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Ride Hard. Run Cool.®

AMSOIL SYNTHETIC MOTORCYCLE OIL  
 EXTREME DYNAMOMETER HEAT TESTING



## V-Twins Get Hot

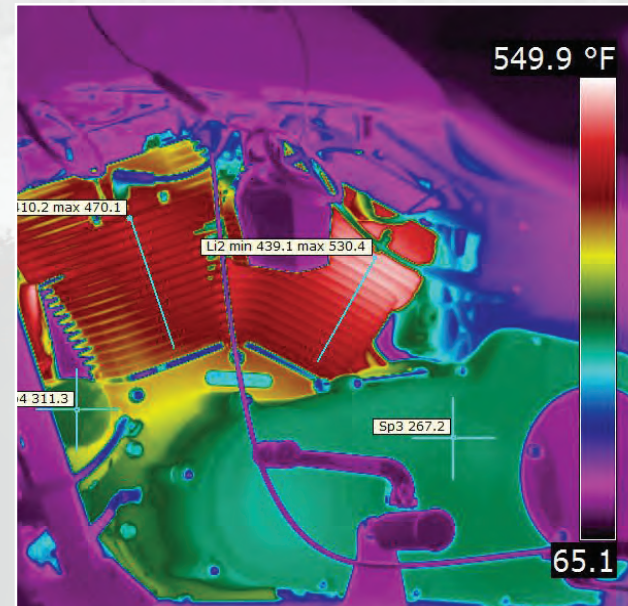
Harley-Davidsons\* and other bikes with big V-twin engines generate significant heat, especially in low-speed parades, in rally traffic or on long climbs on hot days. Motor oil plays a critical role in cooling these big air-cooled engines, and even more so in low-speed operation with limited wind generated to cool the bike. If the oil can't withstand the heat, its ability to protect your bike is compromised.

## AMSOIL Synthetic Motorcycle Oil Protects in Extreme Heat

To demonstrate its extreme-heat protection qualities, AMSOIL 20W-50 Synthetic V-Twin Motorcycle Oil was subjected to a dynamometer test designed to simulate conditions even more extreme than the demanding stop-and-go driving conditions of a motorcycle rally or parade route.

A 2012 Harley-Davidson FXDB Dyna Street Bob\* motorcycle equipped with AMSOIL 20W-50 Synthetic V-Twin Motorcycle Oil was subjected to a strenuous low-speed test cycle, with significant idle time broken by short bursts of engine revving and little to no air moving across the cylinders. Like most Harley-Davidson motorcycles, the Dyna Street Bob features an air-cooled V-twin engine, which relies on cooling fins arrayed along the cylinder walls to conduct heat away. To create the most-severe operating conditions possible, the electronic temperature controls, which safeguard the motorcycle when temperatures reach dangerous levels, were deactivated. The combination of low airflow and inoperative temperature controls allowed the test lab to subject the oil and engine components to intense heat not normally experienced in the real

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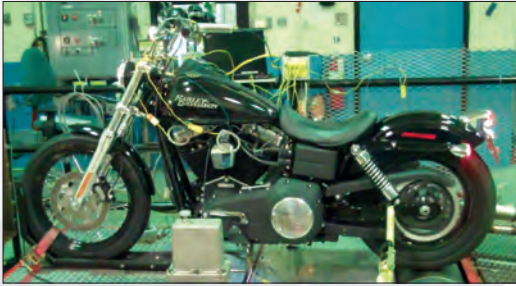
As temperatures climbed to more than 500°F in the cylinders, an infrared camera revealed the red-hot conditions that assaulted the engine components and oil.

world. Cylinder temperatures reached more than 500°F, and oil temperatures exceeded 300°F – temperatures well into the range where oils begin to break down and often lead to catastrophic failure.

## 500°F is No Problem

The extreme temperatures were no match for AMSOIL Synthetic Motorcycle Oil. After nearly 70 minutes of torturous testing and heat exposure, oil analysis revealed no change in oil viscosity and only minor levels of oxidation, TBN depletion and wear (see graphs on reverse).





## Dyno Test Results

Not only did AMSOIL Synthetic Motorcycle Oil prevent the engine from overheating and seizing during the extreme dyno test, it did so without losing chemical integrity or ability to protect vulnerable engine components. This stands as further proof that AMSOIL Synthetic Motorcycle Oil provides outstanding protection in even the most compromising and severe high-temperature riding and idling conditions, providing peace of mind that your air-cooled V-twin is protected even in low speeds on hot days.

