



CASE STUDY **1605A**

# INCREASING HORSEPOWER & FUEL ECONOMY

A STUDY OF THE EFFECTIVENESS OF DIESEL FUEL ADDITIVES  
IN TODAY'S DIESEL ENGINES

TEST SUBJECT	 <b>CHEVROLET DURAMAX</b>	2015 CHEVROLET 2500HD 6.6L DURAMAX
PRODUCT TESTED		HSS <b>DIESEL EXTREME</b>



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SPECIALTIES INC

*Where Innovation Lives*

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## OVERVIEW

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Lubrication Specialties, Inc. performed a real-world study on the effectiveness of fuel additives in today's diesel engines. This evaluation was performed on a 2015 Chevrolet 2500HD equipped with the 6.6L Duramax engine and six speed automatic transmission. The test vehicle was also equipped with the 6.6 ft. length cargo bed and a wheel base of 153.7 inches. The test vehicle's odometer displayed 27,500 miles at the start of the evaluation. Both the baseline and trial tests initially started with a full tank of diesel fuel from the same fuel station (fuel

tank capacity of 36 gallons of diesel fuel). The truck was in two-wheel drive



mode for the duration of the study, with the air conditioning turned off. All tests conducted in this study were performed under the same test conditions. Fuel economy results were collected over the same distance of approximately 20 miles on Interstate 71 North, once for the baseline test and once for the product test. Baseline test and product test results for 0-60 miles-per-hour acceleration times and estimated horsepower calculations were collected over three stretches of Interstate 71 South.



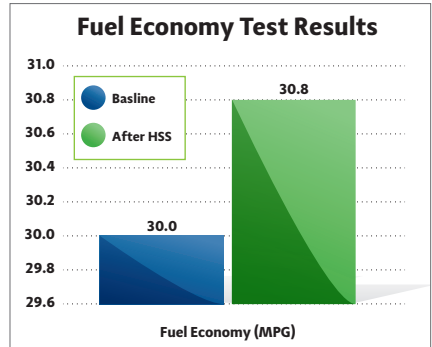
The test results were obtained using the truck's fuel economy gauge and verified with a OBDII adapter synced with the application Torque Pro using a Samsung Galaxy Tab 2 tablet. The Torque Pro application was used to determine 0-60 mile-per-hour acceleration times and calculate horsepower estimations using the accelerometer sensor. Once baseline data had been gathered, Hot Shot's Secret DIESEL EXTREME was added to the truck's fuel tank at the dosage recommendation stated on the product label. Once added, each of the three tests were repeated under conditions as similar as the environment allowed to determine the effectiveness of the fuel additive in the test vehicle. The following report highlights the results from each of the tests performed.

## TEST CONDITIONS

- Date: May 18, 2016
- Weather conditions: Clear
- Temperature: 63°F
- Humidity: 52%
- Barometer: 30.11 inches Hg
- Wind: NE, 8.078 miles-per-hour average
- Location: central Ohio (Interstate 71)

■ 2015 Chevrolet 2500HD  
6.6L Duramax

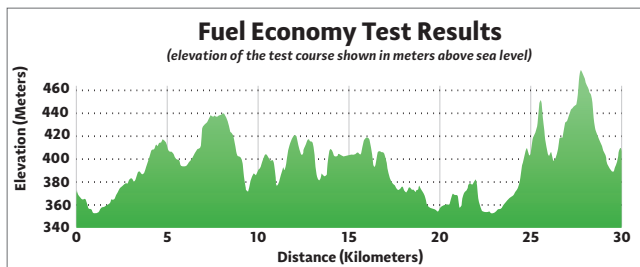
The fuel economy tests were measured over a 20 miles (32.1869 kilometers) of Interstate 71 North. Below is a graph of elevation of the test course shown in meters above sea level. The



**baseline test and product test started and ended from the same points. Both fuel economy tests were subject to the same course in the rightmost lane from start to finish.**

BASELINE	
Start	I-71 N mile marker 148.0
Finish	I-71 N mile marker 168.0
Distance	20 miles
Average Speed	20:04 minutes
Test Time	60 MPH

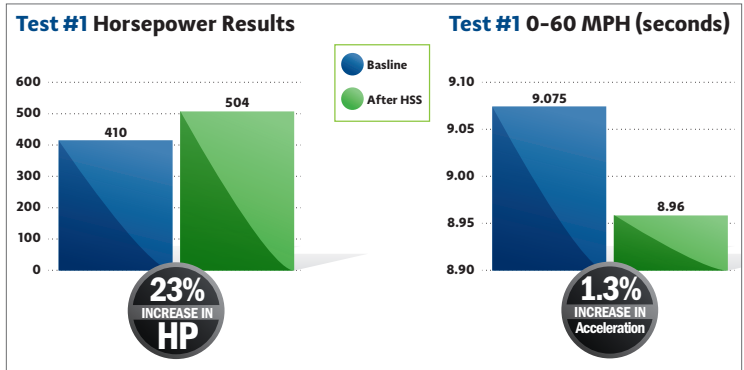
AFTER HOT SHOT'S SECRET	
Start	I-71 N mile marker 148.0
Finish	I-71 N mile marker 168.0
Distance	20 miles
Average Speed	20:04 minutes
Test Time	60 MPH



