



ROADRUNNER ENGINEERING NEWSLETTER

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Roadrunner Big Kahuna Supercharger Kit with Auto Tensioner and Custom Polished 1-Wire Alternator. *Kits sold out. No production currently scheduled.* Over 320 kits produced with a total value of \$ 1.2 Million! Contact Roadrunner if interested in a business opportunity at roadrunnerengr@msn.com or 505-268-6768.

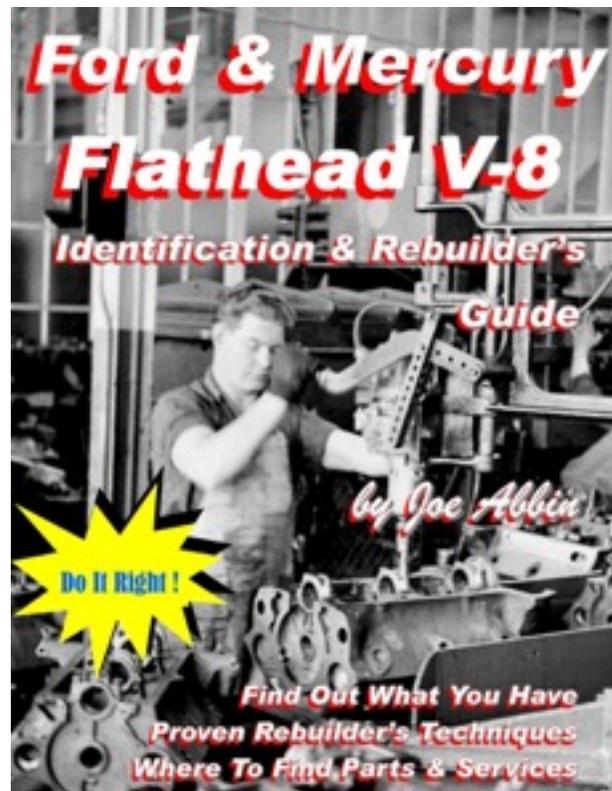
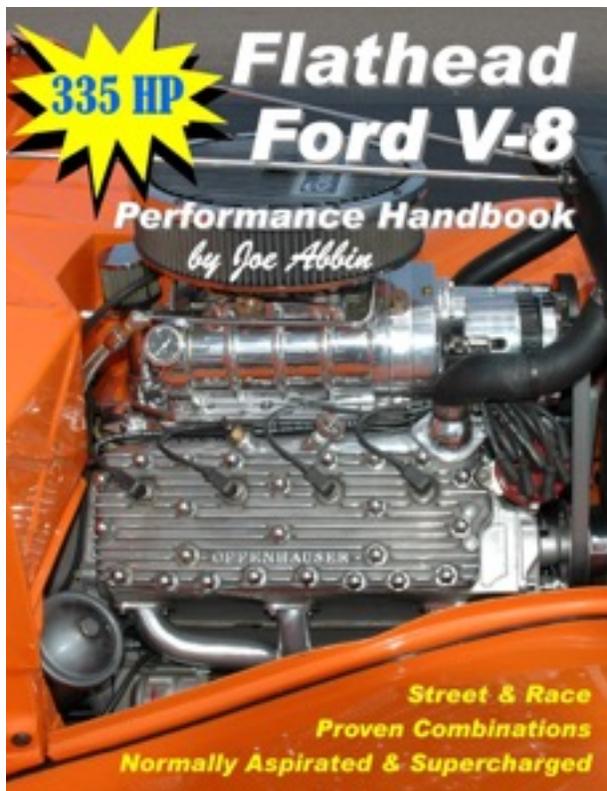
What's Happening?

Roadrunner Flathead Supercharger Kits No Longer Available. After 25 years I have decided to retire from the supercharger kit business. These kits have been a sensational success with great performance, good looks, and reasonable price. If I could find a qualified successor I would assist in any way possible in continuing the product line. Contact me if you would like to discuss. Thank you all for your business and friendship.