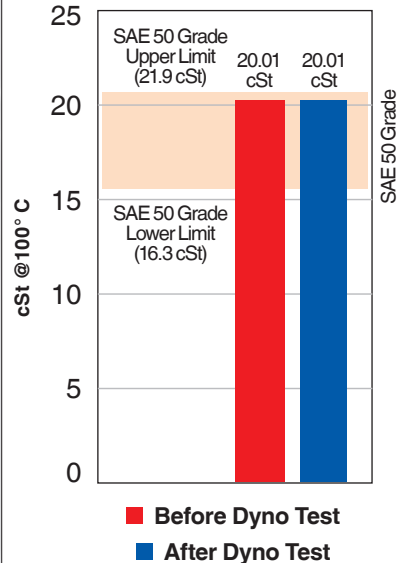
**Your bike should never get this hot. If it does, AMSOIL has you covered.**



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## Viscosity

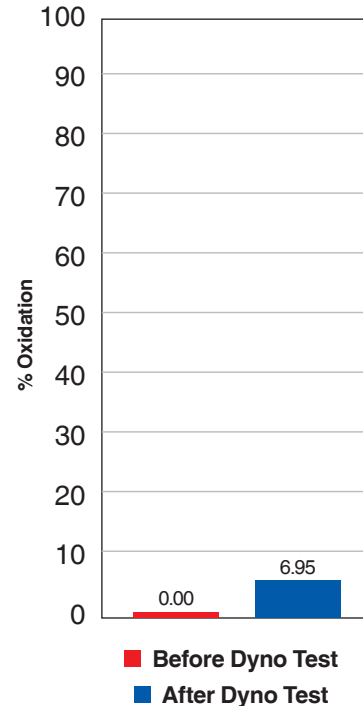
As heat breaks oil down, the viscosity typically rises until it is significantly out of grade and must be changed. AMSOIL 20W-50 Synthetic V-Twin Motorcycle Oil showed no change in viscosity following the extreme-temperature test, demonstrating its **outstanding resistance to thermal breakdown and its ability to provide excellent protection in the most severe conditions.**



*As tested by an independent lab in February 2012.*

## Oxidation

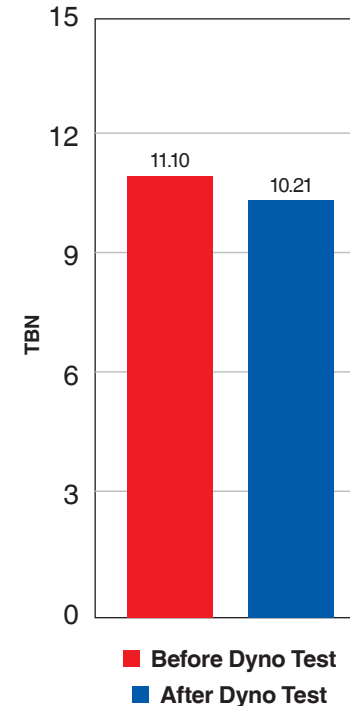
AMSOIL 20W-50 Synthetic V-Twin Motorcycle Oil demonstrated outstanding oxidation resistance, allowing it to control deposits and keep motorcycle engines clean and operating at peak efficiency.



*As tested by an independent lab in February 2012.*

## TBN

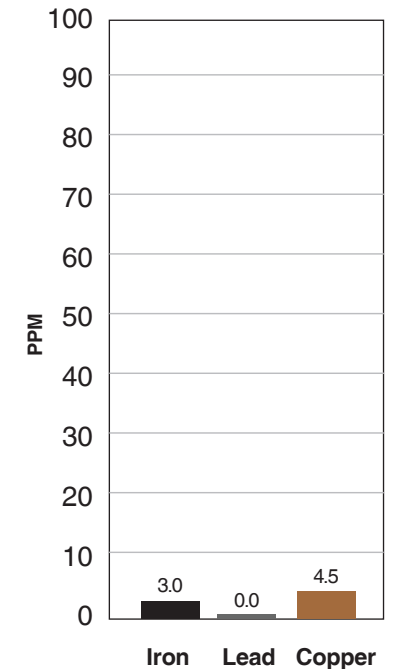
AMSOIL 20W-50 Synthetic V-Twin Motorcycle Oil successfully maintained its Total Base Number (TBN), allowing it to effectively combat corrosive acids.



*As tested by an independent lab in February 2012.*

## Wear Metals

AMSOIL 20W-50 V-Twin Synthetic Motorcycle Oil demonstrated outstanding wear protection throughout the extreme-temperature test, with oil analysis results showing only trace levels of wear metals.



*As tested by an independent lab in February 2012.*