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MISHIMOTO ENGINEERING REPORT

Testing the 2011+ Ford 6.7L Powerstroke Radiator



Test Vehicle:

2011 Ford F-350 King Ranch

Modifications:

Aftermarket air intake, aftermarket exhaust, tune by Innovative Diesel Performance

Apparatus:

For hardware Mishimoto chose 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.

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Testing conditions:

Outside temperature ranged from 68°F to 72°F (20°C to 22°C).



Figure 1: Coolant temperatures were taken at both the inlet and outlet of the radiators using PLX fluid temperature sensors.



Figure 2: Temperature sensors were placed in the upper and lower radiator hoses before the hose connections.



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Figure 3: Mishimoto radiator installed.

Experiment:

The test compares the temperatures of the factory radiator and the Mishimoto radiator. To conduct the test we drove the truck on a highway at 65 mph and cruised for approximately 10 miles. Special attention was given to the space of the car in front of the truck to ensure that fresh air was flowing into the radiator. This experiment is 100% repeatable when the test is conducted under similar weather conditions.

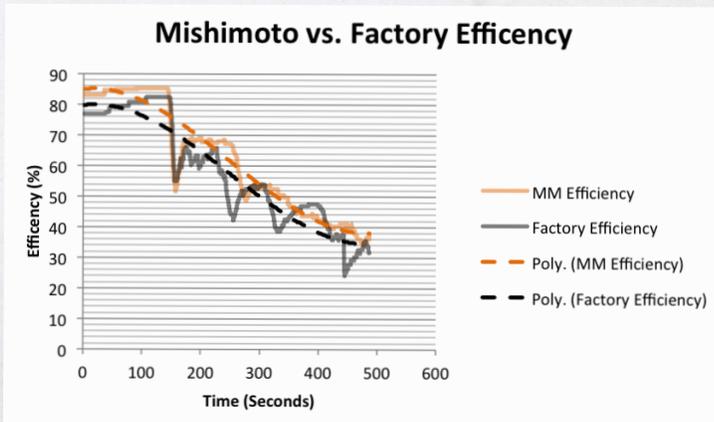


Figure 4: The Mishimoto radiator shows a 5% average increase over factory.

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Figure 4 above shows that the Mishimoto radiator maintained a 5% average increase in efficiency over the factory radiator throughout the lengthy road test. This increase is due to the Mishimoto radiators' increased core thickness, core volume, coolant capacity, fin area, and tube area. The charts in Figures 5-9 below show the increases in these parameters for the Mishimoto radiator compared to the factory radiator.

Core Thickness

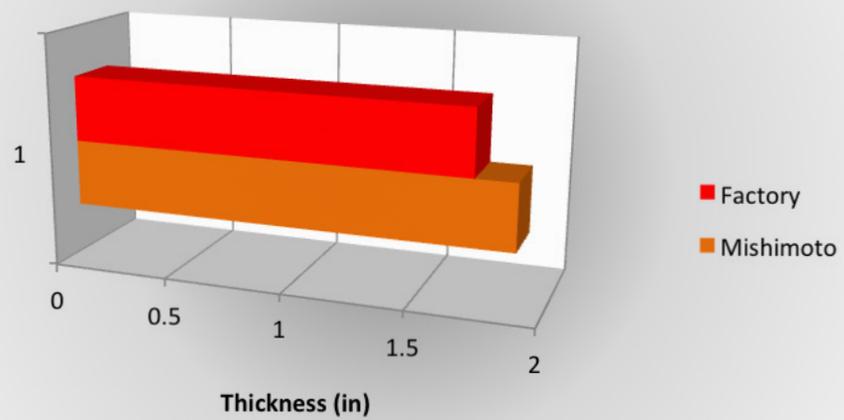


Figure 5: The Mishimoto radiator is 10% thicker than the factory radiator.

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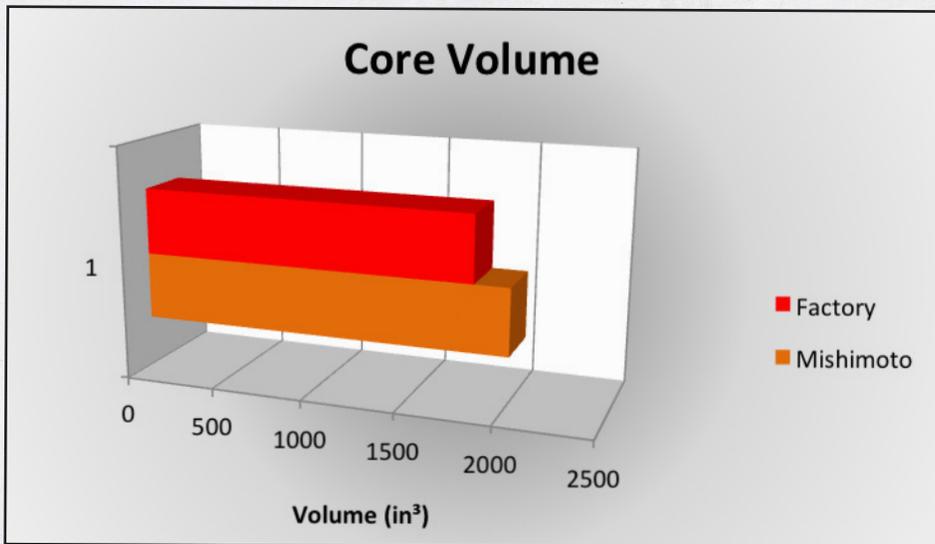


Figure 6: The Mishimoto radiator has an increased core volume of 10% over the factory radiator.

