




CASE STUDY **1703A**

INCREASING HORSEPOWER & TORQUE

EVALUATION OF HOT SHOT'S SECRET FR3
IN A SERIES OF THIRD PARTY DYNAMOMETER TESTS

THIRD PARTY		FIREPUNK DIESEL IN PLAIN CITY, OHIO
TEST SUBJECT A		2016 DODGE 3500 6.7L CUMMINS
TEST SUBJECT B		2007 DODGE 2500 6.7L CUMMINS
PRODUCT TESTED		HSS FR3 FRICION REDUCER



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OVERVIEW

Lubrication Specialties, Inc. initiated third party dynamometer testing through Firepunk Diesel in Plain City, Ohio on March 2, 2017. The horsepower and torque effects of two industry-leading oil additives were evaluated through the following series of dynamometer tests. Hot Shot’s Secret FR3 FRICTION REDUCER was tested against another industry-leading oil additive (competitor X).



This evaluation utilized a DynoTech chassis dynamometer to determine the results of the tested products on separate trucks. All testing was completed on the same day, by the same driver, with the truck remaining on the dynamometer for the duration of its test. All results shown in this document were collected and reported by the third party Firepunk Diesel. Test trucks included a 2016 Ram 3500 with the 6.7L Cummins engine and a 2007 Dodge Ram 2500 equipped with the 6.7L Cummins. Each test truck was equipped with an after-market tuner with two tunes for each truck: a manufacturer default tune and a performance tune.

The 2016 Ram 3500 was subject to a series of ten baseline dynamometer tests, five for each tune to establish a baseline average.

The first tune was set to the manufacturer's specifications; the second tune used was a high-performance tune. After initial baseline averages were established for each tune, competitor X's oil additive was added to the engine oil system at the ratio recommended on the product's label. After 30 minutes of idling while on the dynamometer to disperse product, ten product trial tests were completed, five for each tune.



The 2007 Dodge Ram 2500 was also subject to a series of ten baseline dynamometer tests, five for each tune to establish a baseline average. The first tune was set to the manufacturer's specifications; the second tune used was a high-performance tune. After initial baseline averages were established for each tune, Hot Shot's Secret FR3 FRICTION REDUCER was added to the engine oil system at the ratio recommended on the product's label. After 30 minutes of idling while on the dynamometer to disperse product, ten product trial tests were completed, five tests for each tune.

TEST #1 – COMPETITOR X OIL ADDITIVE

The 2016 Ram 3500 completed five baseline dynamometer tests with the original tune, with an average of the tests displaying 349.44 horsepower and 654.4 ft/lbs of torque.

The Ram 3500 then completed five baseline tests with the performance tune, with an average of 428.42 horsepower and 873.9 ft/lbs of torque from the five tests.

Competitor X's oil additive was added through the oil fill cap of the 6.7L Cummins at the dosage recommended on the product's label. The truck was then started and the engine was idled for 30 minutes. The test vehicle remained stationary on the dynamometer to preserve baseline accuracy.



The Ram 3500's computer was set back to the factory tune and five tests were completed. The average for these five tests measured 353.48 horsepower with no measurable effects to the vehicle's torque. This equates to a 1.1% increase in horsepower using the factory tune.



Next, the factory tune was replaced with the performance tune and five more tests were completed with an average of 430.28

horsepower and 874.72 ft/lbs of torque. This equates to a .04% increase in horsepower using the performance tune. Horsepower results for Test #1 are shown below.

COMPETITOR X RESULTS

Stock Tune Baseline (Horsepower)	Stock Tune with Competitor X (Horsepower)
342.5	359.3
349.1	349.4
350.6	353.9
350.3	352.8
354.7	352.0
Average 349.44	353.48 (4.04 HP increase)

+4.04
INCREASE IN
HP
Competitor X **1.1%**
BEFORE: 349.44 AFTER: 353.48

Performance Tune Baseline (Horsepower)	Performance Tune with Competitor X (Horsepower)
424.8	427.3
426.1	429.0
427.6	431.8
431.5	431.8
432.1	431.5
Average 428.42	430.38 (1.86 HP increase)

TEST #2 – HOT SHOT’S SECRET FR3 FRICTION REDUCER

The 2007 Dodge Ram 2500 completed five baseline dynamometer tests with the original tune, with an average of the tests displaying 331.02 horsepower and 634.77 ft/lbs of torque.

