

CHEAP L92 HEADS: 44HP GAIN!



**LS6
KILLERS!**



High-Tech PERFORMANCE

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INSIDE GM

- C5R/LS7/L92 HEAD COMPARO
- LSX BLOCK: 511 INCHES ON A BUDGET
- LS7 CAMARO DRAG TEST

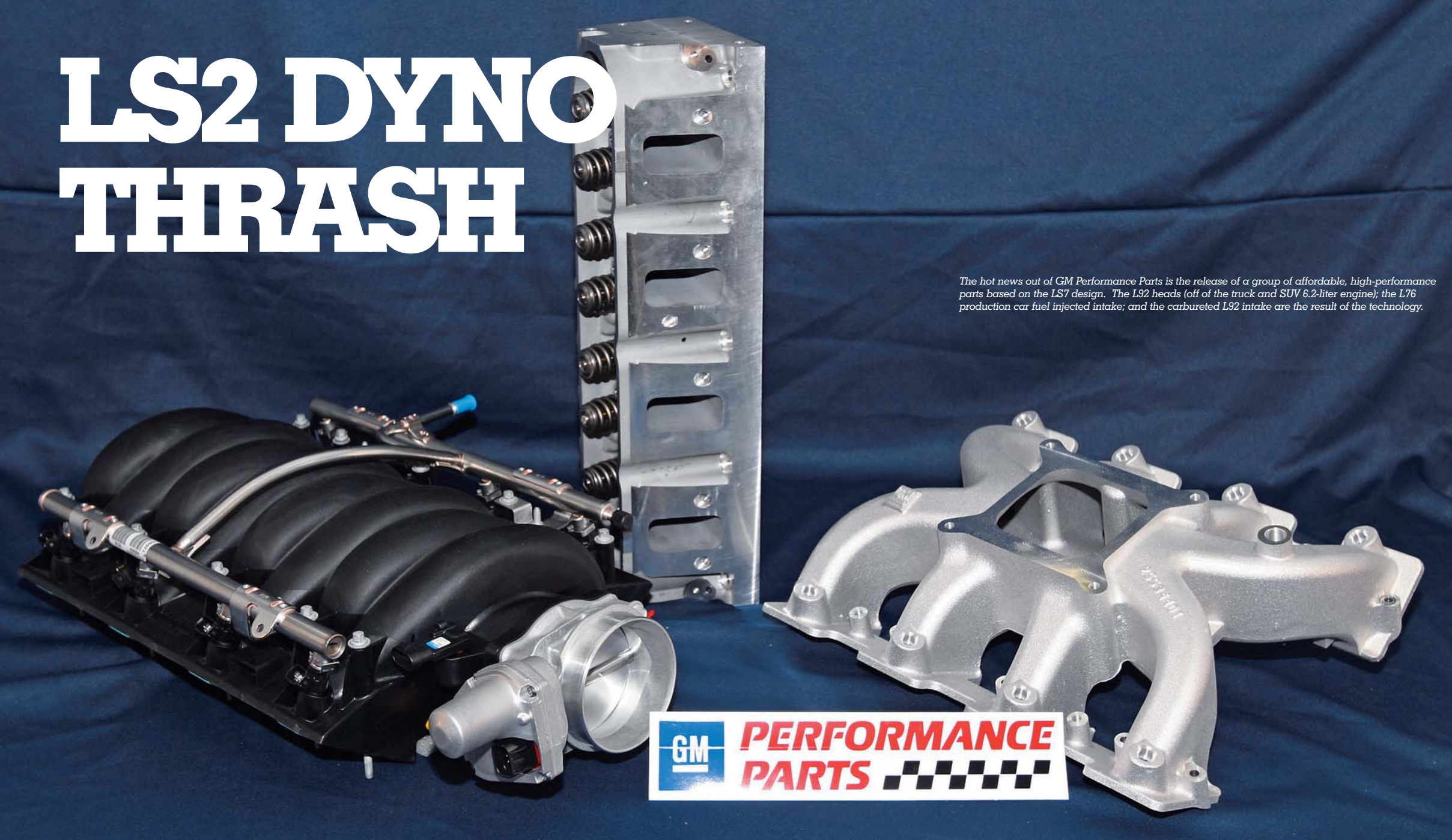


- LS2 HEADS/CAM SWAP HOW-TO
- 16 HOT NEW GMs REVIEWED

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LS2 DYNO THRASH

The hot news out of GM Performance Parts is the release of a group of affordable, high-performance parts based on the LS7 design. The L92 heads (off of the truck and SUV 6.2-liter engine); the L76 production car fuel injected intake; and the carbureted L92 intake are the result of the technology.



