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TECH

# C-10 PERFORMANCE

## We Gained 46.2 Horsepower!

BY JOHN GILBERT

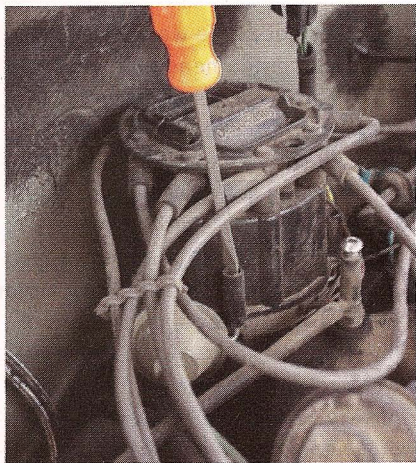
**W**hen we prepared our '79 Chevy Big 10 for Americruise, we knew there wasn't going to be enough time to take care of everything we wanted to do. Since we had only owned the truck for a short while, there were a lot of unknowns when it came to the truck's maintenance history.

The first thing we went after was the cooling system to make sure we had new belts, hoses, and antifreeze, followed by a thorough

renewal of all the lubricants. One of the areas where the Big 10 didn't seem to need a lot of attention was its state of tune. Running around town at sea level in Southern California, the truck ran pretty well, with only a very slight occasional hesitation. Our opinion that the Big 10 ran good enough was further reinforced when we installed a Magnaflow catalytic converter, went to one of California's state-approved test-only centers, and passed the smog test without a problem.

With our concerns about the 350-inch Chevy put to rest, we left for Americruise with our sights set on a first night destination of Grants, New Mexico. Leaving early in the morning before traffic, the climb out of Orange County at 70 mph takes one from just a few feet above sea level to a 3,811-foot summit at Cajon Pass in about an hour's time. The rapid ascent up Cajon didn't present any real problem for the Big 10, but adhering to our newly adopted policy to try and break the truck as close

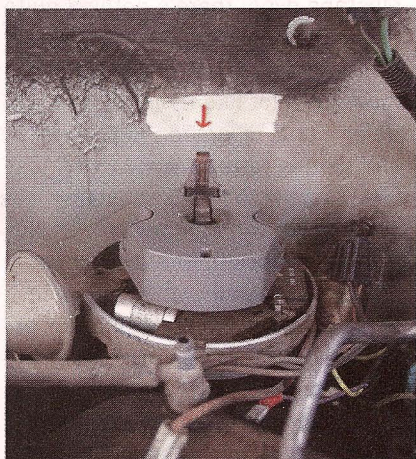




**1** The first step was to remove the Delco-Remy HEI's distributor cap and spark plug wires, being very careful to note the position of the No. 1 spark plug on the distributor cap.



**2** Next, we matched up the No. 1 spark plug terminal from the HEI cap to the new Performance Distributors DUI cap. Failure to do this step properly can result in having to re-establish the engine's initial timing.



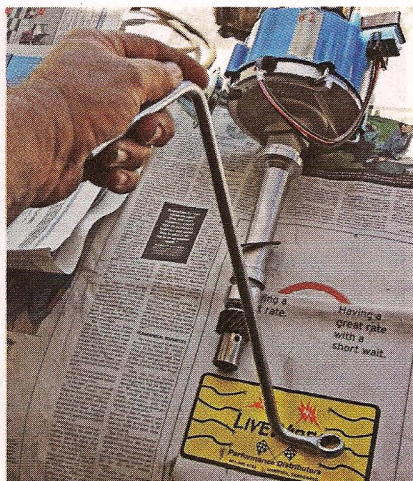
**3** We found the best way to swap in the new DUI distributor was to position the Delco-Remy distributor with the rotor pointing to a mark on the firewall.



**4** As the Delco-Remy distributor was removed, it was essential to mark where the rotor pointed on the firewall, as this will be the mark to point (aim) the DUI rotor at when it is installed.



**5** This is the retaining bolt on the distributor clamp that must be loosened just short of removal. The distributor clamp will slide back for clearance.



