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97-04 Ford Mustang GT Radiator

**MISHIMOTO ENGINEERING REPORT**

**Testing of the 1997-2004 Ford Mustang GT Radiator**

**Test Vehicle**

2000 Ford Mustang GT

**Objective**

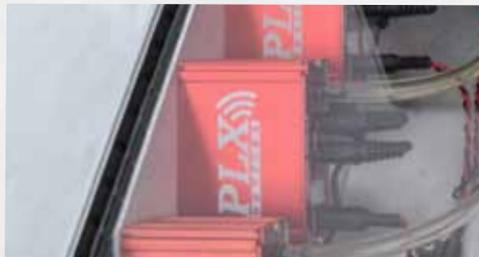
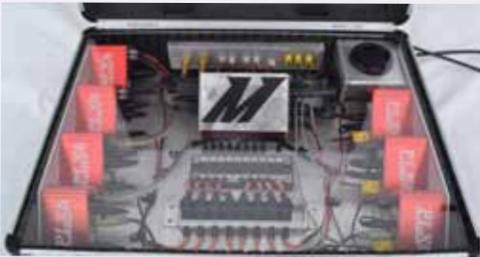
To make a radiator that fits directly into the 1997-2004 Ford Mustang GT. The radiator must perform well enough for the track but still be efficient for street conditions.

**Testing conditions**

Testing took place on a cool autumn day. Temperature range: 64-66°F.

**Apparatus**

For hardware Mishimoto chose the PLX sensor modules 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.



Fluid temperatures were taken with PLX temperature sensors from both the inlet and outlet of the radiators. The OEM radiator was tested first to obtain a baseline reading. This allowed us to see how well the Mishimoto radiator performed over the stock unit.

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Figure 1: Palmer Performance Scan XL software was used to record testing data.



Figure 2: PLX sensors were attached to the vehicle to obtain inlet and outlet temperatures from the radiator

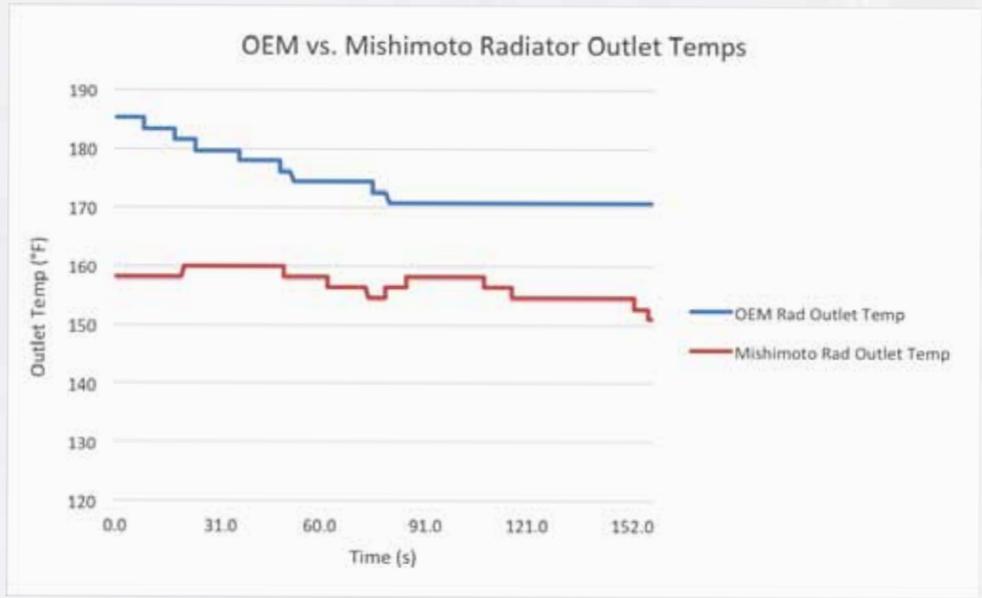
## Experiment

The test compares the cooling capacity of the factory radiator versus the larger, all-aluminum Mishimoto radiator. To conduct the test we first let the car idle until it became heat soaked. Next, we drove the Mustang on a highway at approximately 65 mph and cruised for approximately five miles. Special attention was given to the space between the Mustang and the car in front of it to ensure that fresh air was flowing into the radiator.

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Once the vehicle reached steady state conditions, the OEM radiator showed an average outlet temperature of approximately 175°F. The Mishimoto radiator was then installed and tested under the same conditions. The outlet temperature of the Mishimoto unit averaged approximately 157°F. The maximum temperature drop recorded between the OEM unit and the Mishimoto radiator was 19.7°F. Figure 3 below shows the testing data.



**Figure 3:** The average outlet temperature of the Mishimoto radiator was approximately 157°F. The average outlet temperature of the stock unit was approximately 175°F.

This test was performed on a cool autumn day, so even greater temperature drops would be expected on hot summer days and under track conditions. This would occur because the OEM unit has a greater tendency to become heat soaked. This experiment is 100% repeatable when the test is conducted under similar conditions.

Once the on-road testing was completed, both radiators were weighed with and without fluid to determine the coolant capacity. The Mishimoto radiator had a 65% greater coolant capacity than the stock unit.



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**Summary**

The testing results show that the Mishimoto radiator works well to reduce radiator temperatures even on cool days. When testing the vehicle on a hot day or while driving hard on a track, we would likely find a larger variation between the outlet temperatures of the OEM and Mishimoto radiators. The all-aluminum Mishimoto radiator will keep the engine cooler by dispersing heat more quickly and effectively. It fits directly into the Mustang without the need to move or modify the ABS module, making it an excellent upgrade for the 1997-2004 Mustang GT.

A handwritten signature in black ink, appearing to read "Steve Wiley".

Steve Wiley  
Product Engineer, Mishimoto Automotive