



November 20, 2008

New SUPR Aluminum Spec Motor vs. Old SUPR Steel Motor

The following information is to try and clear up any misconceptions about the all new aluminum SUPR motor and the SUPR steel block motor that has been around since 1993. SUPR has worked diligently in trying to make late model racing as affordable as possible. SUPR has never had rules that kept you from racing \$35,000 motors against a \$16,000 motor or whatever you could afford to race, nothing has changed.

In late 2007 I set out to develop a new all aluminum SUPR spec engine with one thing in mind, and that's not to obsolete any engine the racer had, but when he needed a new engine he would get much more for the dollar he spends. I consulted with major engine builders and parts suppliers that build or supply engine components for SUPR engines in our area and they are as follows:

- ❖ Wall 2 Wall Performance Race Engines – Ronnie Rogers
- ❖ Keith Craft Inc. – Keith Craft
- ❖ Jay Dickens Racing Engines – Jay Dickens
- ❖ Tony Barker Racing Engines – Tony Barker
- ❖ Kuntz & Company – Jim Kuntz (2008 SUPR Engine Builder of the Year)
- ❖ David Burkhalter
- ❖ Donald Watson
- ❖ Bob Christopher – PBM Performance Parts
- ❖ Dave Rodeman – Brodix

I would like to thank all of the above for their input. When I use a name of an engine builder or racer it's only for reference for you the racer to relate the facts to. I have found it hard to compare dyno and torque figures from one engine builders dyno to another's because they all are not the same.

I would like to say a special thanks to Ronnie Rogers for helping me show you the most accurate test for comparing the old SUPR engine to the new SUPR engine and Ford vs. Chevrolet. Keep in mind just because you have a lower dyno figure from another engine builder doesn't mean you can't win races or that your engine isn't just as good as the figures I'm showing you. I learned along time ago what's on dyno figures don't always feel good to the racer. In the last few years Ronnie Rogers and Chris Wall have had exceptional results in showing you can take a SUPR motor and be competitive with the open competition engines and the touring professionals. David Ashley proved the same thing with a Jay Dickens motor, with this being said we will use Ronnie Rogers and Chris Wall engines for the benchmark for the new aluminum Chevrolet and Ford SUPR motors for comparing to.

The following tests were all done on gas and were almost done within one month of each other. Dates will show on Dyno pulls. The figures shown are for 5800 – 6800RPMs. Average torque and horse power on that pull.

David Burkhalter New Aluminum SUPR motor 1<sup>st</sup> Engine Built

-08	Average Torque – 489 Average Horse Power – 587	4/25 Installed in Chris Walls' car for Golden Triangle Speedway leading race when asked to leave track with broke front end
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Chris Wall's Steel SUPR motor

9-23-08	Average Torque – 500 Average Horse Power – 600	9/27 Chris Wall wins Magnolia State 100
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Ronny Lee Hollingsworth

9-23-08	Average Torque -485 Average Horse Power - 587	10/18 Cottin Pickin 100 – 3 <sup>rd</sup> Place
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David Burkhalter's Steel SUPR motor  
 -08 Average Torque – 490 Longtime friend of Billy Moyer and requested he try it out  
 Average Horse Power – 588 10/18 Installed in Billy Moyers Car for Cottin Pickin 100  
 Moyer Wins Cottin Pickin 100  
 10/25 Fall Classic – 2<sup>nd</sup> Place behind Birkhofer with over 800

hp

**Wall 2 Wall New Aluminum Chevrolet SUPR motor**

11-1-08 Average Torque – 497 Wall 2 Wall Engine assembled for test and is FOR SALE  
 Average Horse Power – 596

**Kenny Merchant Aluminum Ford SUPR motor built by Kuntz & Company**

-08 Average Torque – 489 Engine had 1435 laps when tested (2008 SUPR Champion)  
 Average Horse Power – 586 (Engine has had no problems and still running original valve springs)

Kenny's engine was put back in car to do test on reliability of parts. The following weekend Kenny won the Jambalaya 100.

**Kevin Sitton Aluminum Chevrolet by Jay Dickens**

4-1-08 NO Data Jay Dickens said "Not above my best Steel Motor but close"  
 Engine has 1400 laps to date with no problems 3 Feature Wins – 2<sup>nd</sup> in SUPR National Points  
 Champion – Triple A Diesel ArkLaTex Region  
 2008 Wall 2 Wall Rookie of the Year

If you study these results you will find the new aluminum SUPR motor are not above the old SUPR motor and that the Ford vs. Chevrolet are equal, given the fact that Kenny's motor had 1435 laps on it when test was run, I believe it would have been close to the Chevrolet on a fresh build. The aluminum motor is not above the old SUPR steel motor and cost from \$6000 - \$8,000 less. The new aluminum SUPR motor has to have 25lbs in front of the motor plate. This makes the motor weigh 390lbs, the steel SUPR motor I have for comparison has a cast iron Chevrolet block and it weighs 390lbs from intake to oil pan. The Ford motors weight is the same as Chevrolet.

I will try to list the advantages you have with the aluminum over the steel and it's not on the race track.

- A. Save at least \$6,000 on initial purchase
- B. Cylinder head will come completely assembled with a full C & C port job. You don't have to worry about did I get everything that's legal or will I pass tech if checked.
- C. Don't have worry about cracked cylinder walls like you have to with a steel block
- D. If you have a engine failure, the block is repairable and if only one cylinder is damaged, have it repaired and you don't have to bore the whole block and have to change all the pistons
- E. If you use a Dart or other aftermarket block, the weight is about 30-40lbs heavier than a OEM Chevrolet block
- F. The liners in a aluminum block are harder and you will have longer engine life over the softer cast block, this is a major problem if you are running alcohol
- G. You should be able to rebuild once before you have to bore block, with a cast block this usually don't happen
- H. Expected laps between rebuild along with expected parts to be changed in each engine and estimated costs of parts. (Aluminum – 1700-2000 laps) (Cast Iron – 1200-1500laps)

- Rebuilds of Engines

**Aluminum**

Valves & Springs  
 Timing Set  
 Piston & Rings  
 Rod & Main Bearings  
 Rods  
**Total - \$1,800**

**Cast Iron**

Valves & Springs - \$1,000  
 Timing Set - \$120  
 Piston & Rings – \$1,100  
 Rod & Main Bearings - \$150  
 Note: Reusing old rod  
**Total - \$2,370**

The labor should be the same on both engines with the exception; you shouldn't have to bore the aluminum block on first rebuild.

Notice: Any engine builder can build this engine; the parts are sold to the engine builder in kit form. In order for the engine builder to become eligible to be on the list of authorized builders he must first sign a contract and pay a \$200 setup fee that goes to a special race at the end of the year for any driver that has one of the new aluminum SUPR spec engines or if the engine builder hasn't built a engine yet, he can pick any driver to represent him in the Engine Builder of the Year Race. In 2008 there were 8 authorized engine builders making the race worth \$1,600 and the winner was Kenny Merchant whose engine builder was Jim Kuntz of Kuntz & Company Performance Machine and Balancing earning Jim the Engine Builder of the Year award.

The bottom line is you shouldn't spend more money and have less, with the new aluminum engine you spend less and have more for what you paid for. You don't have any performance advantage over the old SUPR engine. If you are a track promoter or a series director and don't see this as legal engine to compete under the existing rules for the old SUPR engine, your not doing your part to help the late model racer in your area. If anyone has any questions on any of the above just call me @ 225-275-9683 and I'll be glad to talk to you about anything.

Donald Watson