

25-HP BOLT-ON FOR THE 396/427 CHEVY

Chevy's hydraulic-lifter Semi-Hemi is often overlooked because of its consumerish component parts. However, all it takes is a good high-rise manifold and a dyno-jetted Holley quad to make it turn on. Here's how

BY MARTIN L. SCHORR

MOST high-performance buffs are aware that Chevrolet's genuine hot setup is the solid-lifter 396 and 427-cubic-inch engines with the good heads, camshaft and four-bolt main block. In 396 trim the topline engine is the 375 hp version, which NHRA factors to its honest rating of 425. And, in 427 trim, it's the 425-hp model which NHRA also factors to something in the neighborhood of 450 hp. But, there are far more hydraulic-lifter medium-performance 396-427 cars on the road, and these are the ones that can really stand some help. Although they are long on cubes, they are short on horsepower, revs and durability as compared to the high-performance versions. They can be brought up to competition specifications—as proven by some of the NHRA record holders—but it's expensive and it only makes sense if you're shooting for a specific class record.

The hydraulic lifter engines range in horsepower from the popular Camaro-Chevelle 396/325 up to the top gun 390-hp 427 Corvette. Many buffs swing for this engine as it requires less maintenance to operate than the HP version and can be fitted with many of the luxury options—such as air conditioning—which are not available on the big guy. They are also easier to buy, as many dealers shy away from stocking HP cars.

One sure-cure for tired blood in one of these hydraulic-lifter engines involves

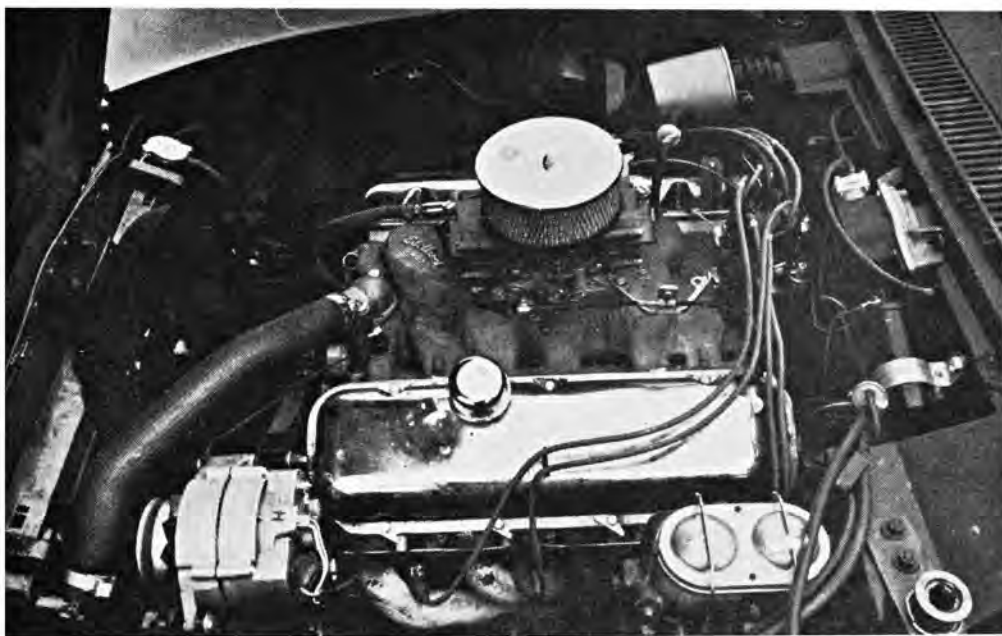
Completed swap on 390 hp 427 Corvette.
A hood scoop is mandatory for carb clearance.



Chevy specialist Billy Mitchell compares old Quadrajets setup to new Edelbrock-Holley deal.



Edelbrock manifold is designed to use Holley three and four-barrel carbs on small port heads.

