TOP SECRET

MISHIMOTO
RESEARCH & DEVELOPMENT

MISHIMOTO TECHNICAL SPECS

Subject: Hyundai Genesis V6 Radiator

Test Vehicle

2010 Hyundai Genesis (3.8L) V6
- High-flow exhaust
- High-flow intake

Installation Difficulty

Apparatus

For hardware Mishimoto used the PLX sensor modulus driven by the Kiwi WiFi plus IMFD. This is a wireless system from the sensor modules to an iPad or laptop computer. The software used was the Palmer Performance Scan XL pro, which has full data logging capabilities.

DO NOT COPY

MISHIMOTO

RESEARCH & DEVELOPMENT

Experiment

Mishimoto engineers tested both the Mishimoto radiator versus the stock radiator in constant conditions. The car was first heat soaked by letting it sit parked at idle for 20 minutes. This allowed the inlet and outlet temperatures to equal each other. Once the radiator was well heat soaked, we tested it on the highway with constant load at 60 mph. Fluid temperatures were taken from both the inlet and outlet of the radiator using in-line coolant hose sensor adapters. Ambient temperatures were also recorded and averaged about 82° F. Special attention was given to the space between the Genesis and the car in front of it, to ensure that fresh air was flowing into the radiator.

Results

Figure 1.1 shows a large decrease in temperatures of the coolant when exiting the Mishimoto radiator. Notice the initial point at around 210° F, which is the heat-soaked point for idling. The temperatures in both radiators decreased rapidly, because now the radiator is receiving 60 mph airflow through the core. Since the Mishimoto unit is much thicker and has dense fins, it was able to cool the air more rapidly and at a higher level. The lowest temperature difference between the two was about 50° F, under the same conditions.

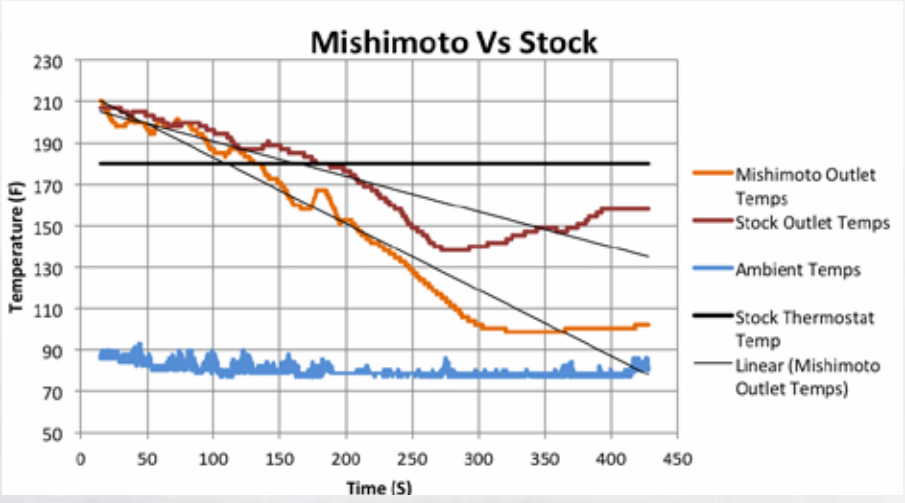

Figure 1.1

MISHIMOTO
RESEARCH & DEVELOPMENT

The stock thermostat is set at 180° F. Inlet temperatures were about 190-210°F, so a constant flow of coolant was being introduced into the cooling system. The Mishimoto unit started to cycle with the thermostat at around 300 seconds, whereas the stock radiator unit took 400 seconds. In figure 1.1, once both radiators reached equilibrium, the graph was ended.

Figure 2.1 graphs the efficiency of the radiator with respect to time on the highway. The Mishimoto unit is as much as 50% more efficient than the stock radiator under these conditions.

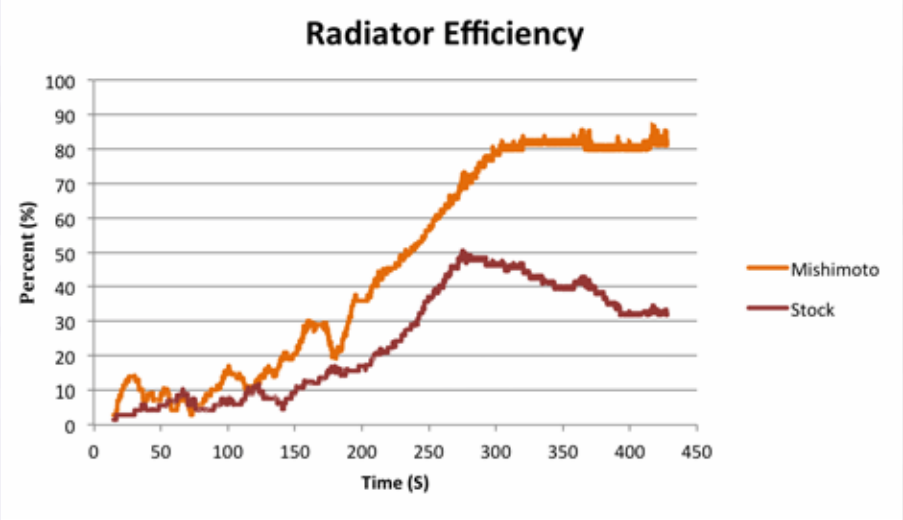

Figure 2.1

Summary

The stock radiator is capable of supporting a stock engine under normal operating conditions. However, with engine modifications or under track conditions, the stock radiator will not be able to combat the heat. The Mishimoto unit is a direct bolt-on replacement and offers up to 50% more efficiency than the stock unit.

Kevin McCardle
Product Engineer, Mishimoto Automotive