

Steam Coils

For air heating coils, steam is the preferred medium for heat transfer throughout much of industry. It affords advantages over liquids because it is easy and inexpensive to move from the boiler to the point of use and because it gives up so much energy at a constant temperature when it condenses. Process control is easily and quickly accomplished with essentially no lag time as is experienced with liquids.

The selection of coil construction and materials is a multi-step process that must take a number of factors into consideration. Armstrong's line of heavy-duty steam coils is designed and manufactured to provide the long life and efficient heat transfer that pays dividends over a long period of time.

Selection of Steam Coil Circuitry

The following pages show the four types of coil circuits offered by Armstrong and discuss the application parameters of each. The return bend type circuit is not covered because Armstrong feels that one of the four listed circuits is a better choice for most applications.



Armstrong can build coils to a wide variety of material and performance specifications and dimensionally duplicate replacement coils to fit your exact requirements.

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit www.armstronginternational.com for up-to-date information.



Armstrong® Series 6000 Steam Coil Types

Standard Coils (Type S)

This type of coil is used for most applications where entering air temperatures are above 35°F and steam is at constant pressure. It is used extensively in high-temperature process applications and for “reheat” in HVAC systems. It is not, however, recommended where even outlet air temperatures are required immediately after the coil, such as in multi-zone heating systems, or where a modulating steam control valve is used to control temperature.

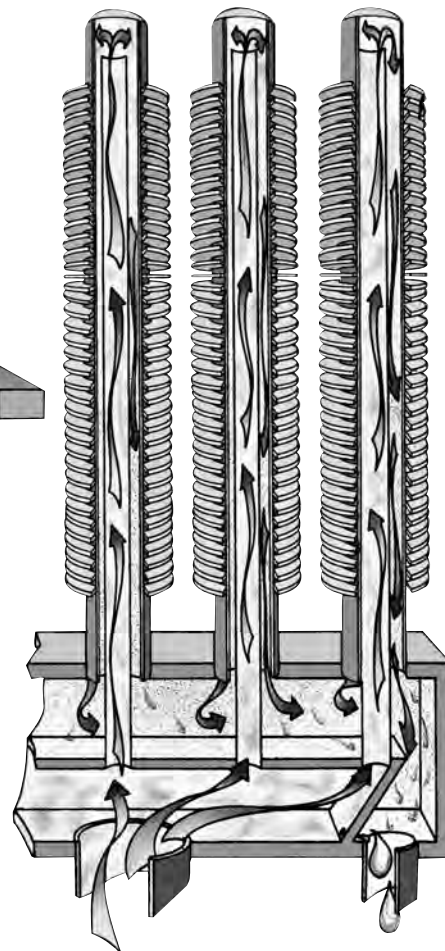
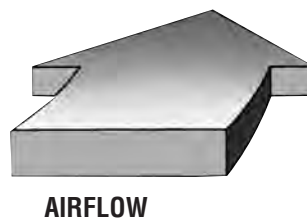
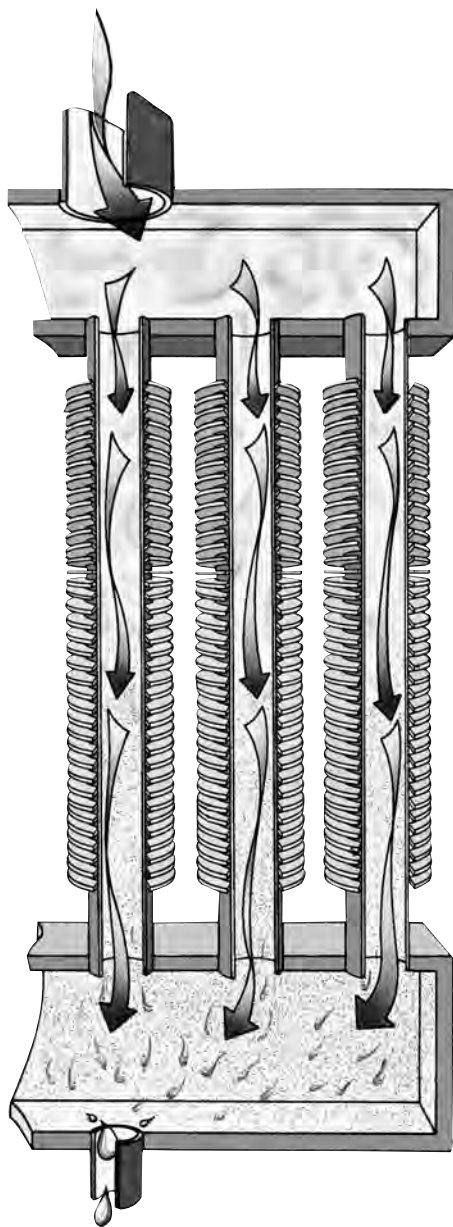
Centifeed Coils (Type C)