The Dodge Ram 2500 then completed five baseline tests with the performance tune, with an average of 460.94 horsepower and 875.68 ft/lbs of torque from the five tests.

The Hot Shot’s Secret FR3 FRICTION REDUCER oil additive was added through the oil fill cap of the 6.7L Cummins at the dosage recommended on the product’s label. The truck was then started and the engine was idled for 30 minutes. The test vehicle remained stationary on the dynamometer to preserve baseline accuracy.

The Dodge Ram 2500’s computer was set back to the factory tune and an additional five tests were completed. The average for these five tests measured 345.97 horsepower and 652.7 ft/lbs of torque. This equates to a 4.3% increase in horsepower with the factory tune.

Next, the factory tune was replaced with the performance tune and five more tests were completed with an average of 478.44 horsepower and 901.5 ft/lbs of torque. This equates to a 3.7% increase in horsepower using the performance tune.

HOT SHOT’S SECRET FR3 RESULTS

Stock Tune Baseline (Horsepower)	Stock Tune with FR3 (Horsepower)
332.8	346.6
333.4	347.4
331.0	346.2
326.8	343.8
Average 331.0	346.0 (15.0 HP increase)

Performance Tune Baseline (Horsepower)		Performance Tune with FR3 (Horsepower)
461.4		476.6
459.2		482.9
459.9		475.8
461.9		478.7
462.3		478.2
Average 460.94		478.44 (17.5 HP increase)

Test Results Table 1: The above table Displays that with FR3 and a performance tune, there was an increase of 17.5 horsepower. It also displays an increase of 14.95 horsepower on a manufacturer set tune.

WHY IT WORKS

Hot Shot’s Secret FR3 FRICTION REDUCER utilizes patented carbon nano particles to fill in microscopic irregularities on the machined surfaces in an engine. FR3 can affect power output of an engine with

its ability to restore the compression of an engine’s combustion chamber and increase the efficiency of an engine by reducing friction. FR3 smooths engine surfaces to provide an optimal surface for the host oil and FR3 formula to form a superior lubricating film. The synergy of FR3’s components and

its advanced synthetic PAO/ester base allow it to improve the host oil’s performance in shear stability, oxidation stability, film strength and wear reduction.

“
**HOT SHOT’S SECRET
 FR3 FRICTION REDUCER
 INCREASED HORSEPOWER
 BY 17.5 HP AND TORQUE
 BY 25.82 FT/LBS.**
 ”

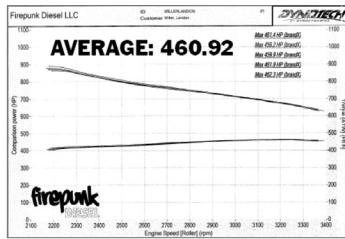
CONCLUSION

Between the two evaluated products tested with separate 6.7L Cummins engines, the Hot Shot’s Secret FR3 FRICTION REDUCER was determined to be more effective for increasing horsepower and torque.

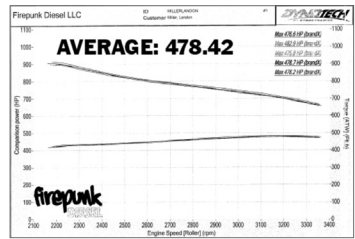
Hot Shot's Secret FR3 FRICTION REDUCER increased horsepower by 14.95 and increased torque by 17.93 ft/lbs while the truck utilized the factory tune.

Hot Shot's Secret FR3 FRICTION REDUCER increased horsepower by

PERFORMANCE TUNE BASELINE



PERFORMANCE TUNE WITH FR3



17.5 and increased torque by 25.82 ft/lbs while the truck utilized the performance tune. Below are the corresponding dynamometer results of the performance tune test provided by Firepunk Diesel.

WHAT WE DON'T KNOW ABOUT THESE RESULTS

Further testing will need to be completed to answer the following questions:

- How long will the results be seen for either product?
- Does power continue to be increased after running the engine for a longer period of time, or will power plateau or decrease?
- Can we recreate these results on another brand or model of dynamometer?
- What were the fuel economy effects of either product?
- How were the output of emissions effected?
- Exactly how long the products must be inside a running engine to see peak performance?
- How do these results compare to the results of using a gasoline application?
- Would results be similar if the competitor X's additive had been tested in the 2007 Dodge Ram 2500 and Hot Shot's Secret had been tested in the 2016 Ram 3500?
- Would results be comparable to this evaluation's results if both trucks were the same model year?



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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