Part III: L92 Head Dyno Test

BY DR. JAMIE MEYER
PHOTOGRAPHY BY THE AUTHOR AND RICK LEBLANC

Editor's Note: This story was assigned to contributor Jamie Meyer, who later took a position at GM Performance Parts—where the L92 heads and intakes are available from. While he does work with the GM components tested, every step has been taken to ensure that this story is as objective as possible, and no special considerations were made to produce the results seen here.

For the last few months, we've been pounding away on a stock LS2 engine at Livernois Motorsports looking for even more power than the factory delivers. As most GM High-Tech junkies know, the LS2 is a 364-inch, 400-horse, 400 lb-ft small-block GM V-8 that comes stock in the base Corvette, GTO, SSR, Trailblazer SS, or as a crate engine from GM Performance Parts. And, as complete as our last study was (see: LS2 Dyno Thrash, Part II: Head Shootout; January 2007), we still had one set of heads that we couldn't fit into our LS2 head shootout. Those heads are the L92 castings that come as standard equipment on the L92 engine, found in such production vehicles as the 2007 Cadillac Escalade in 403-horse form. What makes the L92 head so special? It's

designed straight off the LS7 head—the same head that offers you 505 horses when installed on the 427-inch LS7 in the current production Z06 Corvette. Not only does the L92 head design have a blue blood pedigree, but because they are being built for truck and SUV engines, GM Performance Parts has been able to obtain a large number of these heads for their power hungry customers. What that means is that the L92 head is cheap. Look for these things to sell for under \$1,000—for a complete pair—assembled and ready to go. In fact, as you read this, the L92 head has just been released as PN 12582713.

The fact is that the L92 head is one of the most anticipated part releases of the 2006 racing season. Internet LS hotspots have been prophesizing about these heads for months

with bold boasts of just how much potential is hidden in these super-affordable high-performance heads. To test the potential of the L92 head, we once again enlisted the help of Dan Millen and his Livernois Motorsports crew. We asked them to look at a stock LS2 with the stock heads versus the same engine wearing the L92 heads with the companion L76 intake (PN 12590123). That intake, by the way, is an interesting story in itself. As stated, the L92 heads can be found on various GM trucks and SUVs. Unfortunately, the "truck" intake for the L92 won't clear the hoods of too many production cars. The L76 intake has been enlisted for use with the L92 heads on several production cars in Australia wearing the Holden nameplate, and it's the perfect companion for a street car, packed with a hopped up LS2, wearing the L92 heads.

Our sample L76 intake was quite literally the first one available in the states, and while it looks suspiciously like the stock LS2 intake, there are some very important differences. First, the L76 intake is designed to match up to the wider intake port configuration of the L92 intake. Secondly, the L76 intake has physically larger intake runners than the production LS2 intake. And, lastly, the L76 intake comes complete with a 90mm throttle body, fuel rails, and 39 lb/hr fuel injectors. All of that for around \$500 makes the L76 the perfect companion for the L92 heads.

