

# **COIL INSTALLATION & APPLICATION**

## **GENERAL**

1. INSPECT COILS FOR DAMAGE. If damaged refuse shipment.
2. Remove coils from crating or packaging and inspect for damage. If concealed damage is found file a freight claim with the shipping company. Straighten any bent fins with appropriate fin comb.
3. Handle coils by the casing NEVER by the pipe connections or headers.
4. Piping should be in accordance with accepted industry standards and local codes.
5. Coil piping should be supported independently from the coil.
6. For coils with threaded connections a back up wrench is required on the stub out.

## **WATER COILS**

1. Hot water and chilled water coils must be accurately positioned for satisfactory operation; install level for proper free draining.
2. Cooling coils purchased without a pre-manufactured cabinet and drain pan must be provided with one. The cabinet should be insulated in a way to prevent condensation and to eliminate air from bypassing the coil's finned surface. The drain pan shall be sufficient for the rate of condensation and shall be of sufficient size to capture condensation from headers (or distributor tubes) and return bends. The drain pan shall extend a minimum of six inches beyond the leaving surface of the coils.
3. Provide adequate water treatment to protect the various components against corrosion, scale, slime, and algae. Water treatment should always be under the supervision of a water-conditioning specialist.
4. Where possible, on coils with 2 or more rows, coils should be piped with water supply to connection on air leaving side of coil and return to connection on air entering side. Connections are normally (but not always) arranged for water flow from bottom to top.
5. Coils must be vented of air (at a minimum) on initial start-up and each time the coil is drained. This can be manual, or an automatic air vent can be installed on the vent connection. If no vent is present on a coil (for coils with no headers, or

for other small HW coils), be sure to provide a vent in the line where air may collect.

6. Coils must be protected from freezing if applied where ambient temperatures are expected to go below 32 degrees Fahrenheit. This can be by draining, or the use of a suitable anti-freeze solution.
7. It is recommended that piping have shut-off valves and union fittings to facilitate coil removal, should repairs be necessary.
8. Inlet duct (if used) should be arranged to give equal airflow to the entire coil surface.

### **BOOSTER COILS (HEADERLESS)**

Booster coils are small coils with no headers. Coils can be flanged or slip and drive. See figure 1 and 2 for orientation and installation in the duct. Follow guidelines for water coils.

### **STEAM COILS**

1. Steam coils must have a trap on the condensate connection. Room must be provided to ensure trap is adequately sized. All coils in a bank must have their own steam trap sized to function based on the system design and operation.
2. The steam supply must have a vacuum breaker or vent to allow for free flow of steam and condensate.
3. See figure 3 for steam coil header arrangements.
4. See figure 4a for pitched casing and 4b un-pitched casing steam coils. Standard steam coils are to be installed level. Steam distributing coils should be pitched for condensate removal.

### **DIRECT EXPANSION COILS**

Coil will ship with a holding charge. If no charge is present pressurize coil and check for leaks. If coil has multiple circuits check that each circuit is labeled correctly by blowing nitrogen or air into each suction and check air is coming out the corresponding distributor.

## **MAINTAINING PLATE FINNED COIL**

One of the most common failures associated with plate fin coils is lack of routine maintenance. Since there are no moving parts many people neglect to service the systems on a regular basis. The only times the systems are checked are when a problem has occurred. Solutions For Industry, Inc recommends that you establish a maintenance routine and follow it accordingly.

1. The coil should be inspected on a monthly basis or more frequently, depending upon the system operation and duty ranges.
2. All coil types should be cleaned at least once a year. If they are located in a dirty corrosive environment, they should be cleaned on a monthly basis or as needed.
3. Do not use chemical solvents that will damage the materials or attack the brazed or welded joints. If black deposits are prevalent on any copper or brazed joint, beware of sulfur or other attacking chemicals in the area. Water and sulfur generate a very corrosive agent. If any type of chemical were in the atmosphere a coating would be a good option to consider.
4. Clean the tubes and fins by use of a high-powered vacuum, compressed air or a mild non-corrosive cleaner. Header and return bends should be cleaned with soap and water, which would allow you to check for any pinholes or cracks that may not be visible. High pressure spray should be avoided. If power spraying check a small area to verify pressure will not cause damage to the fins.

In order to keep your system running at peak performance do not neglect the need to maintain. A dirty coil can reduce your capacity 20 – 30% or more. This will also effect the rest of you systems components which could cause major failures and costly down time.