The single-row centifeed coil can be used where air is below freezing and/or modulating control is used. Recommended where:

- A** A single row delivers the required performance
- B** A modulating steam control valve is used
- C** Even outlet air temperatures are required over the whole coil face
- D** Stainless steel tubes are used

Two-row centifeed coils are available where (B) and (C) are required, but tandem type coils are a better choice with freezing air temperatures.

A centifeed coil is one plain tube—called the inner steam distribution tube—inserted inside an outer finned tube. The center tube is fed with steam, which travels up this distribution tube and is then discharged into the outer tube. It then travels back between the outside wall of the distribution tube and the inside wall of the finned tube to the condensate header. The inner tube acts as a steam tracer to keep the finned tube warm along its total length.



Type S coils are available with opposite-end connections only.

Type C coils are available with same-end connections only.

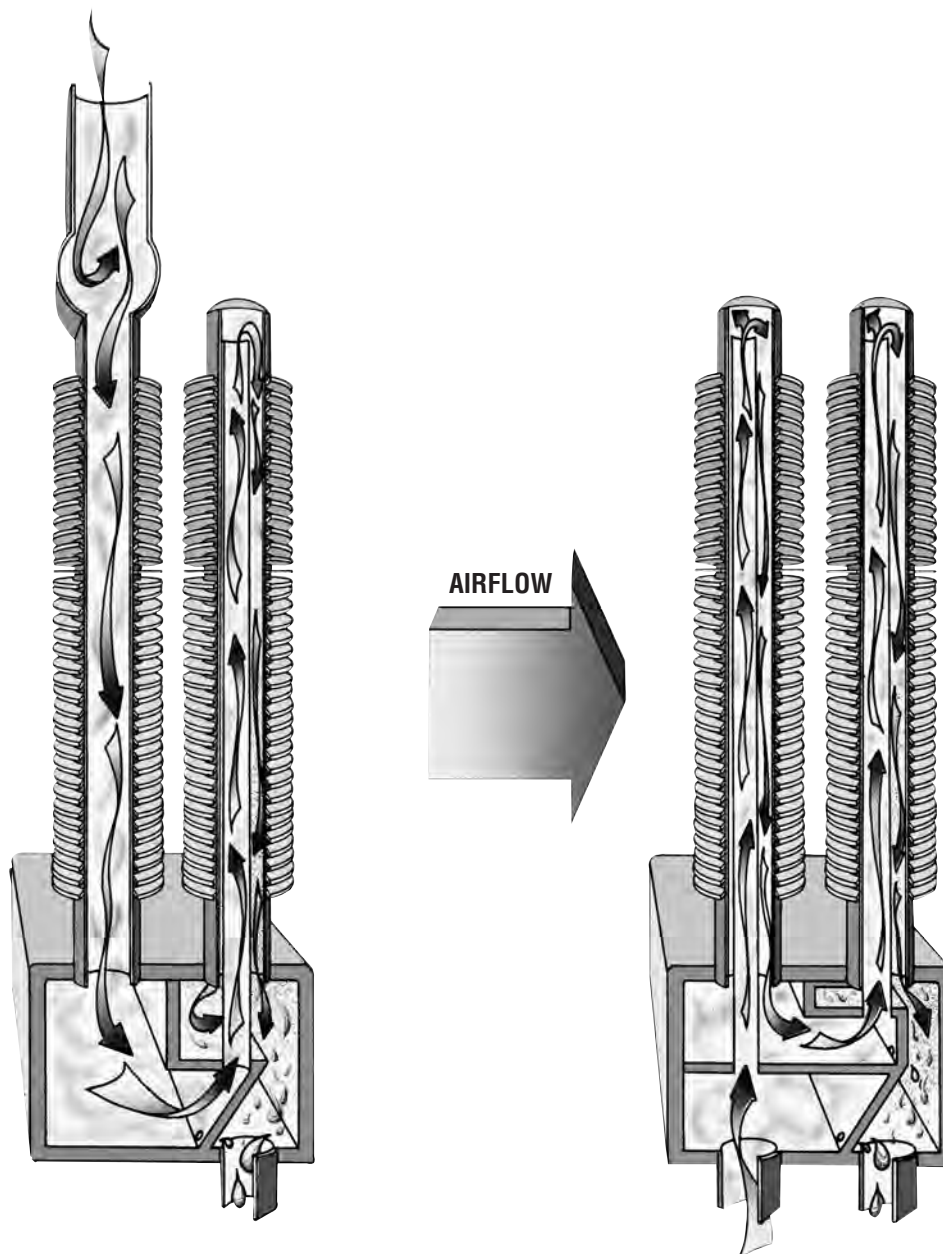
Tandem Coils (Types T and P)