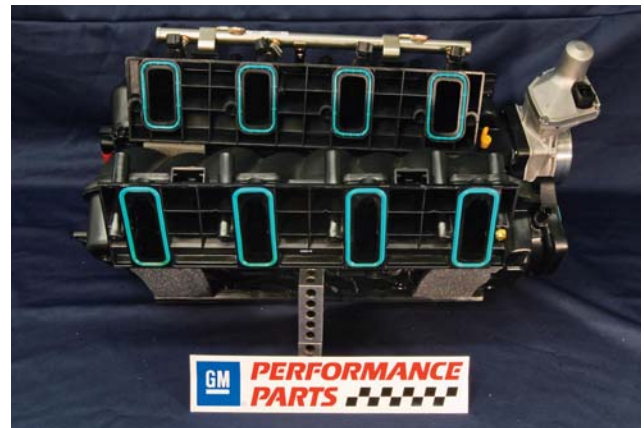
And, while we were swapping L92 intake manifolds, we got a chance to play with the killer new carbureted intake that GM Performance Parts has for these heads as PN 25534401. This allows a quick and easy way to get the L92 heads on an LS2 using your carburetor of choice. But Livernois wanted to take it a bit further. So, they built a prototype elbow and LS2 throttle body adapter for the intake so that you can use custom Livernois fuel rails (yes, there are injector bosses on this GM Performance Parts intake) and the stock LS2 fuel injectors. This allowed us to compare both intakes with the L92 heads using the same fuel system and throttle body. Now, we were getting excited!

TESTING PARAMETERS

For this test, we wanted to hone in on the heads working with the two different intakes. Assuming that anyone who was swapping heads would also be changing the cam, we installed the Livernois Motorsports Stage II cam that specs out at 232/236 @ .050, .600 lift on a 112° lobe separation angle. The valvesprings were also upgraded to support the .600-inch lift numbers on both the stock LS2 heads and the L92 heads. On the engine dyno, each combination was tested with BP premium pump fuel, 60 pounds of fuel pressure, Kook's long-tube headers, and a FAST throttle body. All tests were performed on the Livernois Superflow 901 water brake dynamometer, which is good to 2,000 ft-lbs. The Livernois Motorsports dyno cell is



The amazing new L92 head is a truly affordable high performance head that makes 500-plus horsepower out of a small-block very easy. The L92 heads are the "truck version" of the LS7 Corvette head. They feature a revised 70cc combustion chamber, massive intake ports, and a highly efficient exhaust port. Valve sizes are 2.16-in intake and 1.59-in exhaust. We had heard rumors that they flow 330 cfm out of the gate and over 360 cfm with only a valve job. Sold complete from GM Performance Parts as PN 12582713, they go out the door complete for less than \$1,000 a pair!



This was the most rare piece of LS equipment in the country at the time these pictures were taken. The highly hyped L76 intake has been borrowed from a production Holden V-8. The L76 intake or PN 12590123, is what you need to match the L92 heads to your 6.0-liter Gen III/IV. It is sold complete with injectors, fuel rails, and a 90mm throttle body from GM Performance Parts for around \$500.

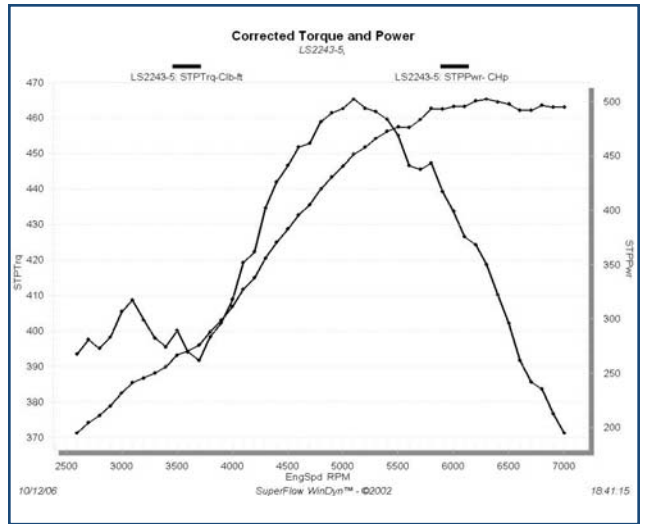


Offered as PN 25534401, GM Performance Parts has just released a new intake manifold that allows you to use a carburetor on your L92-headed LS2. The intake also contains injector bosses for fuel injectors—something that Livemois Motorsports took advantage of during the course of our testing.