**6** A special distributor wrench is a must in order to access and remove the distributor clamp bolt. It will be reused to install the DUI.

to home as possible netted only 80 mph up the grade with the gas pedal glued to the floor. Once we hit the high desert's plateau, the truck was happy cruising between 75 and 80 mph, turning around 2,000 rpm and getting not bad gas mileage doing it.

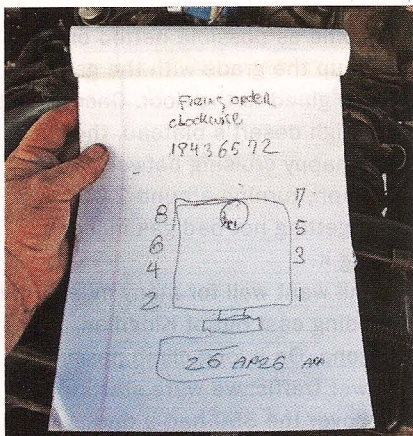
All went well for many miles until heading east out of Kingman, Arizona. On a long climb passing slower traffic, we were starting to discover the 350 had a dark side lurking when it dropped from third into second passing gear. At full throttle the revs shot up for a second or two, followed immediately by the engine falling flat like it had just been shut off. It would then turn back on when the revs had dropped below 3,000 rpm. On flat stretches of highway, the truck was still more than capable of getting a speeding ticket, so we just cruised around the 75-mph speed limit and made sure not to kick the tranny down into second passing gear when we needed to get around slower traffic.

It wasn't until we pulled into Denver on the return trip home that the 350 showed any more signs of a problem. As expected based on past experiences driving a carbureted motor through Denver, the city's high altitude really had our engine running out of breath. We stopped for a while to visit with Todd Gold at Gennie Shifter and then tour one of the most amazing collections of old auto parts at his Vintage Auto Parts location in the heart of downtown Denver.

Nursing the Big 10 out of Denver through city streets with the dying motor running extra sluggish was a little tricky, but we made our way onto Interstate 70 and continued our journey toward home. It's not something a person wants to dwell on, but the open highway can be an easy place to be killed with just a little bad luck. Our bad luck reared

# C-10 PERFORMANCE

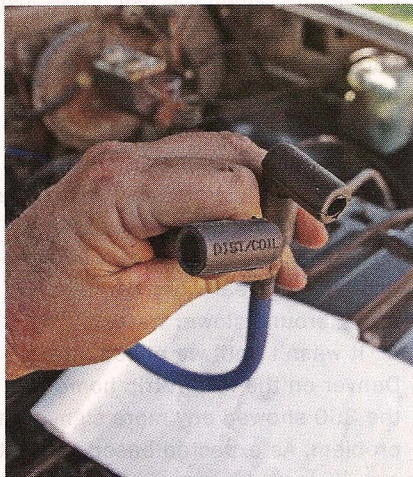
## We Gained 46.2 Horsepower!



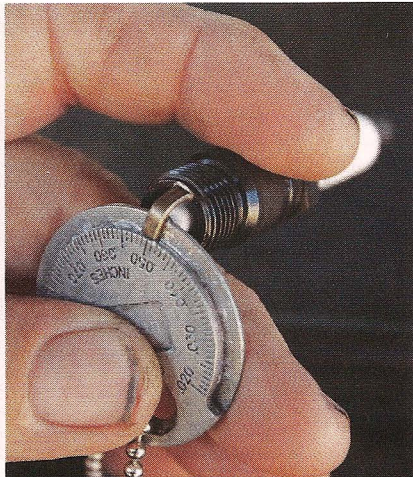
**7** Creating a worksheet with the engine's firing order (on the intake manifold in front of the carburetor) and rotation (clockwise) along with a chart showing the position of each individual cylinder will serve as a (very) helpful aid.



