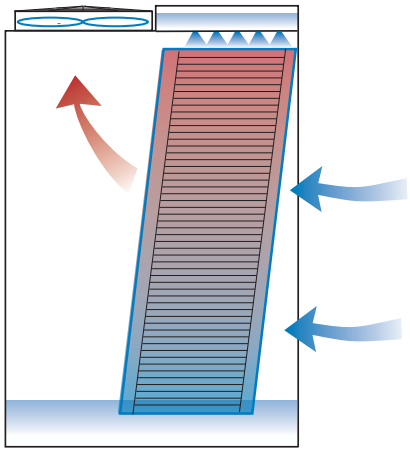
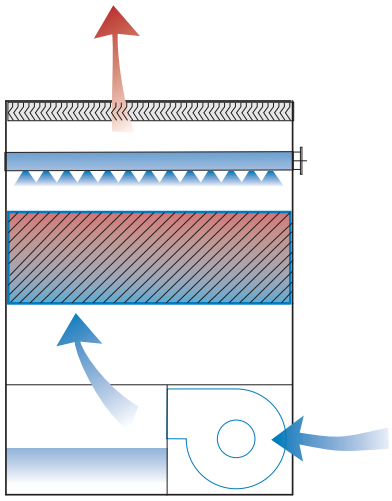
Forced-Draft vs. Induced-Draft Cooling Towers

Weigh the options when deciding between forced-draft or induced-draft cooling towers. Forced-draft cooling towers are advantageous when you need to overcome static pressure caused by ductwork on installations inside buildings or full enclosures. However, forced-draft cooling towers consume significantly more power than induced-draft cooling towers and are relatively more prone to recirculation if not ducted. Historically, forced-draft cooling towers have had a significant install base within the cooling tower market. However, with society's focus on energy conservation, new forced-draft cooling tower applications have mostly phased out, making forced-draft cooling towers more suitable for replacement than for projects requiring new cooling towers.



Induced-Draft Crossflow Cooling Tower
30hp – 595 Nominal Tons



Forced-Draft Counterflow Cooling Tower
80hp - 567 Nominal Tons

It's easy to quickly replace a forced-draft cooling tower with a similar forced-draft model and move on to the next project. Before doing this, ask the owner, "Does it really need to be forced-draft?" The majority of forced-draft replacement opportunities have no technical or application requirement to be forced-draft.

If the cooling tower is located outside without ductwork, the owner can significantly decrease the energy bill, sometimes by more than half, by replacing it with an induced-draft cooling tower. Recently, SPX Cooling Technologies recommended replacing (2) 80hp forced-draft, counterflow cooling towers with (2) 30hp induced-draft crossflow cooling towers. By following this recommendation, the owner was able to get 5% more capacity out of their cooling towers with only 38% of the energy consumption relative to the forced-draft models.

In this specific application, the new cooling towers fit nicely on the existing supporting steel and only minor piping adjustments were needed. Although this specific application required few changes in supporting steel and piping, special attention should be given to existing steel, piping, and electrical service when transitioning a facility from forced-draft to induced-draft cooling towers.

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