Blown Flathead Channel Videos have attracted almost 400,000 views. The **blown flathead channel** on YouTube includes a series of five short videos featuring the buildup and test of a high performance flathead built for Dr. Royal Langford of Broken Arrow, OK. These videos provide an overview of the major engine assembly processes and dyno testing of the engine both normally aspirated and supercharged. I think you will find the videos instructive and entertaining. See at

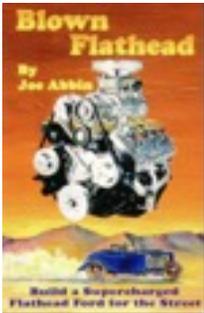
<https://www.youtube.com/channel/UC19XOrRgRHCiON-zIPAcFAQ>.

Books are selling out Fast



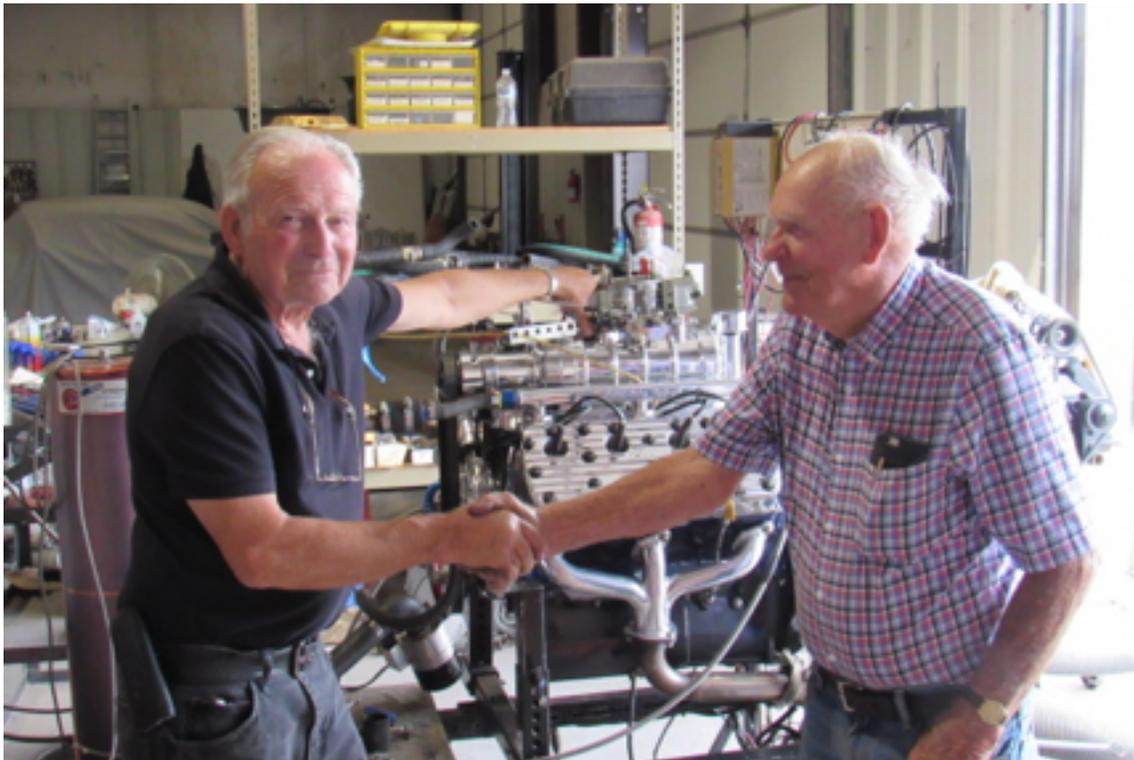
The *335 HP Flathead Ford V-8 Performance Handbook* reprints are sold out! This book has been described by some readers as the “bible” for flathead modification. Although there are many flathead speed manuals available, this book stands apart because it features actual dyno test and track results. The author’s 1934 Ford Tudor, the *Motorhead Mart Special* is believed to be the quickest (12.41 seconds in the quarter mile) flathead powered street rod ever. The proof is on the asphalt! The car and engine are fully described in this book. Get your copy while they may still be available from the sources listed below.

The *Ford & Mercury Flathead V-8 Identification and Rebuilder's Guide* is on its third reprint. This 184 page book will help you to determine what you have and what you need to build a quality engine that meets your performance and appearance goals. See the Table of Contents and a preview on www.roadrunnerengineering.com. Click on "books." Books can be purchased online at the above website (free domestic shipping) or from the Early Ford V-8 Foundation, Amazon, and other fine book sellers. Flathead part sources such as Speedway, Van Pelt Sales, The Old Ford Store, Bob Drake Reproductions, C&G parts, So-Cal AZ, Honest Charley Speed Shop and others also carry the book.



