



Technical Bulletin TB-028 Air-Cooled Heat Exchanger Fin Combing

Revision 0, 1/12/2018, Ross Putvin

Bent fins can block airflow through the coil. Combing the fins can help restore performance for your unit.



Illustration 1: Air-Cooled Heat Exchanger

Combing Bent Fins

The fins on the coil are constructed from very thin aluminum (usually less than 0.008" thick) to provide very efficient transfer of heat. This makes them easy to bend while handling (Illustration 2). Although the fin deformation may look bad, it is most often cosmetic and will not impact heat exchanger performance unless the fins are folded over and do not allow air to pass. The fins can be realigned using a properly sized fin comb.

SAFETY NOTE: The thin metal of the fins can cut through skin that is dragged along the surface. Take precautions and wear proper safety equipment, such as leather gloves, when working with finned coils.

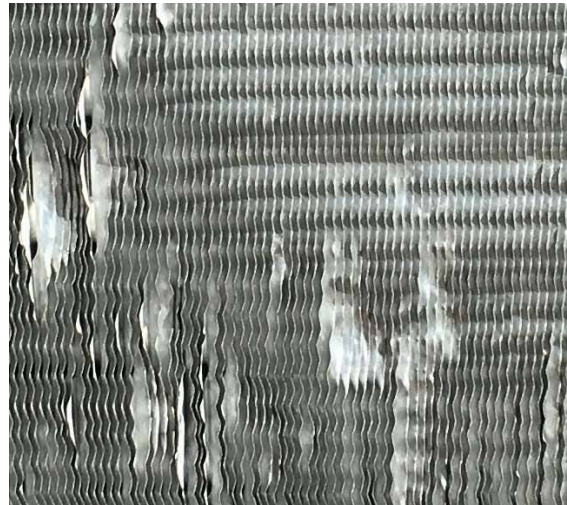


Illustration 2: Bent Fins on Heat Exchanger

Determine the Fin Density

The first step is to determine the fin density of the coil, measured in fins per inch (FPI) (Illustration 3). This information should be available with your unit documentation, but measuring the fins to verify is recommended. The most common fin density for Dry Coolers air-coolers is 10 FPI, although a few may be 8 or 12 FPI.

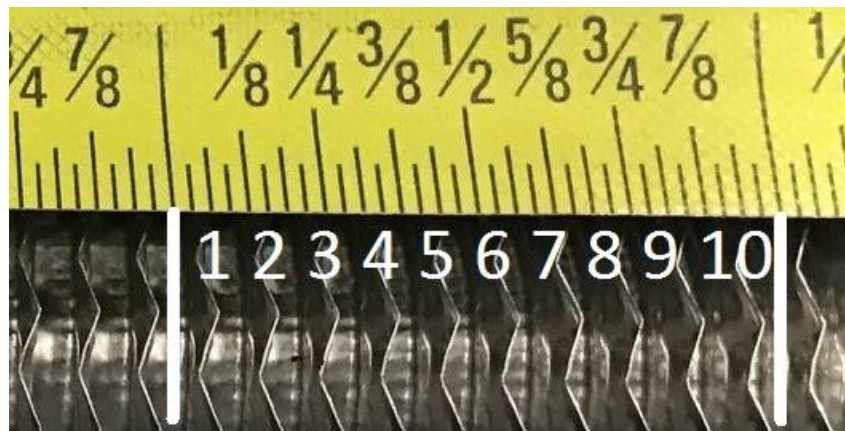


Illustration 3: Measure the Number of Fins in One Inch

Select the Correct Comb

Once the fin count is known, a fin comb of the correct spacing can be ordered from most industrial supply companies (Illustration 4):

WW Grainger: PN 2YJ76 Fin Comb Kit, 8 to 14 Fins per In.

McMaster-Carr: PN 1750K11 Fin Comb Kit, 8 to 14 Fins per In.



Illustration 4: Fin Comb with 10 FPI

Combing the Fins

To perform the repair, place the comb into the fins ahead of the damage spot (Illustration 5). Verify the comb fits the fins correctly. Pull the comb back to stand the fins up. Fins that are badly damaged may require work before combing to allow the comb to pass through. A small tool such as a dental pick can be used to lift badly damaged fins.



Illustration 5: Combing the Fins

RELATED BULLETINS:

- Technical Bulletin TB-002: Glycol Freeze and Burst Protection
- Technical Bulletin TB-009: Air Cooled Heat Exchanger Maintenance
- Technical Bulletin TB-027: Air Cooled Heat Exchanger Freeze Damage

REVISION LEVEL:

- Rev 0: 1/12/2018, Ross Putvin