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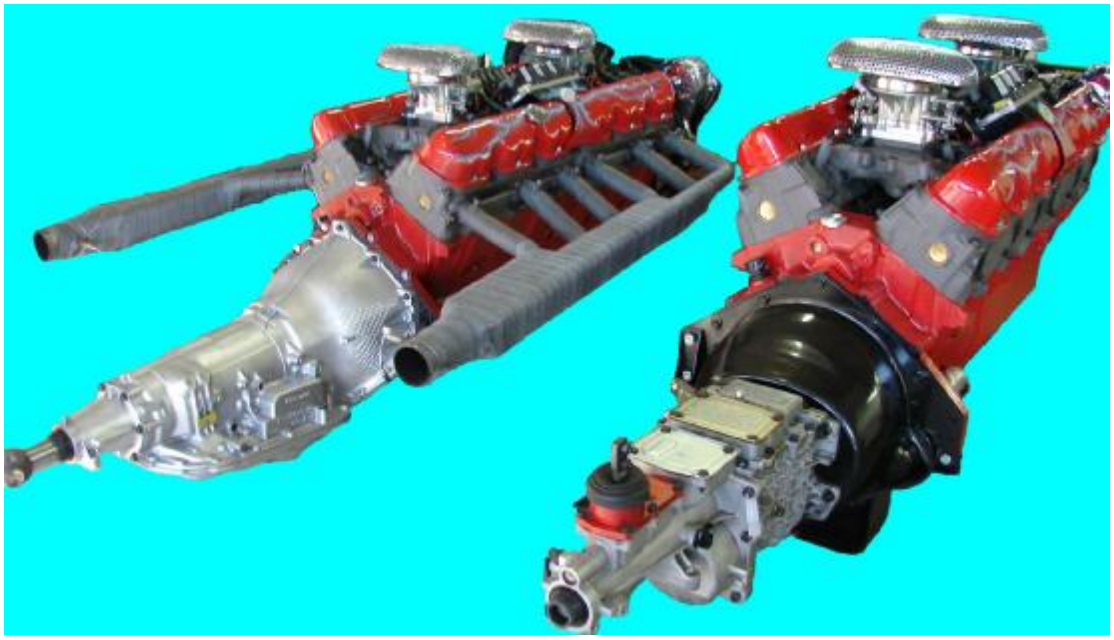

Re-Birth of the GMC 702 ci V12 Engine

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ThunderV12
1025 W. Tennessee St.

Power

ThunderV12 Power

The ThunderV12 makes the most power between 2,000 and 3,000 RPM of any automotive based naturally aspirated 87 octane fueled crate engine you can buy for under $35,000.

Wow! Rare, Powerful and affordable!

The Factory GMC 702 engine was rated at 630 lb-ft of torque at very low RPM (just off idle). It was governed at 2,400 RPM and was factory rated at 275 HP. The ThunderV12 has a custom cam grind and higher compression that moves the torque band between 2,000 and 3,000 RPM and pops the HP to 425 HP at 4,200 rpm on 87 octane. The dyno was unable to hold the engine back below 2,300 rpm because of its brutal low end torque. This same dyno had just ran a 1,500 hp big block racing engine and held that engine back fine but at a higher RPM. At 2300RPM the racing engine wasn't making any usable power. ***No automotive style engine makes this much power between 2,000 and 3,000 RPM naturally aspirated on 87 octane.***

- This V12 power level is accomplished with a reliable hydraulic flat tappet valve train and not a wigged out, unreliable, solid-roller valve train.

- The usable RPM range of the power band is ideal. Not "off idle and dropping fast" like the stock 702 V12, and not at 5,000 RPM and up like smaller modern powerplants.

- This power level is before any power adders. No nitrous, no turbo, no blower. See the section at the bottom of the page about adding power adders to the ThunderV12's.

To compare that level of usable power, Chevy, Ford and Chrysler all produce stroker big-block crate engines for the power hungry consumer. A select few of those engines do produce impressive power. But look at the whole picture and you will see they offer something, but not everything.

For example:

- The zz502 bigblock crate engine is street friendly but never hits 600lb-ft at any rpm.

- The zz572/620 stroker bigblock crate engine starts its pull under the 600 lb-ft mark at 3,000 rpm. Where was it between 2,000 and 3,000 rpm?

- The zz572/720 stroker bigblock runs a solid roller valve train, has un-street friendly 12.1 compression and burns 110 octane! It sells for over $14,500 on the internet with no manifold, carb, distributor, waterpump, flexplate, starter.....

