

## Coil Replacement - 10 More Helpful Hints

Below are 10 more helpful hints when replacing any existing coil. Some of these are just common sense hints, and some are things that we've learned over the years at USA because we've replaced tens of thousands of coils.

- (1) Some manufacturers standardize on 5/8" O.D. as their tube diameter for water coils, and other manufacturers standardize on 1/2" O.D. It doesn't really make a difference except that 1/2" coils are .017" thick and 5/8" coils are .020" thick. Since copper is purchased by the pound, there are less pounds of copper in a 1/2" coil than there is in a 5/8" coil. Usually 1/2" coils are about 12% cheaper for the same size coil, rows, fins, etc. than a similar 5/8" coil.
- (2) The performance for comparable 1/2" and 5/8" coils is approximately the same. How does this work? An example would be a coil that is 30" fin height x 96" fin length. 5/8" tubes are on 1 1/2" center-to-center distance, so in a 30" height there are 20 tubes/row. 1/2" tubes are 1 1/4" center to center distance, so in the same 30" fin height, there will be 24 tubes. Even though there is not as much tube surface in a 1/2" tube, there are more tubes per row. So the tube surface is almost equal. There are other minor changes in performance, but performance is not drastically different for 5/8" and 1/2" coils.
- (3) When replacing a coil, there is no such thing as "Right Hand/Left Hand" designation. You just walk around to the connection end of the coil and determine where the connections are located. They are either top right/bottom left or bottom right/top left or offset in the center. You're basically just matching up to an existing piping arrangement. This is not true for new coil applications. You must have a hand designation for any new coil.
- (4) When replacing a coil, a good "rule of thumb" is that smaller is always better than bigger. What do we mean by this? Well, if a coil is an inch short on the length or 1/2" short on the height, it will still fit in the unit. You might have some minor sheet metal sealing to do, but the coil still fits in the unit. If a coil is 1" too big, however, you have a real problem. If ever you have any doubt about a dimension of any kind, remember that shorter is always better than longer.
- (5) Connection sizes have nothing to do with performance. They are based solely on gallons/minute flow through the coil or pounds/hour of steam through the coil. You want to eliminate any artificial restriction at the entrance to the coil and of course you want a low-pressure drop through the coil. There is not really even a correlation between the piping and the coil connection size. The piping contractor will just transition to the proper coil connection size.

- (6) The first question that you need to ask when replacing a coil is, "How old is the existing coil?" If it's 25 years old, and it just died of old age, then all you want to do is duplicate the coil and slide the new one into the unit or duct in place of the old one. If the answer is 3 years old, then you obviously have a problem. No coil should fail in only 3 years. You don't want to duplicate the problem, so you have to become a problem solver and figure out a new way to build the coil.
- (7) The hardest part of duplicating any coil is matching up the connections. But there are many times when you don't even have to try. Often when a coil is very old, so is the piping. If you're going to replace a system, then you might as well replace piping, valves, and coils all at the same time. In these cases, you just want to get the connections in approximately the same place so the new piping is in about the same place also.
- (8) There are times, however, when connection locations must be matched as closely as possible. If there is 4" or 6" welded steel vertical piping coming off, then the connections better match up pretty closely. There is often not enough room for transitions.
- (9) New coils are clean and not dirty. In addition, the fin/tube bond is brand new and the coil is operating at close to 100% efficiency. When you replace any existing coil with a new coil, you will upgrade performance automatically and it will probably be a by a lot. Performance is usually not the problem for any replacement coil. Getting the dimensions right is probably going to be more difficult.
- (10) When replacing a coil, you do yourself a big favor by matching up dimensions as closely as possible. Everybody wants a quick delivery on any replacement coil, but what good does it do, if you have to rearrange an entire unit or repipe the building? USA has a Replacement Coil Catalogue, which is available to all USA customers that can help you easily replace coils. You can use it for any manufacturer's equipment, no matter if it's obsolete, old or not commercially available. USA has been doing this for over 20 years, and we're getting pretty good at it. Please call us at 800-872-2645 if you need any technical assistance, or if you need a copy of the USA Coil & Air "Coil Replacement" brochure.



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