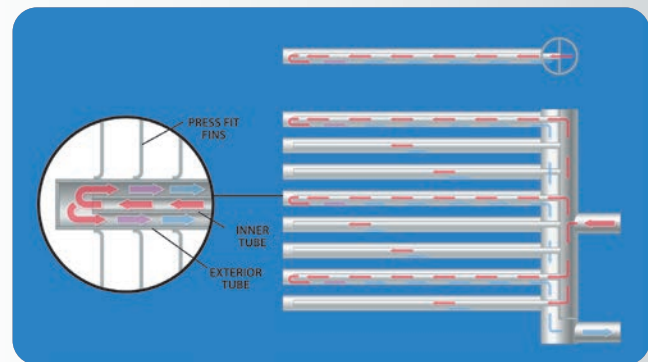# Steam Distributing Coils or "No-Freeze Coils"

Steam distributing coils are designed to minimize the potential of freezing when the coil sees air temperature below 40˚F or operates on a system with modulating steam pressure.
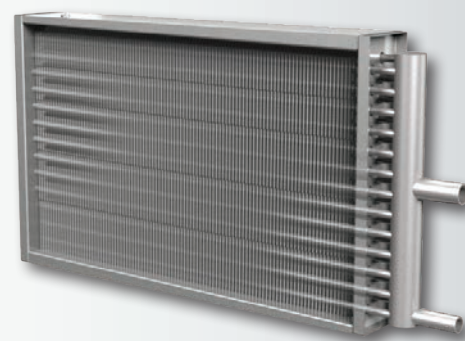
Steam distributing coils have an inner tube inserted down the entire length of the outer tube. The steam is fed to the inner tube and is driven into the annular space between the inner and outer tube where it condenses. The outer tube is plugged or capped so that the condensate under pressure has no place to go but down the outer tube toward the return header.

The idea behind the original design of this coil was to evenly distribute the steam and condensate throughout the coil so there are no "dead spots" or "cold spots" in the coil—spots that could potentially freeze. What also happens is that the steam moving down the inner tube keeps the condensate in the outer tube warm so that it does not freeze before it drains out into the header. Keep in mind, while these coils are commonly installed in applications where entering air is 40˚F or below it is still possible for them to freeze.

Steam distributing coils can be built with same end or opposite end connections depending on the application. It is recommended that steam coils be pitched toward the condensate header for proper drainage.
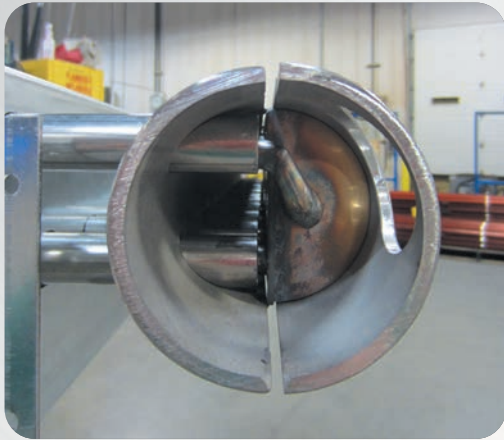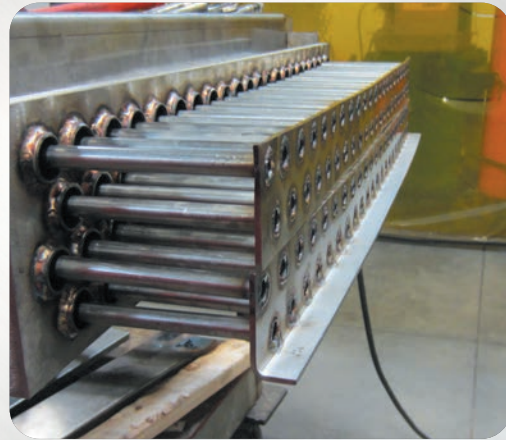

Fig. 1 – Steam Flow

Fig. 2 – Steam Distributing Coil

Give us a call or email if you have any application that sees cold air or operates with modulating steam pressure.
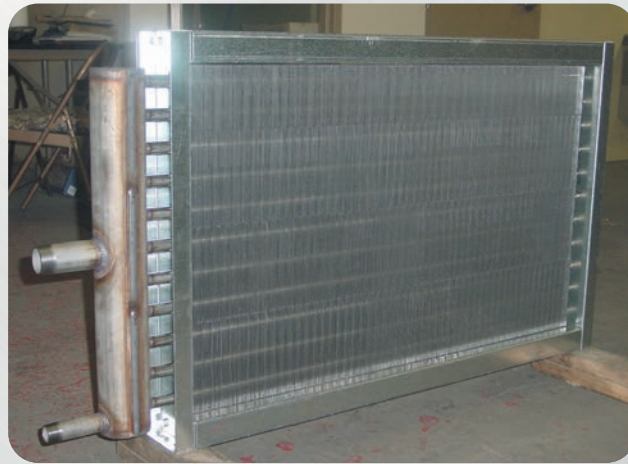
Fig. 3 – Steam distributing coil header showing inner tubes.

Fig. 4 – Steam distributing coil with inner tubes and IT plate.

Fig. 5 – Steam distributing coil with standard case.

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