## TEST #1

### I-71 SOUTH EXIT 165 – EXIT 151

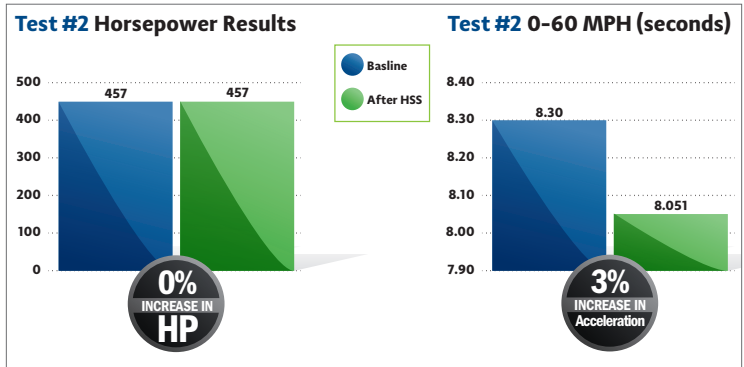
This test proved to yield an estimated 23% increase in horsepower and acceleration was 1.3% faster from 0-60 miles-per-hour after adding 11 oz of Hot Shot's Secret DIESEL EXTREME to the fuel tank.



## TEST #2

### I-71 SOUTH EXIT 151 – EXIT 130

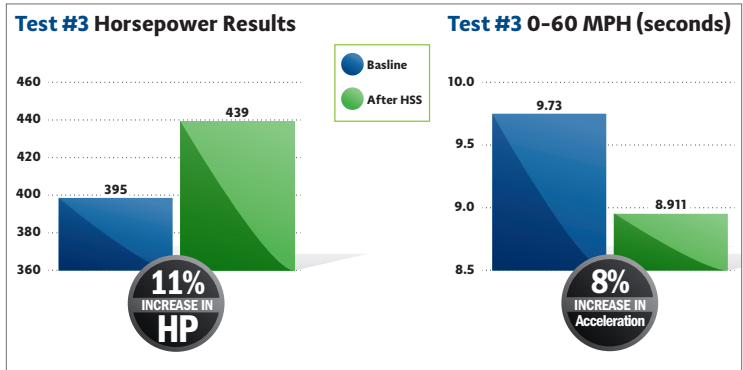
This test proved to yield an estimated zero percent increase in horsepower and acceleration was 3% faster from 0-60 miles-per-hour after adding 11 oz of Hot Shot's Secret DIESEL EXTREME to the fuel tank.



## TEST #3

### I-71 EXIT SOUTH 130 – EXIT 112

This test proved to yield an estimated 11% increase in horsepower and acceleration was 8% faster from 0-60 miles-per-hour after adding 11 oz of Hot Shot’s Secret DIESEL EXTREME to the fuel tank.



## WHY IT WORKS

Hot Shot’s Secret DIESEL EXTREME uses a concentrated cetane improver as well as a highly effective fuel stability package. Improving the cetane levels within the fuel provides a smoother, less erratic pressure buildup in the combustion chamber during the ignition delay period, which occurs between injection and ignition. Power and fuel economy is increased as the fuel burns more cleanly and evenly.

## CONCLUSION

Hot Shot’s Secret DIESEL EXTREME provided improvements to the truck’s horsepower and fuel economy based on results gathered from the OBDII adapter and Torque Pro application. By comparing each of the three tests, it is evident that the most substantial improvements were made to the truck’s horsepower ratings.

## WHAT WE DON'T KNOW ABOUT THESE RESULTS

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At Lubrication Specialties, Inc., additional testing is being performed in an attempt to discover answers to the following topics:

- Whether or not improvements would increase after using DIESEL EXTREME for a longer period of time.
- How long it will take for the numbers to return to baseline levels?
- Is a vehicle's age directly correlated with the effectiveness of DIESEL EXTREME?
- Would the fuel economy test show similar results if the distance of the course was lengthened?
- Whether or not DIESEL EXTREME would have better or worse fuel economy gains when the truck is towing or under heavy loads.
- Why Test #2 had no increase or decrease in horsepower results.
- Can we recreate these results on a more accurate dynamometer?
- What was the quality of the diesel fuel that was purchased (i.e. how old was the fuel, what was the cetane rating, was there water in the fuel, etc.)?
- If an exact weight was taken from a vehicle weight scale (i.e. weighbridge) would our results be similar?

Please note these horsepower figures are displayed as estimated calculations. Uncontrollable variances in accelerometer sensor readings could degrade the accuracy of these readings. The instructions from the device and application manufacturer were strictly followed throughout each evaluation to provide the most accurate data possible. The weight of the test vehicle was approximated from the manufacturer's specifications with the addition of optional features from the manufacturer taken into account; an inexact weight might have also degraded the accuracy of this evaluation.

**Note:** *The data and results shown in this evaluation are not meant to be a product effectiveness guarantee. Hot Shot's Secret products offer a satisfaction guarantee which reimburses the consumer for the cost of the product if product expectations are not met. Other users or consumers may find results greater or lesser than the results published in this document. Results may vary from case to case.*



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Lubrication Specialties, Inc. began in 1997 and since the development of Hot Shot's Secret Stiction Eliminator in 2004 has continued to solve issues for the largest companies across the country. Dedicated to producing the most concentrated and effective solutions on the market, third party testers and our own in-house chemists constantly reevaluate our products. Lubrication Specialties, Inc. is a proud member of the Better Business Bureau.

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