

Why Do You Need A Storage Tank?

That's an excellent question and I'm glad you asked. The idea of a storage tank is foreign to many people in North America. Most of us, who have heated our homes with wood, have grown accustomed to lighting off the woodstove when we wanted heat and re-loading it with wood every 4-8 hours to keep our families warm during those long, cold, winter nights. Ah, the memories are coming back of getting up at 4am to put wood in the stove to make sure the house was warm in the morning. *B-r-r-r-r-r-r* Then there are the days that it's around 40*-60*

as you can get it, making all sorts of creosote in the process creating a real fire hazard. Have you noticed that the majority of chimney fires occur in the fall and spring?

where everyone complains, "it's cold, can't we have a fire?" So you fire up the stove, and damp it down as closed. There's a lot we can learn about efficient heating from the Europeans! After all, they've been dealing with fuel prices for years that we shudder just thinking about. I think our prices for fuel will be right in line with what they're paying, in the near future. We all need to do what we can, as soon as we can.

It is common in Europe to incorporate within a heating system a hot water storage tank, or as they refer to it, an "accumulation" tank. When used in conjunction with a solid fuel hydronic heating system (otherwise known as wood boiler) or radiant solar heating systems, the system's efficiency and usefulness is increased many times over. All of this equates to us being able to save on the amount of fuel we need and to **SAVE A LOT OF MONEY!**

Here is why...

When the furnace in your home was originally sized it was done with this in mind: to be able to adequately heat your home to a comfortable temperature, during the coldest possible day of the year. This is the reason we have furnaces and boilers rated in the area of around 125,000 BTU's for a home of approximately 2,000 square feet of living area. When it's NOT the coldest possible day of the year, it doesn't require all that many BTU's to keep our home and family warm. In fact, the warmer it is outside, the less BTU's is needed to warm us up. For instance, you may need only 10,000 BTU's in a 24 hour period when it's 55* or 60* out. We also know that on warmer days we don't need temperatures of 170 [Type text]

degrees coming through our heating system to warm our home, in fact temperatures of 110*-120* is all that's required. Seems like a waste using a furnace, woodstove or boiler that's producing 125,000 BTU's and putting out temperatures in excess of 180* when we need so much less.

That's because IT IS! Now to the good part in how a storage tank fixes all that.

First we have to be aware of a little thermal dynamics here which is: 1 BTU is equal to 1 lb of water raised 1 degree, and 1 gallon of water weighs 8.3 lbs. So if you raise 1 gallon of water 1 degree, you have stored 8.3 BTU's. When water is raised to a temperature of 170* and that hot water continues to be useable for heating purposes down to a temperature of 120* this leaves 50* of useable hot water. When this temperature differential is applied to 1 gallon of water it amounts to 8.3 multiplied by 50* which means we have 415 BTU's of energy. When this energy is applied to a 500 gallon hot water storage tank, we now have 207,500 BTU's of energy! This means that the more water in storage that we have, the more energy we can store. For instance, with a 1,000 gallon storage tank we are able to store 415,000 BTU's of energy. If our home requires 10,000 BTU's an hour to heat, in a 500 gallon tank we have stored enough energy to last around 20 hours, or in other words, 20 hours between firing the boiler. With a 1,000 gallon tank, this equates to roughly 40 hours between firing the boiler. An EKO LINE 40 BOILER (producing 137,000 BTU's) can raise the temperature of a 500 gallon storage tank of water from 110* to 170* in about 5 or 6 hours.

Now, let's take this money saving one step further. How much does your hot water heater cost you each month?

Since you're already storing the water for heating your home, why not heat your domestic hot water at the same time. During the summer months, when you're not heating your home, firing the boiler for one cycle will charge up your storage tank for your domestic hot water needs for an extended period of time. Depending upon your hot water usage, a 500 gallon storage tank raised to 170* could last a family of 5 for up to 2 weeks!

Your system will work without installing a tank, but when used, it can be just as important a purchase as your EKO LINE BOILER itself. After all, our goal is two-fold; one is to give us a means of meeting our energy needs in a most ecologically responsible and efficient manner while at the same time relieving our dependence on fossil fuels which helps us all economically.