Blown Flathead has been sold out for years although used copies are available from various sources for really big bucks. The original \$11.95 price was a great investment!

5/7/2018 Dyno Test - Griffin 296 cu.in., 350 HP engine



**Figure 1. Tuner and Dyno Operator, Gary McGlasson
And Engine Owner, Bert Griffin with Griffin 296 cu.in. Engine**

Summary

Bert Griffin previously tested a 293 cu.in. engine on 4/30/2009, which produced 350 HP and was the best performing blown flathead that we had tested to that date. That engine was destroyed during a salt flat record attempt. Summary performance data of this engine can be found in the July 2016 newsletter. Bert brought a new 296 cu.in. engine that was built from old and new parts, and was tested on 5/7/2018. This new engine also produced 350 HP at 5600 rpm. The 293 cu.in. engine produced 350 ft-lbs of torque @ 4200 rpm corrected to standard sea level conditions. The 296 cu.in. engine produced 373 ft-lbs. of torque @ 4100 rpm also corrected to standard sea level conditions. The 293 cu.in. engine with 74% overdrive supercharger pulleys produced about 10 psi peak boost. The 296 cu.in. engine with 83% overdrive produced about 11 psi boost. Both engines ran on 110-octane racing gas during test. The engine characteristics are listed below.

293 cu.in. Engine Definition

Block assembly

The long block assembly was built by Taylor Precision Engines of Whittier, CA. I have no documentation on detailed engine measurements. The block assembly consisted of the following:

- a) 3-5/16" bore, Arias forged pistons with 7/16" popup domes (50 cc dome volume).
- b) 4.25" stroke Scat crank, Cunningham rods, full girdle center main cap supports.
- c) 1.687" stainless intake and 1.562" exhaust valves, block ported and relieved.
- d) Melling M15 High volume oil pump.
- e) American 410 cam with single Isky 185G valve springs (85 lbs on seat). Johnson hollow lifters.

Heads

Baron aluminum heads with a 144 cc head volume. Estimated compression ratio for this engine was 6.5:1.

Intake

Roadrunner manifold and Weiland 174 blower (S/N 30205) with 74% overdrive (3.23/5.63) pulleys. Several 4-bbl carburetors were tested, but best results were obtained with a custom Holley/ProForm carburetor built by C & J Engineering of Whittier, CA. This carburetor had an 812 cfm capacity and best power was obtained with #71 primary jets and #81 secondary jets. No air cleaner was used.

Exhaust

Free flowing center-dump dyno headers and large truck mufflers were used during test. No center exhaust baffles.

Ignition

Top mount electronic (magnetic pickup) MSD Ready to Run distributor with mechanical advance and high performance coil. Autolite 404 plugs, gapped at .025”-.030” were used with a slow advance curve (4-6 degrees initial, 16-22 degrees total) that was not fully advanced until about 3000 rpm.

Water pumps

A single electric water pump was used during test and for racing.

Thermostats

None.