Here's a look at the throttle body adapter that Livemois put together for this test. While they pirated the elbow from Dan's 6-second 10.5W-tired Outlaw Mustang, it worked quite well on our 540-horse small-block Chevy. The technicians at Livemois promised us that you will be able to buy this same setup for your car by the time this story runs—elbow, fuel rails, adapter—the whole thing.

LIFT (INCHES)	INTAKE FLOW (CFM)	EXHAUST FLOW (CFM)
.100	79.2	57.8
.200	153	114.4
.300	225	147.2
.400	276	170.3
.500	309.6	183.1
.550	323.2	186
.600	332.2	189.5
.650	327.7	191.1
.700	330	192.6
.750	317	195
.800	317	195.8

Flow numbers of the stock L92 head. Tested by Livernois Motorsports on a Super Flow 600 flow bench at 28 inches with a 4.125-in bore.



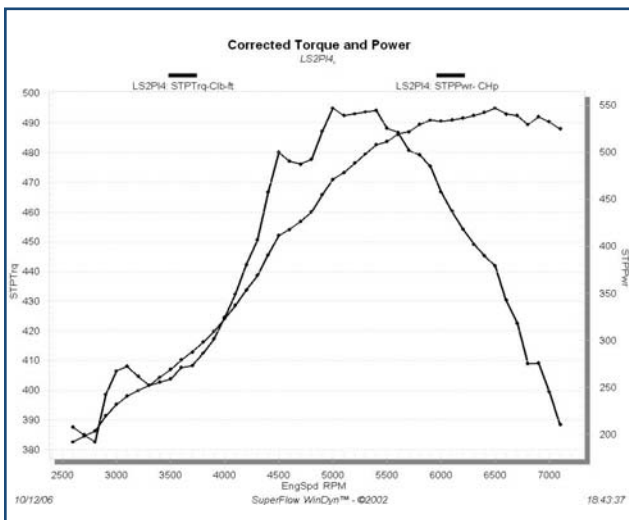
This is what we're shooting for—a stock LS2 carrying the Stage II Livernois Motorsport cam, upgraded valvesprings, and 502.3 hp at 6,300 rpm and 465.3 lb-ft of torque at 5,100 rpm. Bottom line: the stock LS2 with a camshaft is one bad boy. Could we do better with a \$1,000 pair of heads and a \$500 intake?



The assembled LS2 engine with the L92 heads and L76 intake looks very stealthy. In this form, the LS2 produced 546.8 hp at 6,500 rpm and 494.9 lb-ft of torque at 5,000 rpm. The short runners of the L76 intake and the good low-lift numbers of the L92 heads created an outstanding torque curve. This would be the hot setup for your typical full-weight street car.



"Top Fuel" Dom minds the store at Livernois Motorsports' engine dyno while he puts our LS2 through the paces. Outfitted with 30-plus technicians, an engine assembly area, multiple lifts, two chassis dynos, and over 36,000 square feet of high-performance know-how, Livernois has a lot going for it.



The LS2 crate engine, Stage II Livernois cam, upgraded valvesprings, L92 heads, and L76 intake created these horsepower and torque curves. Impressive for less than \$2,000 worth of upgrades.

LS2

THRASH

LS2

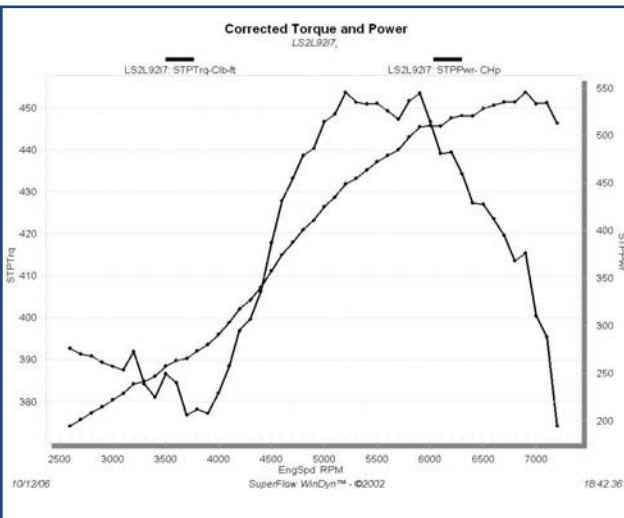
DYNO THRASH



The carbureted intake for the L92 heads makes an impressive statement on the high-tech LS2 fuel-injected small-block. Instead of a carburetor, Livernois put their prototype fuel injected pieces to the test. It looks trick!



