3 in the sizing chart below to make your tank selection.

3. If replacing a glass-lined or other “standard” tank with a diaphragm tank, use columns 3 and 4 in the sizing chart below to make your tank selection.

SIZING CHART			
1	2	3	4
Number of Water Fixtures	Estimated Pump Size	Diaphragm Tank Models	“Standard” Tank Sizes
UP TO 7	5-7 GPM*	PMDH-20	42 GALLON
8-10	10 GPM*	PMD-36	82 GALLON
10-13	12-15 GPM*	PMD-52	82 GALLON
13-16	16-20 GPM*	PMD-65	120 GALLON
17-28	20 GPM*	PMD-86, PMD-119	220 GALLON

*GPM = Gallons Per Minute

How to Install a Pump Tank

Each Reliance® Pressurized Diaphragm Tank includes a detailed manual that takes you step-by-step through installation procedures such as:

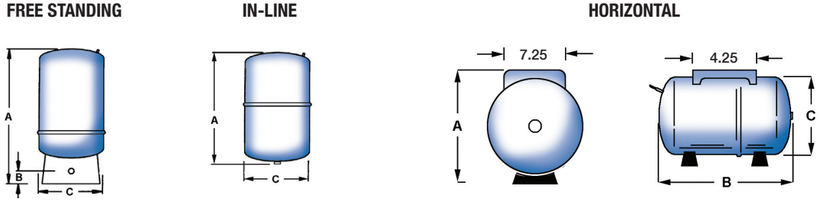
1. Determining proper tank location
2. Attaching the acceptance fittings
3. Adjusting the tank pre-charge pressure
4. Leveling the tank and connecting it to the water supply line
5. Fine-tuning the tank to assure lag-free delivery

Model, Item, Dimensions and Drawdown

Drawdown is the actual usable water a tank can deliver during a cycle.

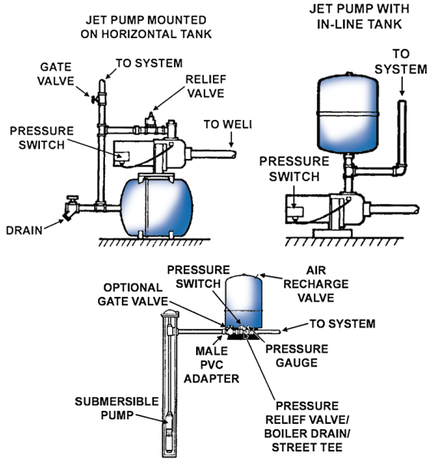
Drawdown will vary depending on the operating pressure range set for your pump tank. Drawdown is a function of the tank volume. Approximately 1/3rd of the tank total volume is usable water.

NOTE: The maximum working pressure is 100 PSI. Install a pressure relief valve on every pump installation.



MODEL	VOLUME (US GAL)	DRAWDOWN 30-50 PSI	CONN. SIZE NPT (INCHES)	A (INCHES)	B (INCHES)	C (INCHES)	SHIPPING WEIGHT (LBS)
FREE-STANDING PUMP TANKS							
PMD-14	14	4.3	1 F	24 3/4	2 1/4	15 3/8	26
PMD-20	20	6.1	1 F	32 3/4	2 1/4	15 3/8	30
PMD-36	36	11.2	1F	32 3/8	2 1/4	20	45
PMD-52	52	16.1	1 1/4 F	38 5/8	2 1/4	23 3/8	77
PMD-65	65	20	1 1/4 F	46 5/8	2 1/4	23 3/8	87
PMD-86	86	26.7	1 1/4 F	59	2 1/4	23 3/8	105
PMD-119	119	37.0	1 1/4 F	61 1/4	2 1/2	26	165
IN-LINE PUMP TANKS							
PMDI-2	2	.6	3/4 M	10 3/16	–	8 1/4	5
PMDI-5	4.5	1.4	3/4 M	14 3/4	–	11	9
PMDI-7	7	2.3	3/4 M	21 1/16	–	11	14
PMDI-14	14	4.3	1 M	23 1/2	–	15 3/8	25
HORIZONTAL PUMP TANKS							
PMDH-7	7.3	2.3	3/4 M	12 7/8	21 1/8	11	16
PMDH-14	14	4.3	1 M	17 3/8	21 3/4	15 3/8	25 1/2
PMDH-20	20	6.1	1 M	17 3/8	27 1/8	15 3/8	30

A Typical Pump Tank Installation



NSF Certified to NSF/ANSI/CAN 61-G

Replacing an Existing Pump Tank

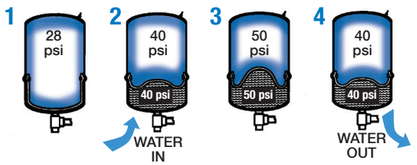
A standard pump tank can be replaced with a diaphragm tank. This will ensure operation of a maintenance-free system.

- Install a pressure relief valve at the tank connection to ensure system protection.
- Be sure to plug the air port on a jet pump, since outside air is no longer needed.
- All open bleeder orifices in the pump casing must be plugged.

NOTE: A pressurized tank always takes up less space than a similar capacity standard pump tank.

Diaphragm Pump Tanks

- For dependable protection of your jet or submersible well pump
- Steel shell with powder-coated exterior for maximum corrosion resistance
- Metal air charge valve is conveniently located and resistant to mechanical damage
- Strong butyl rubber parabolic diaphragm delivers dependable service
- Powder-coated inner shell protects the water reservoir



How a Diaphragm Pump Tank Works

1. START-UP CYCLE
   Diaphragm is pressed against the bottom of the chamber.
2. FILL CYCLE
   Water is pumped into the reservoir, which forces the diaphragm upward into the air chamber.
3. HOLD CYCLE
   Pump-cutoff pressure is attained. Diaphragm reaches its upmost position. Reservoir is now filled to its rated capacity.
4. DELIVERY CYCLE
   Pump remains shut off while air pressure in top chamber forces diaphragm downward, delivering water to the system.