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Subject: Testing of Nissan 370Z/G37 Oil Cooler

Objective

Make an oil-cooler kit that directly bolts onto the 370Z and G37 and is able to work with all application specific Mishimoto products. Develop an oil cooler kit that is robust enough for the track, but still safe for street conditions.

Oil temperature issues are very well known among the 370Z community. There are many online threads regarding this issue. Nissan Nismo has even developed its own kit to remedy overheating problems. If the oil temperatures reach above 280°F, the vehicle goes into "Limp Mode."

Apparatus

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

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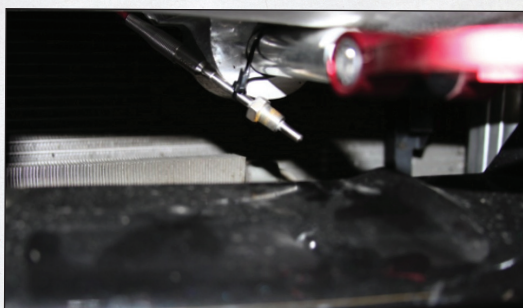


Fluid temperatures were taken from both the inlet and outlet of the 19-row oil cooler using a Mishimoto oil sandwich plate with PLX fluid temperature sensors. Oil pressure was also tested to ensure no dramatic pressure drop occurs when installing the large oil cooler.



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A thermocouple was used to measure ambient air temperature for the test. The location chosen was in the front grill with no obstructions.

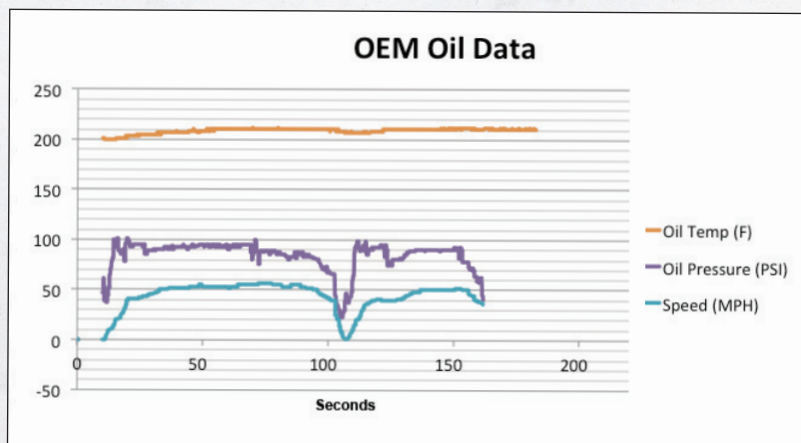
Testing Conditions

Dry mild day with temperatures ranging from 63° to 72°F.

Experiment

The test compares the OEM oil temperatures vs. the Mishimoto 19-row direct fit oil cooler. To conduct the test we drove the Nissan on a highway at approximately 50mph and cruised for approximately five miles. Special attention was given to the space between the 370Z and the car in front of it to ensure that fresh air was flowing into the oil cooler.

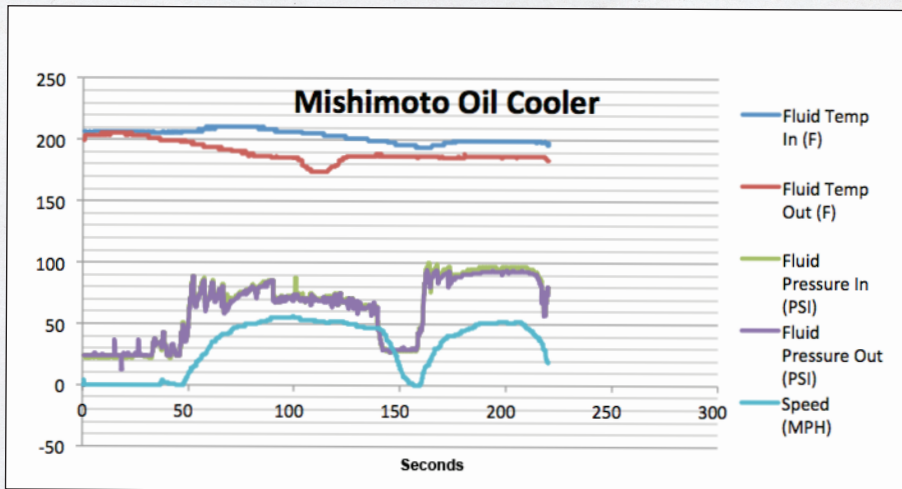
Graph 1



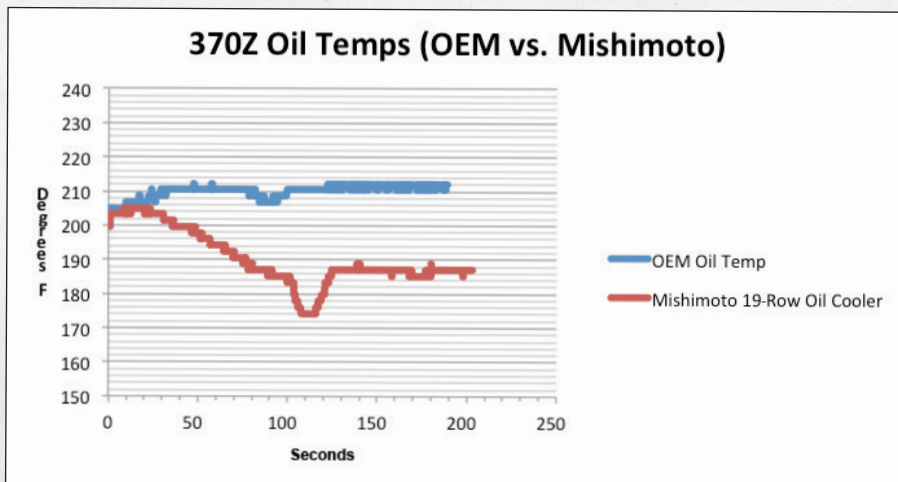
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Graph 2



Graph 3





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Summary

The graphs above show that the Mishimoto oil cooler works great. Not only does it reduce temperatures, but it also loses only a few psi of pressure by adding the kit. The second graph shows that the Mishimoto oil cooler loses only 2-4 psi of pressure compared with the stock setup. In the last graph you can see that the Mishimoto oil cooler was able to reduce temperatures by more than 30° with an average of approximately 25° over stock. Finally, this test was conducted at cruising speeds, so one would expect even greater temperature differences when driving on a track.

Note for G37 Owners

Since the 370Z and G37 share the same engine, one would expect similar test results for the G37. However, the G37 would most likely show slightly less of a drop in oil temperature because of its more restrictive front bumper, which allows less air to reach the oil cooler.

A handwritten signature in black ink, appearing to read "Kevin McCardle".

Kevin McCardle
Product Engineer, Mishimoto Automotive