NRF WEEKLY TECHNICAL POST

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Technical specialist

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ngine cooling basics >

When an engine is in use, it produces a lot of friction and heat from combustion. Temperatures may increase to more than 1,500 °C. The parts of engine that are subjected to such temperatures must be effectively cooled to prevent overheating. The cooling system not only coolers the engine, but also works as part of the emissions system. If the engine temperature is too low, fuel economy will suffer and a rise in emissions. The engine cooling system keeps the engine at a constant temperature. An essential part of the cooling system is radiator.

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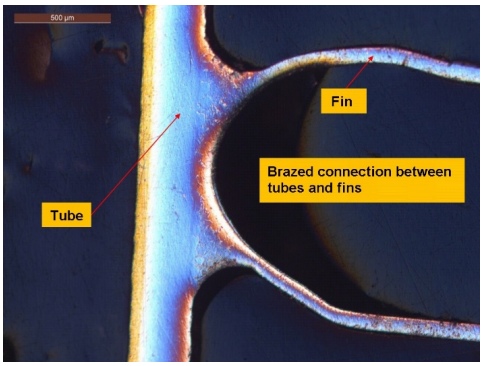
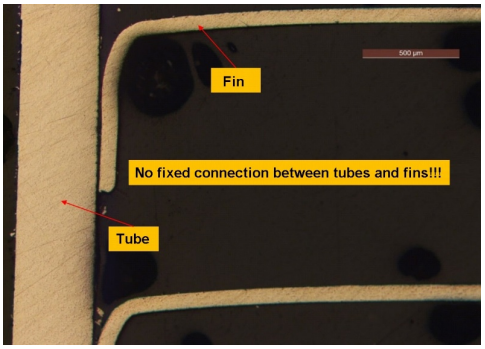
the fins and tubes are brazed in an oven. This creates a metal connection. Due to this brazed connection an optimal heat transfer is being created. The tubes of this type of radiator are often flattened. This creates a larger cooling surface. NRF radiators are soldered according the Nocolok® brazing technology.

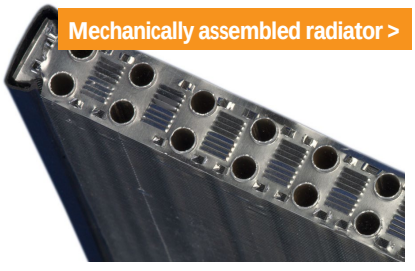
Mechanically assembled radiator >

The difference with a brazed one is the cost and energy saving production method, because these radiators are not soldered. The tubes are always round. These round tubes are inserted throughout the fins pack. There always will be a tiny gap between the tubes and fins. This automatically results in a much lower (up to 60%!) heat transfer compared with a brazed radiator





At NRF we test our radiators to make sure they are at least 95% of cooling efficiency matched against the OE radiator.



> roduct test against -sample
> itment ore and more asy it re erences
> ooling capacity c ec ed y own wind-tunnel test
> uality y dura ility test ermal pressure cycle

> Cooling capacity is our main criteria