296 cu.in. Engine Definition

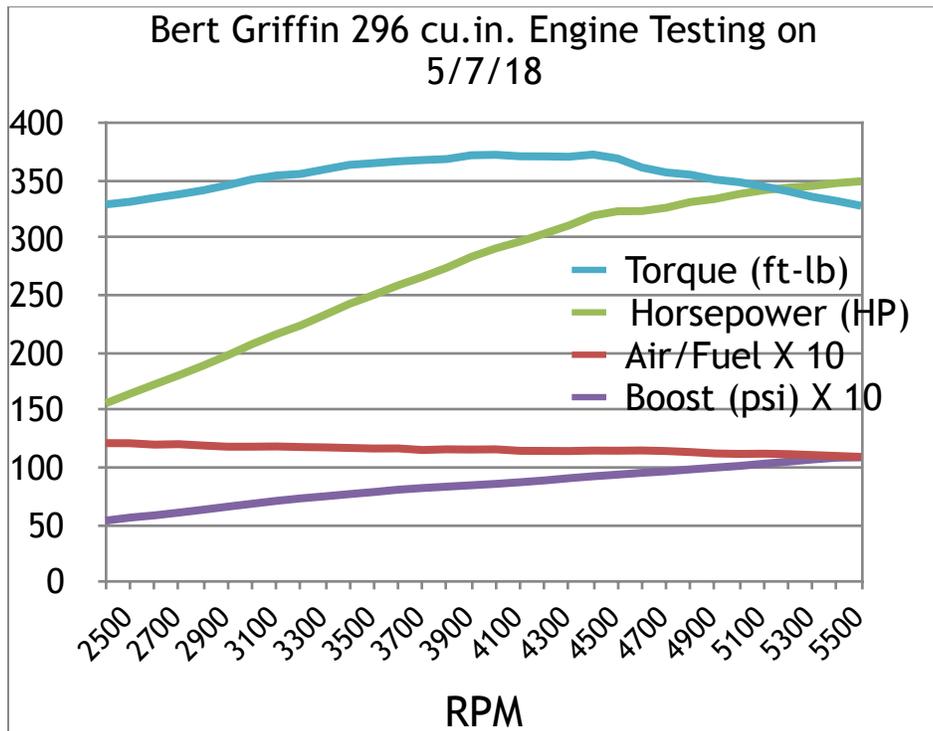
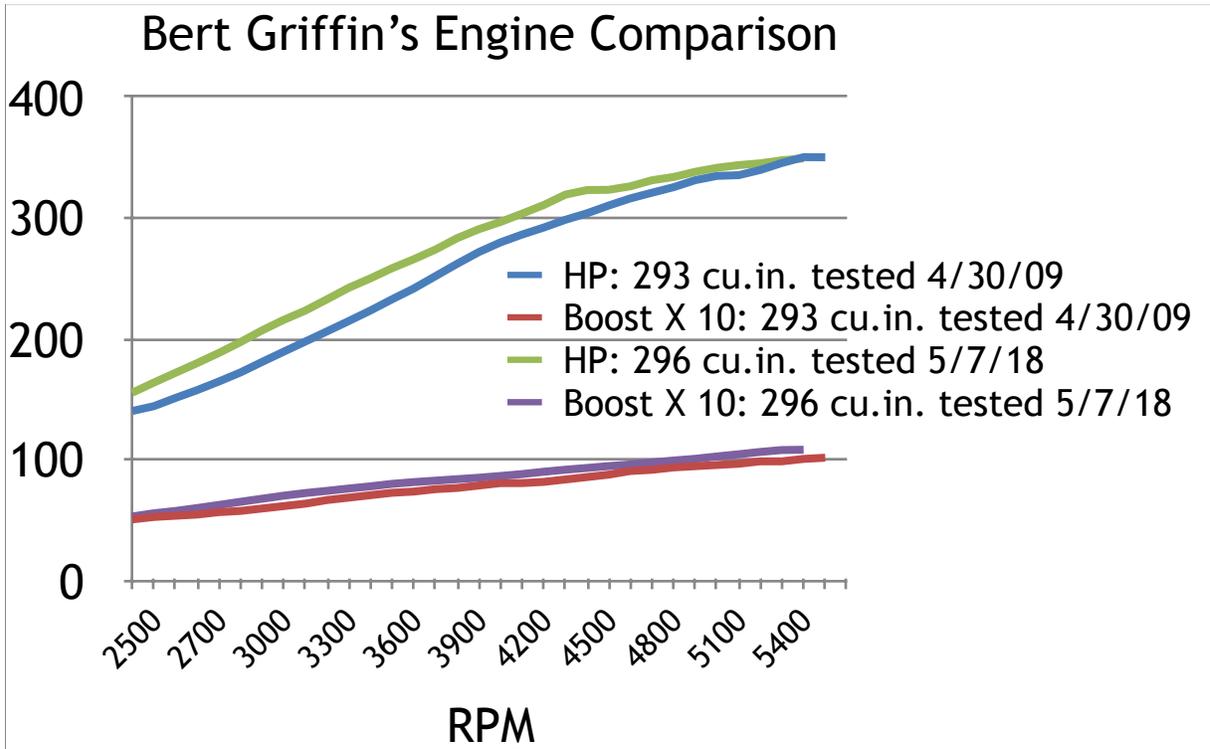
The new 296 cu.in engine was similar to the earlier 293 cu.in engine with the exception of the following:

- a) a slightly bigger bore (3.327”),
- b) J & E popup pistons,
- c) Schneider 284-F15 cam with stiffer valve springs (110 lbs at the seat, 210 lbs open),
- d) same Baron heads milled 0.1” (130 cc head volume) with an estimated 7.4:1 compression ratio for this engine,
- e) same carburetor with richer jets (73/82), and
- f) same Weiand 174 blower (S/N 30205) was used on this engine but with a 3.07” driven pulley resulting in an 84% overdrive with the 5.63” drive pulley.

Discussion

Based on the previous test results, the new engine was tested with the best performing carburetor and tune-up specs. The peak for this engine appears to have occurred at 5600 rpm. The dyno controls the maximum rpm to the set point by loading the engine and sometimes it is difficult to discern the maximum power point for the engine from the dyno control point. The worst case is destruction of the engine, so the maximum rpm is conservatively chosen and the only downside is that the full capability of the engine may not be measured. This engine appeared to be substantially stronger than the earlier engine over most of the test range but then rolled off at about 4600 rpm eventually matching engine #1 at 5600 rpm. There are several variables that could account for this. First, the cams and valve springs are different, although the cam specs are similar. The most likely cause was the head milling which tends to increase low end torque but restrict high rpm flow. The limited test time precluded any further investigation. A YouTube video of engine can be viewed at <https://www.youtube.com/watch?v=ayu3GuL2KE0>.

Overall, both engines performed very well and represent the two most powerful **streetable** flatheads tested to date by Roadrunner.



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Bert Griffin testing on 2018-05-07 @ 16-26-28				
Correction Method: Standard; Air Temp = 88F; Humidity= 15%				
RPM	Torque	Hp	Air/Fuel	Boost
(RPM)	(ft-lb)	(Hp)	ratio	(psi)
2500	329	156	12.1	5.3
2600	332	164	12.1	5.6
2700	335	172	12.0	5.8
2800	338	180	12.0	6.0
2900	342	189	11.9	6.3
3000	346	198	11.8	6.6
3100	351	207	11.8	6.8
3200	355	216	11.8	7.1
3300	356	224	11.8	7.3
3400	360	233	11.7	7.5
3500	364	243	11.7	7.7
3600	365	250	11.6	7.8
3700	367	259	11.6	8.0
3800	368	266	11.5	8.2
3900	369	274	11.6	8.3
4000	372	284	11.5	8.4
4100	373	291	11.6	8.5
4200	371	297	11.4	8.7
4300	371	304	11.4	8.8
4400	371	311	11.4	9.0
4500	373	320	11.5	9.2
4600	369	323	11.4	9.4
4700	362	324	11.5	9.5
4800	357	326	11.4	9.6
4900	355	331	11.3	9.8
5000	351	334	11.2	10.0
5100	349	338	11.2	10.1
5200	345	342	11.2	10.3
5300	341	344	11.1	10.5
5400	336	345	11.1	10.7
5500	332	348	11.0	10.8
5600	328	350	10.9	10.9

Favorite Links

Blown Flathead Channel is Roadrunner Engineering's complete collection of flathead videos including a five part series on flathead engine building, and much more!

<https://www.youtube.com/user/blownflathead>

Colin Sebern's 1947 Ford Woody

Colin's restoration of his family's woody is described in a link below. His car features a Roadrunner Nostalgia supercharger kit with electronic fuel injection. See

<https://www.jalopyjournal.com/forum/threads/blown-injected-flathead-1947-ford-super-deluxe-station-wagon.1082236/>.

Neil Bennett's 1936 Batten Special

After forty four years of ownership, the UK's Neil Bennett has published research into his unique car's history. Neil's car features a Roadrunner *Big Kahuna* blown flathead in its current configuration.

The story of the *Batten "Brooklands Racing" Special* is told in a book with illustrations of the car's progress from its origin in 1936 along with the stories of its six guardians throughout the years. Info on the book, and video sequences of the car in action can be found at www.battenspecial.com. The video of the car at full throttle on *Pendine Sands* is impressive.