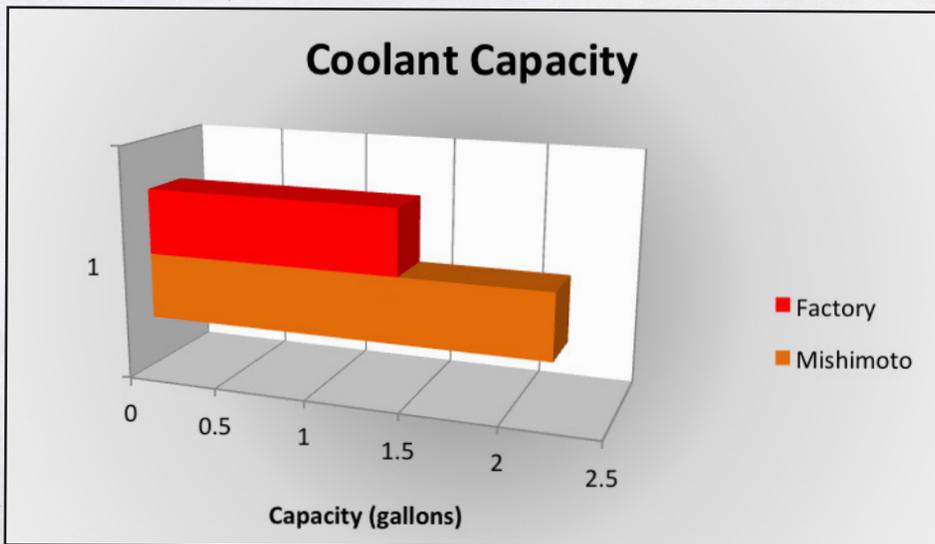


Figure 7: The Mishimoto radiator has an increased coolant capacity of 37% over the factory radiator.

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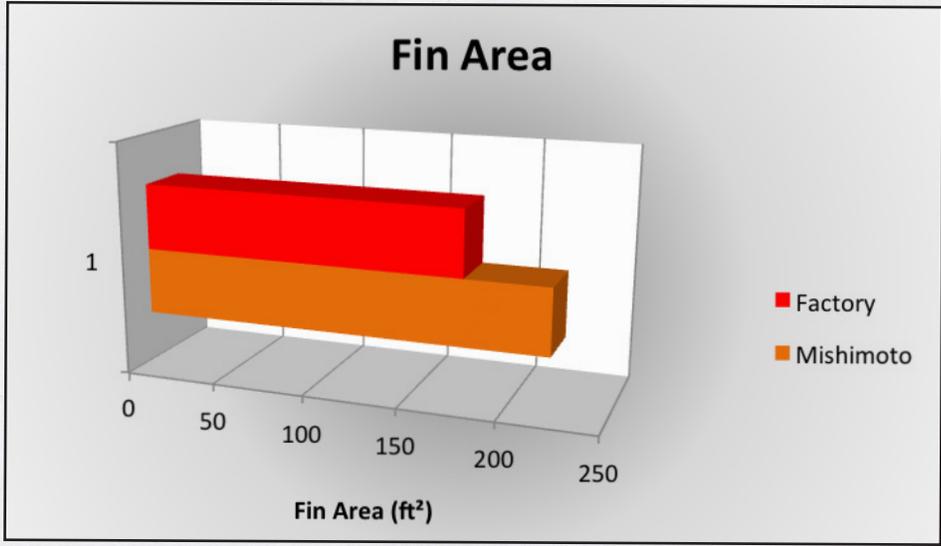


Figure 8: The Mishimoto radiator has a 20% increase in fin area over the factory radiator.

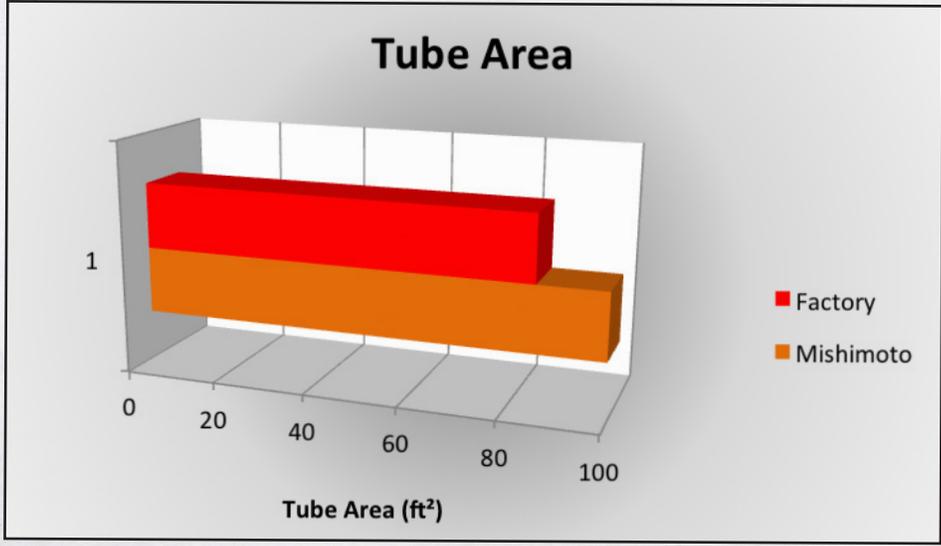


Figure 9: The Mishimoto radiator has a 15% increase in tube area over the factory radiator.

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Conclusions:

From the data shown above we have concluded that the Mishimoto radiator is more efficient than the factory radiator and will help keep the 2011+ Ford 6.7L Powerstroke engine cool under harsh driving conditions. With its 10% increase in core thickness and 37% increase in coolant capacity over the factory radiator, the Mishimoto radiator is ideal for anyone looking to increase the cooling efficiency of their 2011+ Ford Powerstroke.



Daniel Tafe
Product Engineer

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