Here's a close up of the carbureted GM Performance Parts L92 intake on the LS2 engine. Along with the very affordable L92 heads, it adds up to affordable combination of parts.



The results are in—the L92 heads and carbureted intake rock! They produced 545.8 horses at 6,900 rpm and 453.8 lb-ft of torque at 5,200 rpm. The L92 carb intake gives up some torque down low—no surprise there—but it gains it back on the top end with a peaky power band. This is your race car intake, folks, no questions about it.

temperature controlled, and it was maintained at 68°-70° during each test. Our goal was to keep the air/fuel ratio as consistent as possible from 12.5-12.8 for all tests.

RESULTS

Starting with the stock LS2 heads, we quickly reconnected with an earlier test. With over 500 hp, the L92 heads had their work cut out for them. The fact that the LS2 heads, Stage II cam, and stock LS2 bottom end cranked out 502.3 hp and 465.3 lb-ft of torque still warms our hearts. The LS2 is an amazingly efficient small-block V-8 that is a tremendous starting point for making crazy power.

We started our testing with a trip to the flow bench at Livernois. The box stock heads topped 330 cfm on the intake and came close to 200 cfm on the exhaust. Better yet, the low-lift numbers were amazing—225 cfm at .200-inch lift shows how these heads help make big torque in the SUVs that GM is kicking out. The L92 heads were bolted to the awaiting LS2, and we got down to it.

"You've got CNC-ported technology out of the box," Millen exclaimed. "You've got a CNC-ported LS2 head out the box. With some CNC port work, the L92 head is going to crucify everything else on the market. That head is very close to an LS7 head. With some port work—after we get done analyzing the CNC data—we'll be over 350 cfm on the intake. If you've got a 400-inch motor or bigger, the L92 heads will be killer. Those big intake ports on a big-inch LS engine will really make some power. You're talking close to 700 naturally aspirated horsepower from a pump-gas car if the combination is right!"

First up was the L76 intake, which really looks like a stock LS2 plastic intake until you start looking at them side by side. The L76 does have larger runners—they are "hunched" at their peaks on the very top of the intake. And, the ports match the larger, wider L92 heads. The low lift numbers really played out in the torque curve with this combination, as the L92 heads and L76 intake helped the LS2 stomp out 494.9 lb-ft of torque at 5,000 rpm with a very wide torque band. The fact that this combination also produced 546.8 hp at 6,500 rpm seems almost inconsequential. Remember, these are stock parts—with a somewhat warm cam—that can be put together for minimal money. This combination of parts will quickly become the standard by which bolt-on parts will be measured from this point on.

"I think the L76 is a great intake," Dan said. "You can immediately see that GM did some great engineering on it. We saw it when GM went from the LS1 to the LS6. They made an intake that was more efficient—the same thing has happened here. I'm just concerned that there isn't much more GM can do. How much efficiency is left on the table with the LS? Well, if the intake was aluminum, you'd be able to run 30-plus psi of boost on it. But, other than