Freezing applications requiring more than one row to achieve the desired final air temperature demand this type of coil.

The coil is designed so that the total amount of steam to be condensed by the whole coil is fed into the first row in the direction of airflow. This purges non-condensable gases and droplets of condensate from that part of the coil exposed to the coldest air. Channeling the steam from the header to the other rows in series has the same purging effect. This design ensures that air passing over the last row is at least 35°F.

The coldest part of the coil will always have steam in sufficient quantity to overcome unequal distribution and “backfeeding” due to differing steam loads and pressure drops in adjacent tubes. This eliminates freezing problems caused by condensate holdup.

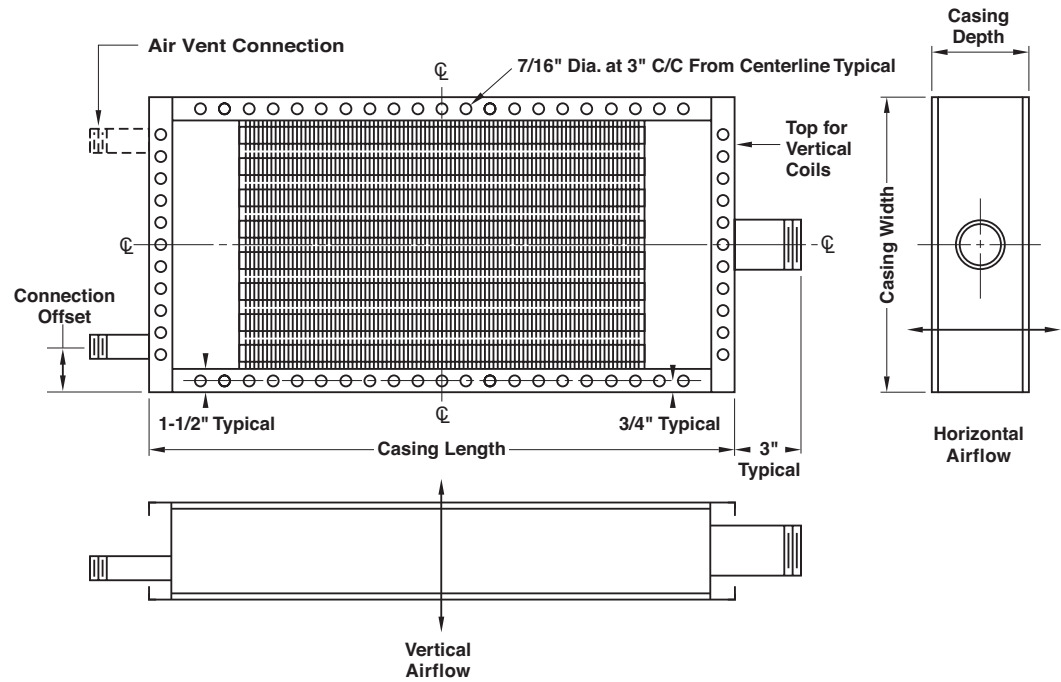
The “series” feed characteristic of the tandem coil, as opposed to the “parallel” feed of the two-row centrifuge coil, makes it the ideal choice for multi-row coils in freezing applications. If you want a stainless steel tube tandem, specify a P type.



