Vaughn Buffer Tanks (Model D4B)

What is a Buffer Tank?
A buffer tank is a cost effective solution to prevent short cycling in various boiler applications, while also serving as a hydraulic separator, ensuring that the heating system flow and boiler flow do not affect one another. Both of these issues if left unchecked can lead to excessive boiler cycling, reduced efficiencies, and premature equipment failure.

Made with heavy guage steel on site in Massachusetts, the Vaughn D4B is designed to provide years of reliable service.

Sizing Formula

How is a Buffer Tank Sized?
A Buffer Tank is sized to provide a minimum runtime for the boiler plant. Use the equation below to find the properly sized tank for your specific application. Tank connection diameters should be sized to meet the maximum flow requirements of the application.

Buffer Tank Capacity = Run Time x (Boiler/System Minimum Input - Minimum System Load) / (System supply temp-system return temp) x 500

Required Variables:
A. Desired/ Minimum boiler runtime*
B. Boiler/system minimum input (BTU/Hr)
C. Minimum system heat load (BTU/Hr)
D. System Water Supply Temp (°F)
E. System Return Water Temp (°F)
F. Calculate system ΔT (temp rise) by subtracting E from D in °F

Tank Capacity = \( \frac{A \times (B-C)}{F \times 500} \)

Example:
Tank Capacity = \( \frac{10 \times (20,000 - 10,000)}{20 \times 500} \)
= Model S 10 D4B

*Minimum boiler runtime (Industry suggestion is a 10 minutes at a minimum)