LS2

DYNO THRASH

ENGSPD RPM	LS2 HEADS/INTAKE		L92 HEADS/L76 INTAKE		L92 HEADS/CARBED INTAKE	
	STPTRQ CLB-FT	STPPWR CHP	STPTRQ CLB-FT	STPPWR CHP	STPTRQ CLB-FT	STPPWR CHP
2,600	393.5	194.8	387.6	191.9	392.7	194.4
2,700	397.6	204.4	385	197.9	391.3	201.2
2,800	395.1	210.6	382.5	203.9	390.9	208.4
2,900	398.3	219.9	398.6	220.1	389.4	215
3,000	405.5	231.6	406.5	232.2	388.4	221.9
3,100	408.7	241.2	408.1	240.9	387.6	228.8
3,200	403.1	245.6	404.6	246.5	391.9	238.8
3,300	398	250.1	401.7	252.4	384.2	241.4
3,400	395.5	256.1	402.7	260.7	381.1	246.7
3,500	400.1	266.7	403.9	269.2	386.6	257.6
3,600	394.1	270.1	407.6	279.4	384.6	263.6
3,700	391.7	275.9	408.3	287.6	376.9	265.5
3,800	398.4	288.2	412.5	298.4	378.2	273.6
3,900	402.3	298.7	417.2	309.8	377.2	280.1
4,000	408.9	311.4	424.5	323.3	382.1	291
4,100	419.2	327.3	432.4	337.5	388.5	303.3
4,200	422.3	337.7	442.2	353.7	397	317.5
4,300	434.6	355.9	450.6	368.9	399.7	327.3
4,400	441.9	370.2	466.6	390.9	406.2	340.3
4,500	446.6	382.7	480.1	411.3	417.8	358
4,600	451.8	395.7	477.1	417.9	427.9	374.8
4,700	452.8	405.2	476.1	426.1	433.3	387.7
4,800	458.9	419.4	477.8	436.7	438.7	400.9
4,900	461.5	430.5	487.2	454.5	440.3	410.8
5,000	462.6	440.4	494.9	471.2	446.8	425.3
5,100	465.3	451.8	492.4	478.1	448.5	435.5
5,200	462.7	458.2	493	488.1	453.8	449.3
5,300	461.8	466	493.7	498.2	451.3	455.5
5,400	459.6	472.5	494.3	508.2	451	463.7
5,500	455.1	476.6	488.2	511.2	451.2	472.5
5,600	446.5	476.1	486.8	519.1	449.3	479.1
5,700	445.6	483.6	480.7	521.8	447.3	485.5
5,800	447.2	493.9	479.3	529.3	451.7	498.8
5,900	439.2	493.4	475.4	534	453.5	509.4
6,000	433.7	495.4	466.7	533.2	446.8	510.4
6,100	426.6	495.5	460.2	534.5	439.2	510.1
6,200	424.2	500.8	454.2	536.2	439.4	518.7
6,300	418.7	502.3	449.2	538.8	434.4	521.1
6,400	410.2	499.9	445.3	542.6	427.3	520.7
6,500	402.2	497.8	441.9	546.8	427	528.5
6,600	391.7	492.2	430.2	540.6	423.6	532.3
6,700	385.7	492	422.7	539.2	419.7	535.4
6,800	383.7	496.8	409	529.5	413.6	535.5
6,900	376.8	495	409.2	537.6	415.5	545.8
7,000	371.3	494.8	399.6	532.5	400.4	533.7
7,100			388.4	525	395.4	534.6
7,200					374.2	513

big boost applications, there's no question about it—the L76 intake is clearly better."

Next up was the carbureted intake from GMPP. GM Racing designed this intake specifically for the L92 heads to make it easier for hot rodders to adapt a carburetor onto a more modern small-block V-8. The Livernois technicians saw it as a way to adapt their fuel injection system to an intake with more horsepower potential.

"I wouldn't want to run the carb L92 intake with anything but a carburetor," said Millen. "We ran it with the fuel injection just to see where it matched up with the L76, but I think the carb would be the way to go. Introduce some nitrous into that combination, and you'd have something really special."

CONCLUSION

GM Performance Parts has just released one of the most efficient small-block V-8 cylinder head ever created—the L92 LS Family head. With a 330-cfm intake flow, large intake ports, and massive potential, they are the new standard in the hot rod LS world. We will try to get back to you with a ported version, more cubic inches, and a bigger cam to see just where these things can take a serious LS engine. For now, the L92 head is the most affordable bolt-on head you can buy for the LS engine family. Coupled to the factory-engineered L76 intake or the race-inspired GM Performance Parts L92 carbureted intake, the L92 heads look even better. ■

SOURCE

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