- GM is now selling the latest in engineering technology, the $22,000+ LS9 supercharged V8 crate engine. It is a marvel. Yet with all the advancements and the addition of a supercharger, the advertised torque of 604lb-ft has not caught the 630 lb-ft that GMC advertised in 1960 for the stock 702 V12! And in our opinion, the looks of the V12 is still un-matchable. The ThunderV12 makes more rated torque for $4,ooo less money Wow! And with the V8, you still only have a V8. Wiki states over 90 million Chevy V8's have been produced since 1955. Less than 5,000 of the GMC v-12's were ever produced. It is estimated less than 200 of those exist today.

- The Jag V-12 is smaller than a Chevy 350 and makes less than 1/2 the torque of a ThunderV12. Thousands of Jaguar cars have had the troublesome V-12 removed in favor of the many kits for

installing a small block chevy. With production around a quarter million, not rare.

When you factor in how rare the GMC V12 is, it's stunning good looks, its brutal usable power and the fact that it is a GM V12! Well...need we say more?

There is a place for everything and the ThunderV12 has marked it's territory well.

For those that insist on more power, ThunderV12 has options for higher RPM pistons, head porting and roller cam options that can double the current power output of the V12.

Power Adders

The ThunderV12 is power adder ready!

(* See note below)

A power adder is an item such as nitrous, supercharger or turbo.

Most engines require substantial internal modifications to run power adders. Cranks are changed from cast to forged. Rods are upgraded. Pistons are not only changed in alloy but design. Pistons usually require the top ring to be dropped away from the heat of the top of the piston and the static compression range lowered. Head bolts are upgraded to help hold head gaskets. All of that is a substantial expense and is before the power adder is added.

The ThunderV12 is power adder ready!

(* See note below)

Use of a power adder within the existing rpm range of a ThunderV12 is a natural. The crank is already a 180# forged unit with monster journals and healthy overlap at the journals. The rods are massive. The piston design was already designed for high heat soak and high loading application. The ThunderV12 can be delivered in compression ratios from a blower friendly 7:1 up to 9:1. When it comes to head fasteners, although a change to studs to increase the clamping force would be a good insurance policy, the existing clamping force of 56 (!) head bolts is a substantial increase over the 20 to 36 bolts of most v8 engines.

Although the existing 600+ lb-ft of torque at 2,000 rpm will blow the tires off at highway speeds, an excess of 1,200 lb-ft of torque at 2,500 rpm would surely satisfy even the most jaded power junkie.

*Note:

Any engine can be damaged by poorly tuned or misused power adders. Such damage can inflict other damage and injuries. ThunderV12, LLC recommends that only qualified persons perform such work and that final testing is performed on an engine dyno. No matter how professionally done, ThunderV12, LLC will not be liable for engine failures, damages or injuries from modified engines. ThunderV12 does not recommend power adders and has never performed power adders durability studies. Each part of the existing engine will need studied by a person qualified to judge the suitability of such parts for your application.

Modify at your own risk.

A primer on HP

Ever wonder why a powerful diesel engine in a pick up is rated at less HP than it's lesser gas engine? Or why a semi truck might have a 375hp cat diesel and pulls 60,000+ pounds but your 375hp camaro can't pull a car trailer? Not all power is the same.

When an engine is dyno'd, torque (Tq) and RPM are measured by the dyno and HP is calculated at any instant as Tq times RPM divided by 5250.

If you look at this equation it tells you that if you double the rpm with the same Tq you then get twice the HP. So engines with the same torque can have vastly different HP rating depending on what RPM the torque is measured at.

Moving the torque band up the rpm range is the trick to getting any engines to develop big Hp . The downside of moving the peak torque area at too high an rpm is that the lower rpm area, under the peak area, becomes unstable. That is why race engines are horrible street engines. A prime example is the 9,000 rpm smallblocks used in NASCAR or the smaller yet 18,000 rpm engines used in F1. Although the NASCAR engine is making 800hp, it never makes over 500 lb-ft of Tq and at 2,500 rpm it simply doesn't want to run. It literally doesn't make any stable power. Trying to use such an engine on the street would be an exercise in frustration as this 800hp car won't get out of it's own way at lower rpms.

My favorite example of this was a magazine article several years ago of a Toyota Supra that was turbo'd to 600 hp. The torque curve was so elevated and so limited they couldn't get it to run a 13 second quarter mile. A stock 300 hp Mustang GT will run a 13 second quarter mile. Don't be fooled by peak numbers.

The stock 702 as used in trucks was factory rated at 275 Hp.

Like the 375hp semi truck engine, the ThunderV12 power is "true" power without crazy rpm's, nitrous, turbo or a blower.

With the design focused on a realistic RPM range, you won't get crazy peak HP numbers that you cannot use.

Want more power? We can do that.

American made V12 power.

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