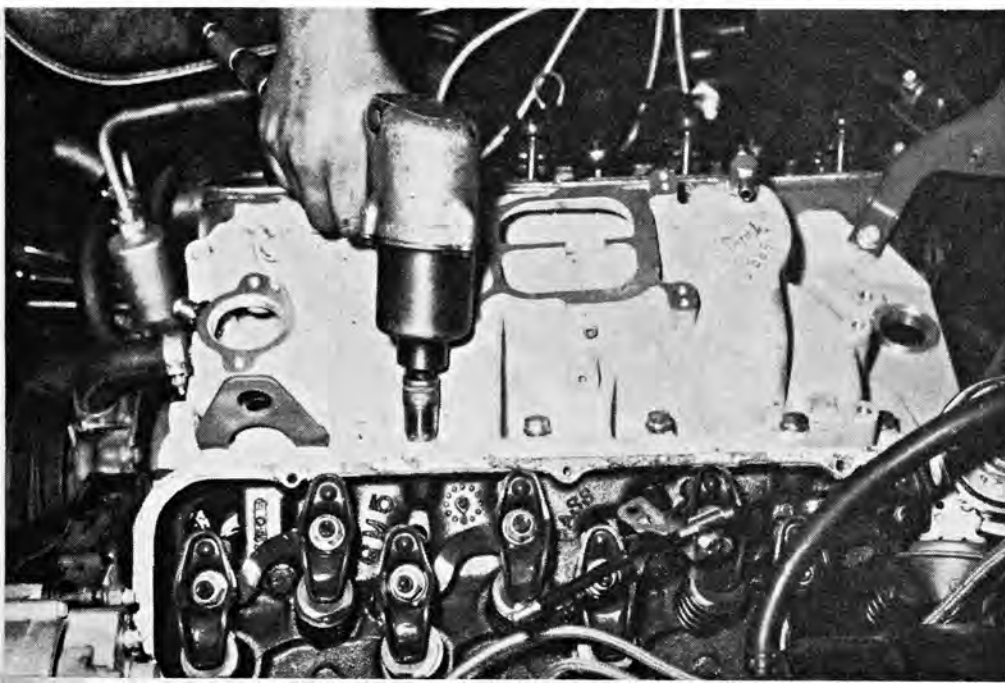
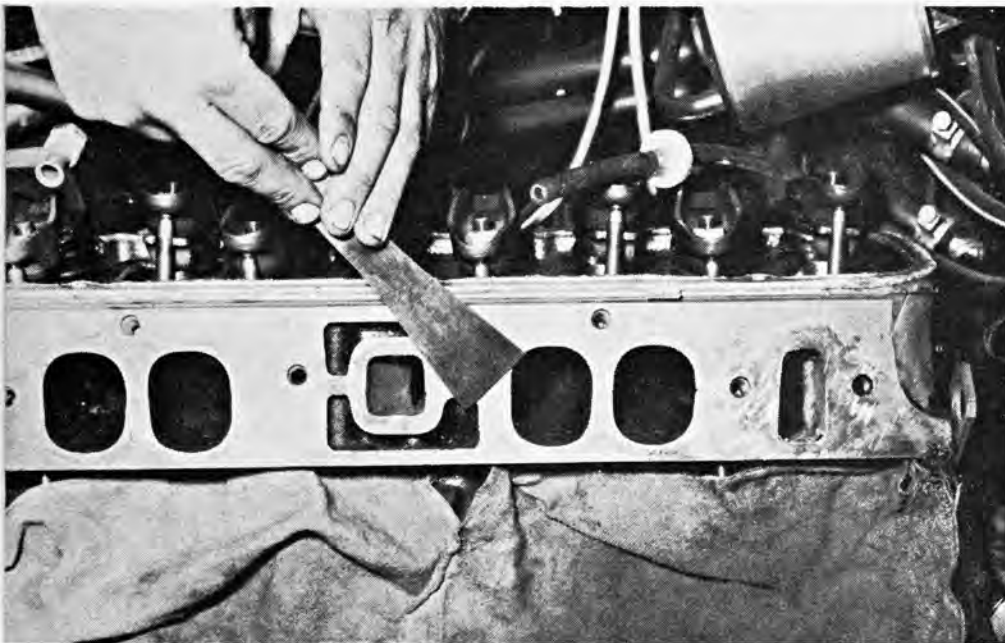




First disconnect all fuel and vacuum lines and remove the stock carburetor and manifold.



Intake gaskets must be sprayed with sealer to guard against manifold vacuum leaks.



the swapping of the stock induction system for a more performance-oriented one. Most of the 396-427 standard engines come through with Rochester Quadrajet carburetion, while some—mainly the older 427/390 and 396/360—were delivered with small-bore Holley quads. The hot setup, however, especially for a street or street-strip machine, is a high-riser manifold with a 780-800 cfm Holley quad as furnished on the old 427/425 and 396/375 engines. But, it's not advised to swap induction systems with the above-mentioned engines, as they come stock with big-port HP heads and manifold port alignment just won't be there.

The answer to the problem is the installation of a commercial aluminum high-riser manifold, such as the Edelbrock, which is shown here with the Corvette-style Holley four-barrel. This fuel-feeder flows approximately 150-cubic-feet-per-minute more than the Rochester Quadrajet and it's completely flexible as far as jet changes are concerned. Secondary jets in the Quadrajet are cast into the carb body making changes impossible.