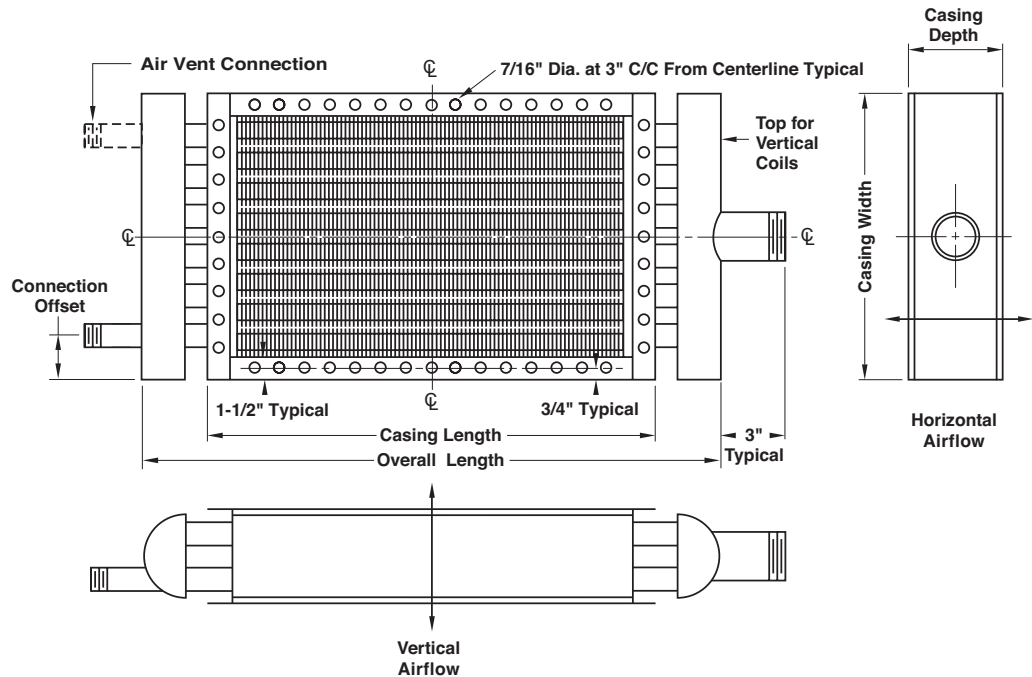
Type T coils have opposite-end connections.

Type P units have same-end connections.

- Standard Coils (Type S)
- Tandem Coils (Type T)
- For Vertical or Horizontal Airflow
- With Headers Inside the Casing



- Standard Coils (Type S)
- Tandem Coils (Type T)
- For Vertical or Horizontal Airflow
- With Headers Outside the Casing



NOTES:

