

TOP SECRET

MISHIMOTO
RESEARCH & DEVELOPMENT

MISHIMOTO TECHNICAL SPECS

Subject: Nissan 350Z and Infiniti G35 Direct-Fit Oil Cooler Kit

Test Vehicle

2003 Infiniti G35

Installation Difficulty



Objective

To make an oil cooler kit that directly bolts onto the 2003-2009 Nissan 350Z and 2003-2007 Infiniti G35 and is robust enough for the track, but still safe for street conditions.

Testing Conditions

Testing took place on a humid day. Temperature range: 80-86°F.

Apparatus

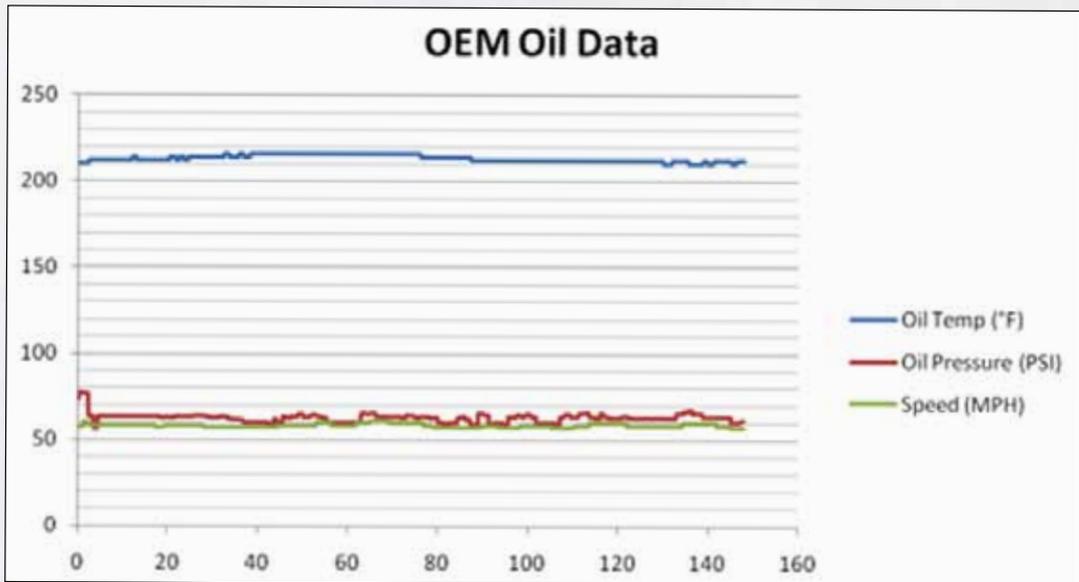
For hardware Mishimoto chose the PLX sensor modules driven by the Kiwi WiFi plus iMFD. This is a wireless system from the sensor modules to an iPad or laptop computer. The software used was the Palmer Performance Scan XL pro, which has full data logging capabilities.



**DO NOT
COPY**



RESEARCH & DEVELOPMENT



Fluid temperatures were taken from both the inlet and outlet of the 19-row oil cooler equipped with a Mishimoto oil sandwich plate with PLX fluid temperature sensors. Oil pressure was also tested to ensure that no dramatic pressure drop occurs when installing the oil cooler.



