# **How to Size a Chiller**

There is a single and easy to follow formula for determining the size of chiller you require. However, there are a few factors you must know before you begin:

* The incoming water temperature
* The water temperature you require
* The flow rate

General sizing formula:

1. **Calculate Temperature Differential (ΔT°F)** ΔT°F = Incoming Water Temperature (°F) – Required Chill Water Temperature
2. **Calculate BTU/hr.** BTU/hr. = Gallons per hr x 8.33 x ΔT°F
3. **Calculate tons of cooling capacity** Tons = BTU/hr. ÷ 12,000
4. **Oversize the chiller by 20%** Ideal Size in Tons = Tons x 1.2
5. **You have the ideal size for your needs**

For example, what size chiller is required to cool 10 GPM from 72°F to 58°F?

1. ΔT°F = 72°F – 58°F = 14°F
2. BTU/hr. = 10 gpm x 60 x 8.33 x 14°F = 69,972 BTU/hr.
3. Ton Capacity = 69,972 BTU/hr. ÷ 12,000 = 5.831 Tons
4. Oversize the chiller = 5.831 x 1.2 = 6.9972
5. A 6.9972 or 7-Ton chiller is required