



Tech Talk



C-6 LS3 Engine Power Increase

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How to give your car more power? Probably the most able and willing engine for performance add-ons is the GM LS3. (2008-2013) Here's some ideas to get your LS3 up to near 600 hp.

A very nice way to get linear power and higher performance is to change the cam and heads on the LS3. You'll also want to add an air intake, headers and an intake manifold. These should get you very close to the magical 600 hp. But before we begin, these mods are not for the faint of heart and will require the knowledge and skills of an experienced shop. Luckily, we have several in the area that can do this. (see below*). Some other things may need to be added or changed like a different throttle body, an exhaust modification and definitely, a tune by an experienced tuner*.

Let's start with the air intake for the LS3 Corvettes. Lot's of choices that claim anywhere from 15 to 40 hp gains: SLP; LG Motorsports; Vararam; K&N and AFE are just some. So let's be conservative and say 20 hp gain.

Next are headers and again lots of choices: American Racing; BBK; Melrose; Kooks and Stainless Works to just name a few again. Just adding headers will give you about 20 hp on a stock engine but on the engine we're discussing here we can expect about a 40 hp gain. Get the headers ceramic coated and stick with 1 ¾ inch for up to 600 hp.

When we look at performance heads for the LS3 we see lots of different brands but for this set up we really want to look at the specs needed to get us to where we want to go. Look for fully CNC-ported 255cc intake runners, CNC-profiled 69cc combustion chambers, and 2.165/1.600 valve diameters with high-performance dual valvesprings. They can be spec'd out with different rate valvesprings, and titanium or steel spring retainers. Again, lots of choices here: AFR; Trick Flow and Brodix are the most common.

Let's talk about a camshaft. Anything goes with a cam but these specs here are what will get us to our goal without sacrificing too much drivability. So try for a cam that mirrors these specs: 0.625/0.625 lift, 113 lobe-separation angle, and 230/238 duration at 0.050. These heads and this cam will add an additional 60 hp to our build.

The intake manifold is often overlooked when adding for performance but strides have been made in materials and the science needed to extract more power at the intake. Here are a few names of manufacturers who have upped the ante on intakes: Edelbrock; Holley-Sniper; MSD Air Force; TPiS; Fast LSXR and Lingenfelter. Gains are in the range of 20-40 hp.

So in summary, on this particular combination we have an air intake 20hp, headers at 40 hp, heads and cam at 60 hp and intake at 30 hp. This gives us 150 hp gain over stock and gets us very close to 600 hp.

I have an LS2 with an old FAST intake and very similar mods as these. My latest engine will reach 600 hp at the crankshaft. So these are very realistic numbers. Look for pretty dramatic torque gains as well. ***"Sit down, shut up, strap in and hold on!!"***

Talking with your performance mechanic will gain you knowledge and understanding of what you really want and what you realistically can expect from this combo.

Finally, the most important thing to remember is that any of these mods WILL REQUIRE computer tuning to make them work together for better power, fuel economy and drivability.

*Three performance shops I can recommend are: www.BoosPerformance.com; www.DougRippie.com; and www.olsencorvette.com.