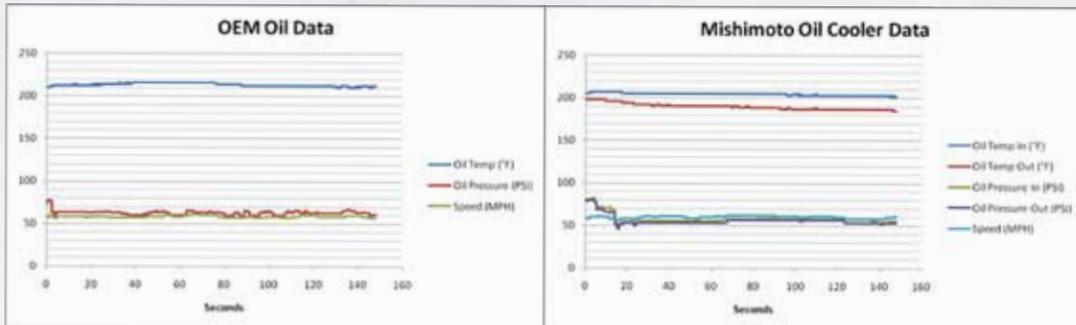
MISHIMOTO

RESEARCH & DEVELOPMENT

A thermocouple was mounted in the front grill with no obstructions so as to measure ambient air temperature.

Experiment

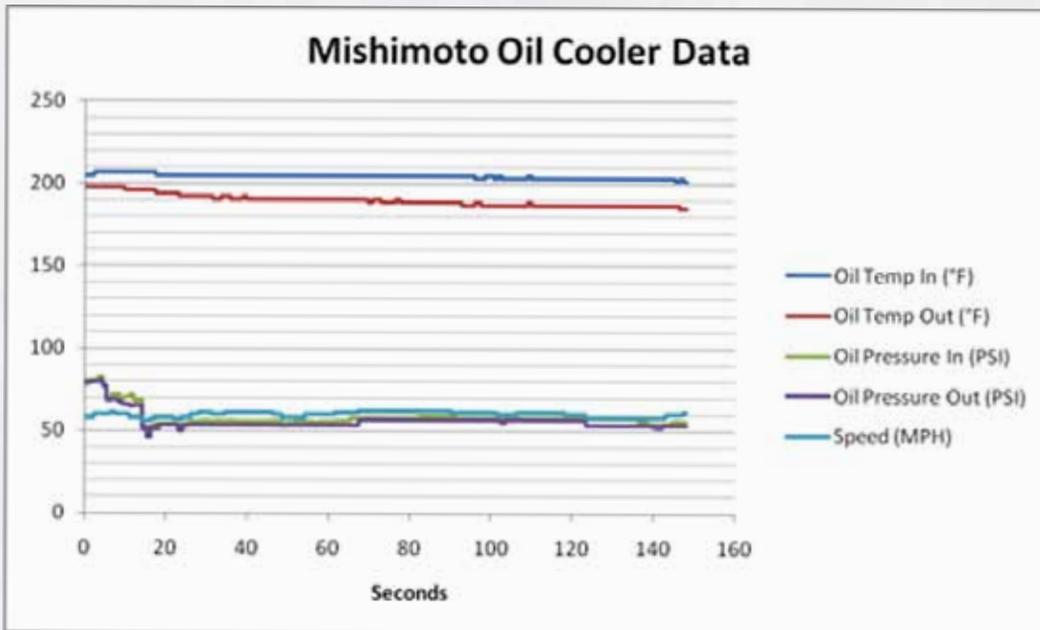
The test compares the oil temperatures of the OEM oil cooler and the Mishimoto 19-row direct-fit oil cooler. Both setups were tested until they reached steady-state conditions. To conduct the test we first let the car idle until it became heat soaked. Next, we drove the G35 on a highway at approximately 60mph and cruised for approximately five miles. Special attention was given to the space between the G35 and the car in front of it to ensure that fresh air was flowing into the oil cooler. This experiment is 100% repeatable when the test is conducted under similar weather conditions.



Compared with the stock setup in the first graph, the second graph shows that the Mishimoto oil cooler loses only 2-3 psi of pressure.



RESEARCH & DEVELOPMENT



At cruising speeds, the oil temperatures entering the cooler are around 200-210°F. The graph above shows that, under cruising conditions, the Mishimoto oil cooler reduced temperatures by approximately 25° on average over stock.

Summary

The testing results show that the Mishimoto oil cooler works well to reduce temperatures while losing only a few psi of pressure. Under more harsh driving conditions the inlet temperatures to the cooler will increase, resulting in an even greater difference between inlet and outlet temperatures.

Dan Tafe
Product Engineer, Mishimoto Automotive