HOT WATER BUFFER TANKS

ASME Commercial Buffer Tanks

Frequently Asked Questions

Q: What is a hot water buffer tank?

A: It is a hot water storage tank.

Q: Where is it located in the system?

A: The tank is installed between the boiler and the heating system (zones).

Q: What is the purpose of a hot water buffer tank?

A: It provides additional water storage in the heating system to help eliminate boiler short cycling.

Q: Why would my boiler short cycle?

A: The boiler is sized to heat an entire home or building. Not all zones call at the same time and when smaller zones call for heat, the boiler will reach its high limit quicker than it should which results in short-cycling.

Q: Why is short cycling a concern?

A: Short cycling will result in lower heating efficiency and higher fuel bills. It will also result in additional wear and tear to the boiler and heating system. A buffer tank can help save energy, reduce maintenance and extend the life of the system.

Q: How does the buffer tank help?

A: When a small zone calls for heat it signals the boiler to come on. As the circulator pushes the boiler water through the zone, the excess heated water is circulated through the buffer tank. This added volume prevents the boiler from short cycling (Figure 1).

Q: What if multiple zones are calling for heat?

A: When heating demand is greater than the boiler output, the additional demand will be satisfied by the added volume of the buffer tank (Figure 2).

Q: How does the buffer tank work under everyday conditions?

A: When heating demand is equal to boiler output, the boiler water will basically flow through the tank to satisfy the heating demand (Figure 3).

Figure 1

System Flow < Boiler Flow

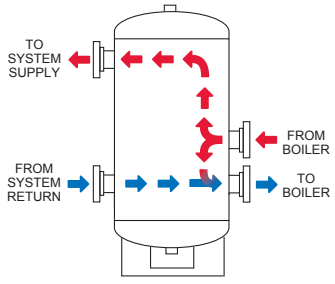


Figure2

System Flow > Boiler Flow

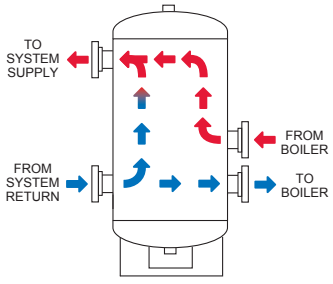
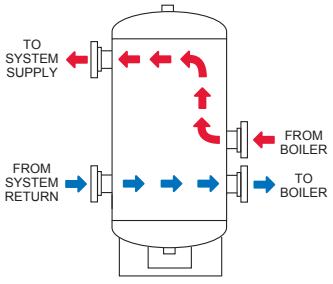


Figure 3

System Flow = Boiler Flow



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