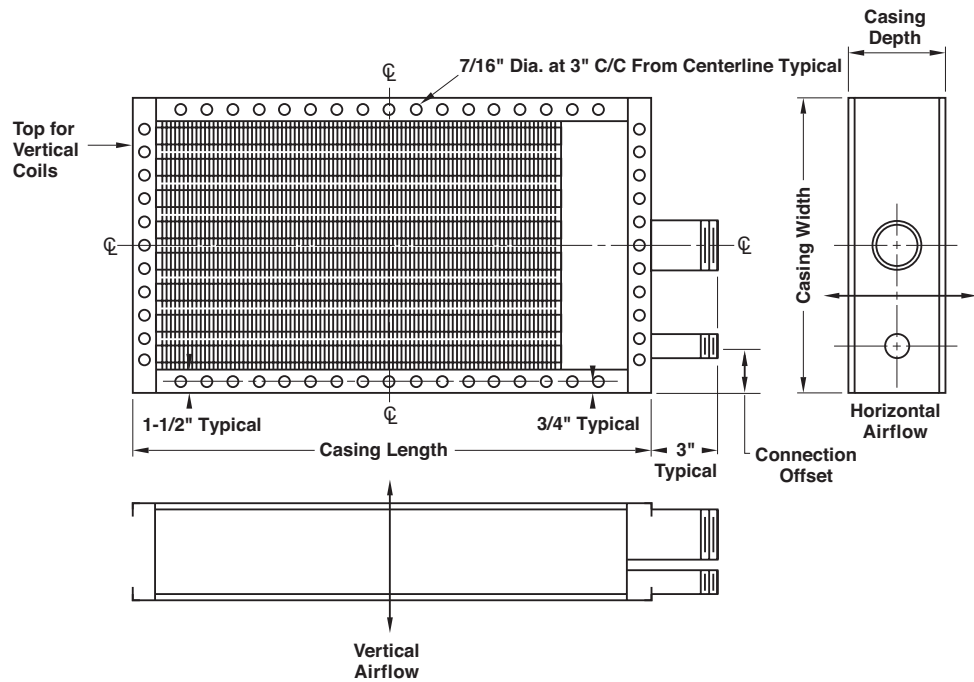
Always specify airflow directions and tube orientation when ordering coils.
 Specify all dimensions for replacement coils, especially those varying from typicals above.
 If coils are to be Tandem type, specify coil hand by facing the coil with airflow at your back and pointing to the condensate connection.

Minimum tandem casing depth is 7-1/2", contact factory for details.

