http://waterheatertimer.org/Repair-water-heater-valve.html#expansion

Thermal expansion or closed system/ Expansion tank

CLOSED SYSTEM/ thermal expansion
As water is heated, it expands (thermal expansion).
In a closed system, the volume of water will grow.
As the volume of water grows, there will be a corresponding increase in water pressure due to thermal expansion.
Thermal expansion can cause premature tank failure (leakage).
This type of failure is not covered under the limited warranty.
Thermal expansion can also cause intermittent temperature-pressure relief valve operation: water discharged from the valve due to excessive pressure build up.
The temperature-pressure relief valve is not intended for the constant relief of thermal expansion.
This condition is not covered under the limited warranty.
A properly-sized thermal expansion tank should be installed on all closed systems to control the harmful effects of thermal expansion.
Contact a plumbing service agency or your retail supplier regarding the installation of a thermal expansion tank.

Section 607.3.2 of the Standard Plumbing Code states that if a system with a water heater has a backflow prevention device installed and as a result thermal expansion causes an increase in pressure, a device must be fitted to limit the pressure to 80 pounds per square inch (psi) or less.
Thermal expansion is necessary when any of the following occurs:
• A recent water meter replacement
• A hot water heater replacement
• The construction of a new home
• When a backflow preventer is installed on the water meter or a pressure reducing valve is installed on the service line.

Determine if a check valve exists in the inlet water line.
Check valve may have been installed in the cold water line as a separate back flow preventer, or it may be part of a pressure reducing valve, water meter or water softener.
A check valve located in the cold water inlet line can cause what is referred to as a **"closed water system."**
A cold water inlet line with no check valve or back flow prevention device is referred to as an "open" water system.
As water is heated, it expands in volume and creates an increase in pressure within the water system.
This action is referred to as **"thermal expansion."**
In an "open" water system, expanding water which exceeds the capacity of the water heater flows back into the city main where the pressure is easily dissipated.
A **"closed water system,"** however, prevents the expanding water from flowing back into the main supply line, and the result of **"thermal expansion"** can create a rapid and dangerous pressure increase in the water heater and the system piping.
This rapid pressure increase can quickly reach the safety setting of the relief valve, causing it to operate during each heating cycle.
Thermal expansion, and the resulting rapid and repeated expansion and contraction of components in the water heater and piping system can cause premature failure of the relief valve, and possibly the heater itself. Replacing the relief valve will not correct the problem.
The suggested method of controlling thermal expansion is to install an expansion tank in the cold water line between the water heater and the check valve.

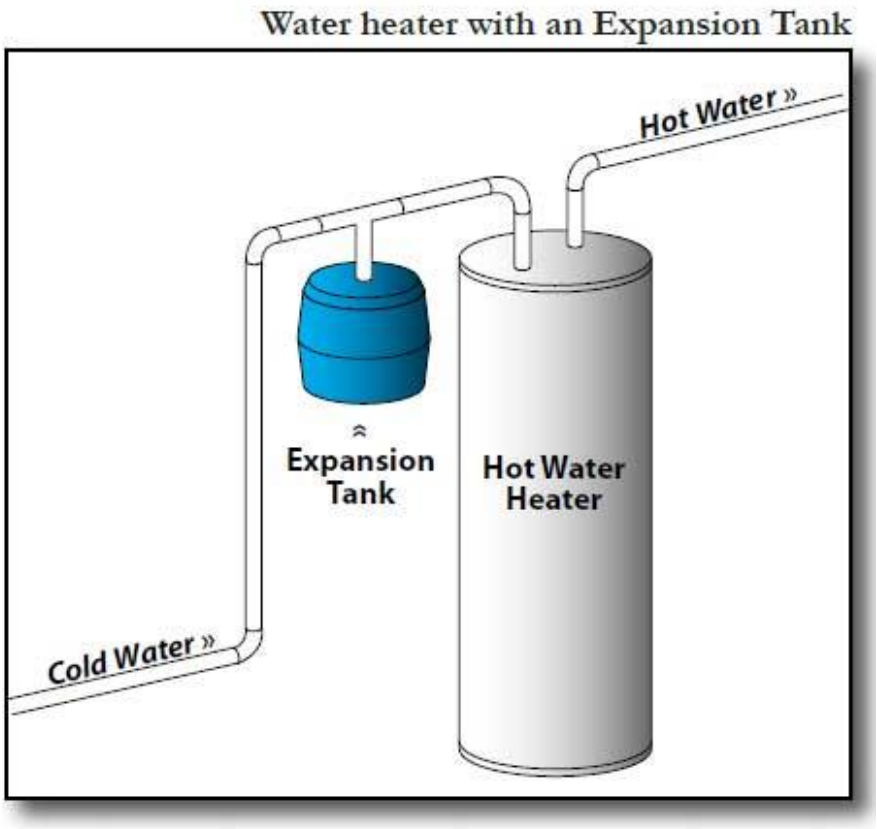
The expansion tank is designed with an air cushion built in that compresses as the system pressure increases, thereby relieving the over pressure condition and eliminating the repeated operation of the relief valve.
Other methods of controlling thermal expansion are also available.
Contact your installing contractor, water supplier, or plumbing inspector for additional information regarding this subject.

1) Buy expansion tanks at Amazon:
http://www.amazon.com/gp/search/ref=as_li_qf_sp_sr_tl?ie=UTF8&camp=1789&creative=9325&index=aps&keywords=Expansion%20tank&linkCode=ur2&tag=waterheaterti-20

Size guide:

Water pressure	30 gallon	40 gallon	50 gallon	66 gallon	82 gallon	100 gallon
40 PSI	2.1	2.1	2.1	2.1	4.4	4.4
50 PSI	2.1	2.1	2.1	2.1	4.4	4.4
60 PSI	2.1	2.1	2.1	2.1	4.4	4.4
70 PSI	2.1	2.1	2.1	2.1	4.4	4.4
80 PSI	2.1	4.4	2.1	4.4	4.4	4.4

2) Read example how to install expansion tank:
http://waterheatertimer.org/pdf/Expansion-tank-instruction.pdf
3) Read about TP temperature/pressure valve troubleshoot:
http://waterheatertimer.org/How-to-replace-TP-valve.html



The expansion tank's size, color, and position may vary. Tanks are commonly installed in a low or high upright position.