Classic Radiator

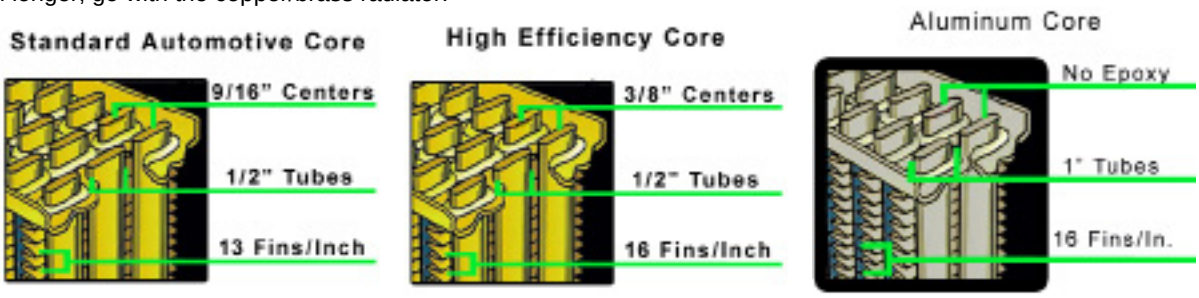
566 Fulton St (Rt 109) Farmingdale LI NY 11735

516-293-2175

Established 1982 Mon-Fri 8am-5pm & Alt Sat 8am-1pm

Aluminum vs. Copper/Brass Radiators

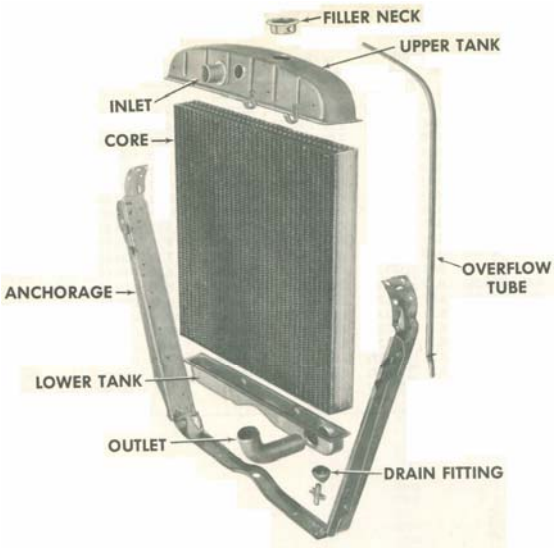
It's time to end the Aluminum vs. Copper/Brass debate. Aluminum does NOT cool better than copper/brass. If someone tells you that a 2-row aluminum radiator will out perform a 4-row copper/brass radiator you are only hearing part of the story. Core design is the key when it comes to performance cooling. A 1960's copper radiator core for example usually had ½" tubes with 9/16" tube spacing (i.e., 9/16" from centerline of one tube to the one next to it and a ½" wide fin between the tubes). A copper/brass radiator can be built with the tubes on these same centers or with 3/8" tube spacing like an aluminum radiator, a design referred to as ***High Efficiency*** in the industry. Aluminum radiators are able to use 1" or wider tubes creating much more surface area to dissipate heat. Therefore, an aluminum radiator with two rows of 1" tubes will produce the same temperature drop as a four row copper with four rows of ½" wide tubes from inlet to outlet assuming they have equal tube spacing and fins per inch. Fins per inch, tube spacing and tube size has more to do with radiators efficiency than whether it is made out of aluminum or copper. If weight or a polished aluminum look is your concern, go with the aluminum radiator. On the other hand, if you want something that is easy to repair, more like the OEM radiator and is going to last much longer, go with the copper/brass radiator.



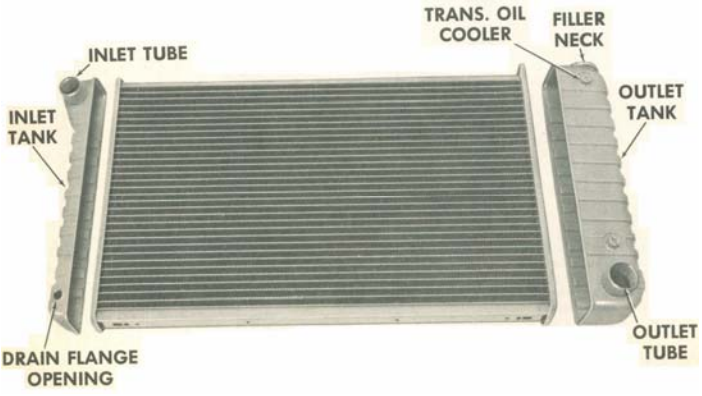
How to measure a radiator

The process of measuring a radiator is really quite simple. Measure only the core in order to determine the size of the radiator. Always measure the height with the tubes (the direction of the coolant flow). This would be top to bottom between the seams on a "downflow" radiator and right to left between the seams on a "crossflow" radiator. To determine the width, measure the core only. Do not include the side channels or mounting brackets.

To measure core thickness, use a small diameter wire (such as a paper clip) and insert it through the core until the end is flush with the other side. Hold the wire flush to the core with your thumb and forefinger, remove the wire and measure it. Length of the wire from thumb and forefinger to end will equal the core thickness.



DOWNFLOW RADIATOR

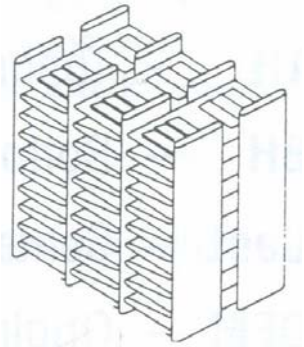


CROSSFLOW RADIATOR

Radiator Core Styles

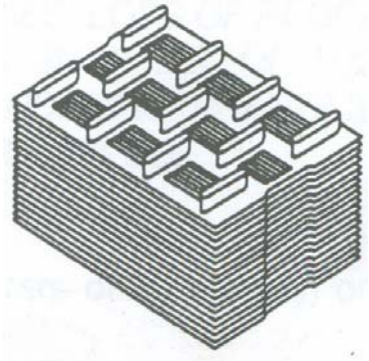
Serpentine Fin Style Core

Available in copper or aluminum in multiple patterns with different tube spacing, fin counts and tube sizes. Most common passenger car & light truck radiator core style from 1950's to current day. Tubes run from inlet header to outlet header. Can be seamless or lock seam design. Louvered fins are bonded to tube sides to ensure maximum heat transfer & to support tubes.



Flat Fin Style Core

Flat style fins run perpendicular to direction of tubes preventing core shifting under high pressure. Tubes run from inlet header to outlet header. Can be seamless or lock seam design. Fins can be louvered, dimpled or flat depending on intended use. Phased out for passenger car use in early 1950's but still used today in heavy duty and industrial applications.



Cellular Core

Also called "V cell" or "U cell" style core. This core style is made from two different thicknesses of copper material. .0045 is used for the tube walls and .0025 is used for the fins. Each piece starts out as flat material. It is formed into either tube walls or fins by being pulled through a series of dies & rollers. Was phased out in the late 1950's for use in radiators but still used for heater cores until the 1980's.