Steam Coil Typical Arrangements

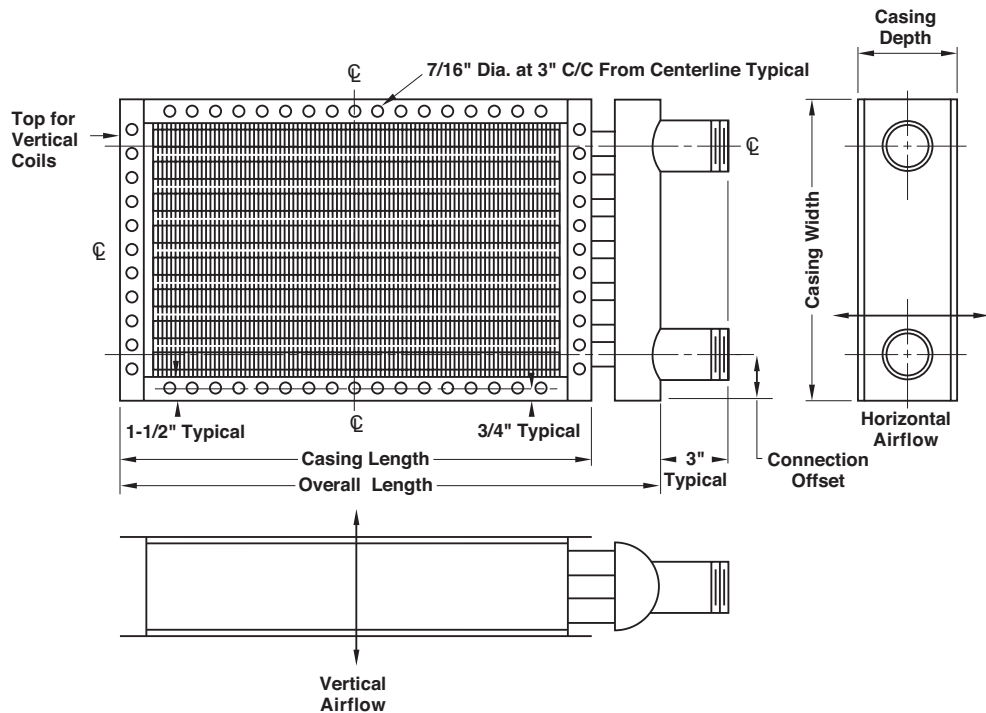


- Centifeed Coils (Type C)
- Centifeed Tandem Coils (Type P)
- For Vertical or Horizontal Airflow
- With Headers Inside the Casing



Heating and Cooling Coils

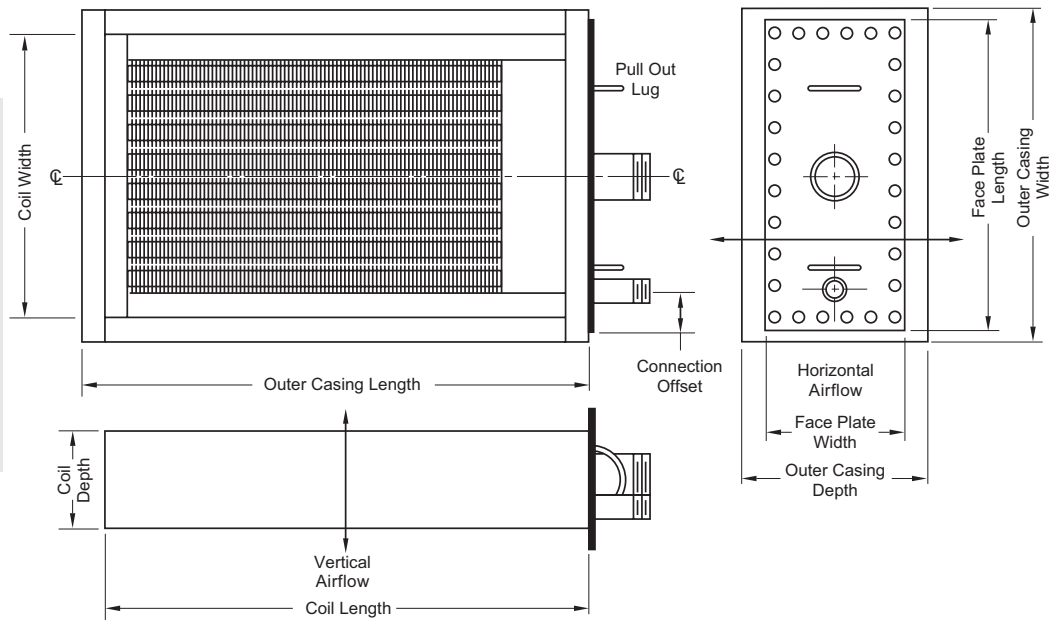
- Centifeed Coils (Type C)
- Centifeed Tandem Coils (Type P)
- For Vertical or Horizontal Airflow
- With Headers Outside the Casing



NOTES:

Always specify airflow directions and tube orientation when ordering coils.
 Specify all dimensions for replacement coils, especially those varying from typicals above.
 If coils are to be Tandem type, specify coil hand by facing the coil with airflow at your back and pointing to the condensate connection.

- Removable Coils
- Centifed Coils (Type C)
- Centifed Tandem Coils (Type P)
- For Vertical or Horizontal Airflow
- With Headers Inside the Casing



NOTES: Always specify airflow directions and tube orientation when ordering coils. Specify all dimensions for replacement coils, especially those varying from typicals above. If coils are to be Tandem type, specify coil hand by facing the coil with airflow at your back and pointing to the condensate connection. Removable coils can be designed for removal from either connection end or end opposite connections.



Removable coils with outer casing (removable from connections end configuration shown above).