To give you an idea of just what's involved in swapping induction systems, follow us as we go through the installation of an Edelbrock setup on a 390-hp 427 engine in a '68 Corvette. We would like to point out that in most manifold swaps, the custom manifold has a definite weight advantage plus performance benefits over the factory stocker. But in the '68 Corvette it's mainly a power-increasing factor as the stock manifold is a super low guy cast of lightweight aluminum. In '68 Chevrolet utilized very low manifolds which did little for performance, but enabled them to go for a lower hood line. When making manifold swaps on late Corvettes ('68-'69) it's best to check clearance hood out before pulling the top of the engine apart. All installation problems can be solved by mating a '67 hood scoop to the '68 or '69 hood. And, you end up with a jazzier machine to boot. We would also like to make mention of the fact that the Edelbrock manifold will also accept the 950-cfm Holley three-barrel without any modifications, which is good to know if you ever intend to go for a wilder cam, gears, etc.

Intake surface of the heads must be scraped clean for a perfect manifold fit. Be careful not to let scrapings fall into the valley. Next bolt manifold in place and tighten.



The hot setup quad is the 780-800 cfm Holley quad as used on the old 425-hp 427 Vette. Jetting should be altered as outlined in the text. Carb linkage arm should be checked for full throttle operation and drilled if necessary for the cable hookup.

To facilitate the installation it's wise to also purchase an Edelbrock Installation Kit #2281K and, if you plan on retaining the air induction system also purchase kit #2282. When installing the manifold you must use new seals and gaskets, and carefully scrape the intake port surface of the heads to obtain a clean mating surface. Always cover the valley of the engine to prevent gasket scrapings from getting into the oiling system and valve train. On automatic-transmission-equipped cars (not shown here) install a special ball end cap screw in the lower hole of the carburetor bell crank. Use the stock clip to hook up the auto trans rod.

Best performance will be obtained if the PCV hoses from the valve cover to the manifold are blocked and the valve

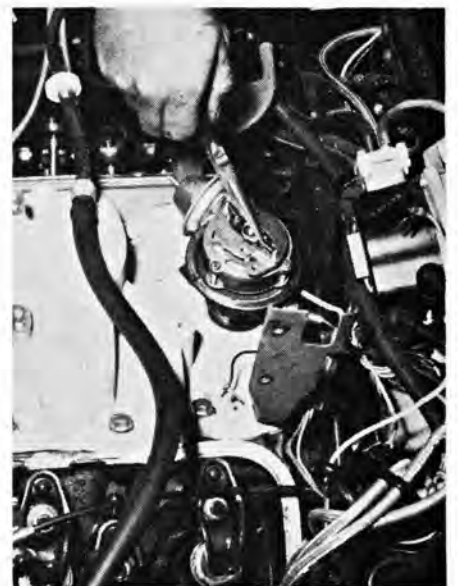
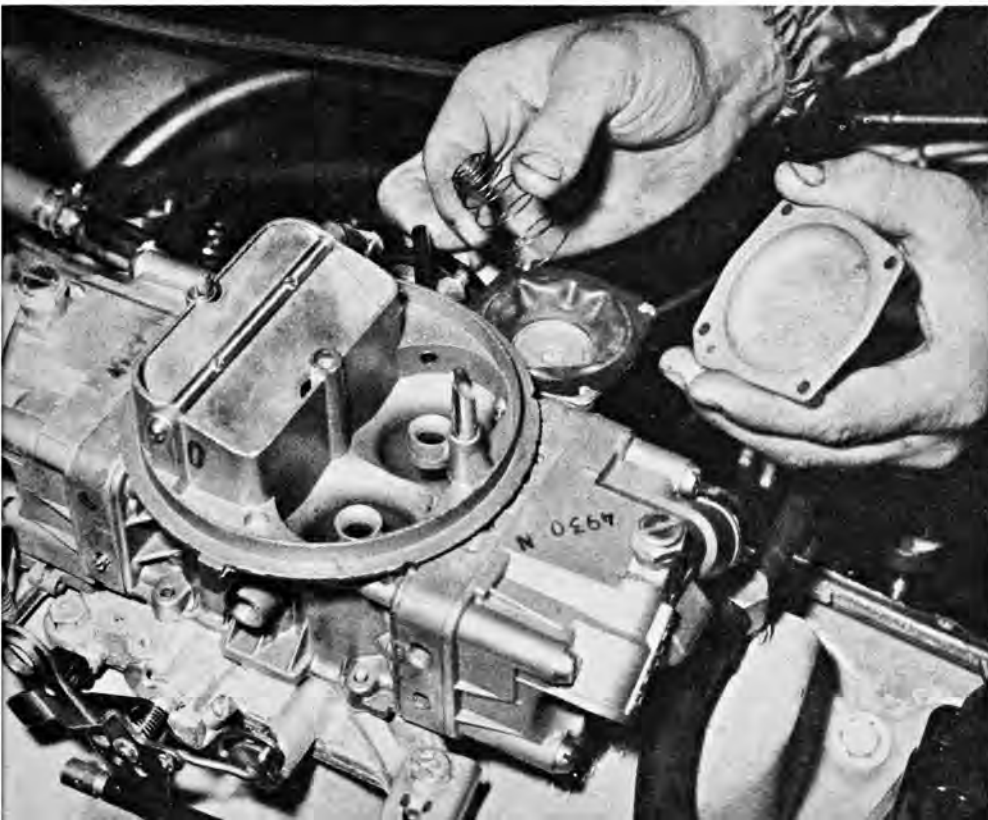
covers fitted with grommets and breather caps. Connect fuel lines with special fuel block and hose. Cut stock 3/8-inch steel fuel line 12 inches from the fuel pump and use a Corbin clamp to connect the 3/8-inch neoprene hose over the steel line. A chrome dual fuel line kit comes in handy for installations of this nature. Fittings are also supplied for the power brakes and for the vacuum advance. The vacuum advance should be disconnected and the distributor recalibrated for full centrifugal advance and a quicker curve.

The dual-gas-line Holley #3310 carburetor is an excellent choice for this engine. Out of the box this carburetor comes with #70 jets in the front and #76 jets in the rear. This type of carb has front and rear jet plates (not a

metering body as used in the three-barrel) and all you have to do is remove the plates and screw in the jets you want to try. On a 390-hp 427 Corvette with normal 4.11 gears and four-speed, the best jetting worked out to #71 and #73 (driver's side) in the front plate and #79 and stock #76 (driver's side) in the rear plate. The spring in the secondary diaphragm was removed for quicker secondary control and operation. The vacuum system can be blocked and replaced with full mechanical linkage if the car is fitted with healthy gearing to prevent bogging at normal speeds.

In some installations you might have to cut out some hood insulation material to make room for the air cleaner. The carb should be fitted with a

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Advance curve should be quickened for max efficiency with richened carburetion. Secondary diaphragm spring can be removed in most cases after unit is performance tested.

a four-speed in a '55-'57 Chevrolet. It's a bolt-in swap with either the T-10 or Muncie, as both have the same bolt pattern as your original '55 '57 stick bell housing. A specialty floor gearshift linkage tops it off. Another popular one is a four-speed in a '56 or '57 Ford, especially models with the 312 cubic inch Thunderbird engine. Here you would have to use a T-10 four-speed to fit the original bell housing bolt pattern. The new Ford T&C would require changing the bell, too, or using a special adapter. And, of course, the T-10 would need to be a Ford version of this one, as GM and Chrysler versions have a different bolt pattern. There are quite a few of these around in the junkyards, however, as Ford used the T-10 from '61 through '64. This is also a bolt-in swap if you can find the Ford T-10.

Quite a few fellows are interested in putting four-speeds in Dodge and Plymouth stick-shift models of the early '60s. This is a bit more complicated because Chrysler didn't use the same bell housing bolt pattern for four-speed and three-speeds. You will need to swap the bell housing, too. But otherwise the job is straight forward, and only requires a special bracket to adapt the rear trans mount to the four-speed. The best way to go on this one is to look for a GM or Chrysler-version T-10 in the junkyards, and then use a '63 factory bell housing for the A or B block. You can buy a used T-10 for \$150 or so, where there is very little chance of finding a junk Chrysler four-speed.

And so it goes. Lots of trans swap possibilities. And here's a good way to hop up your performance and fun with a minimum of expense and complication. A trans swap is many times easier than an engine swap. Good luck!

25 HP BOLT-ON continued

good cleaner such as the open top Stellings setup and there should be at least 1-inch clearance between the top of the air cleaner and the hood. On many Chevilles there is enough room for a Ram Air setup which can do wonders at high speeds for the 396/427.

To finish off the bolt-on hop up the timing should be corrected to anywhere from 38 to 42 degrees total with a suitable curve and Sunoco 260 in the tank. Then you should be able to reap the benefits of the newly-found 25 horsepower.

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