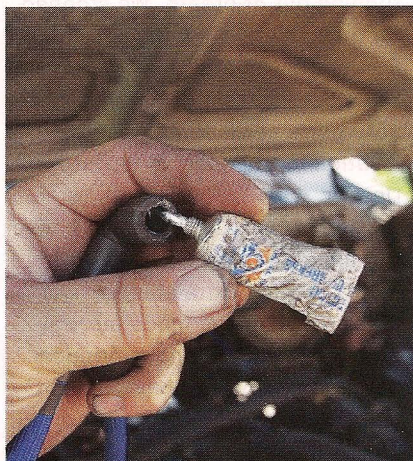
**10** It would be hard to imagine a spark plug that looks any worse than the ones we took out.



**8** It was important to note the ends on the LiveWires were marked on the distributor cap boots along with the spark plug numbers.



**11** Performance Distributors' DUI with a 50,000-volt charge allows the spark plugs to be gapped at 50 thousandths.



**9** We applied dielectric grease (included with the LiveWires) to both ends of the spark plug wires.



**12** We used an anti-seize compound on the spark plug threads before they were installed.

its ugly head while we were pulling the steep grade heading toward the Eisenhower Tunnel at around 65 mph when we slipped up and allowed the truck to drop into second passing gear to keep up with traffic. It was an absolute nightmare; our speed plummeted to zero mph when the 350-inch Chevy motor felt like it had just sucked the fuel line flat. Instantly, it looked like we were going to be run over by a herd of very aggressive Denverites obviously unconcerned with our situation. A quick whip of the steering wheel had us out of one bad situation and into another—we shot out of traffic onto I-70's crevice-wreaked shoulder with the Big 10 bottoming out hard at all four corners of the suspension with every deep hole it fell into. We had unintentionally provided CPP with some real-world testing that proved their new trailing arm suspension really handles and can take a severe beating to boot.

The rest of the trip driving home in the middle of a record summer heat wave was uneventful, but we knew the very first thing we had to do when we got the Big 10 home: make it run right.

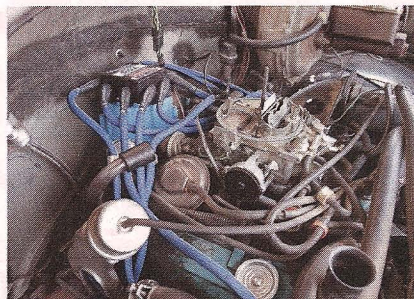
Step one was to drive the truck over to Primedia's tech center and make a baseline run on our in-house Mustang dyno; there's nothing quite like a good chassis dyno to find out where things are at. Horsepower theory is a lot like trying to lose weight, only reversed. Adding weight and getting fatter is easy to do, just like it's easy to make an engine lose horsepower through neglect. To illustrate the opposite of our example, it's harder to make an engine gain horsepower, much as it's harder to lose weight. That said, the Mustang dyno revealed that our poor old Big 10 was only putting out 118 horsepower to the rear wheels. The news was shocking, but we were very excited to take on the challenge of

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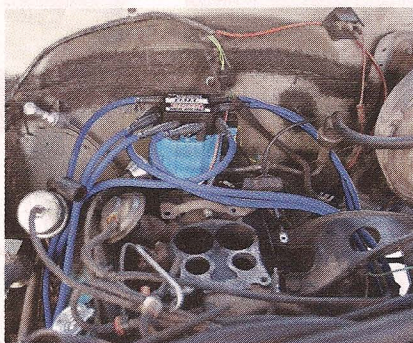
## We Gained 46.2 Horsepower!



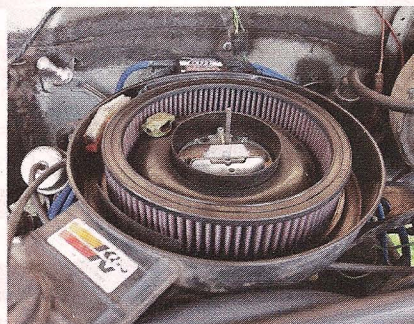
**13** The LiveWires were installed by starting with the No. 1 plug wire, followed by the next number in the firing order, adhering to the engine's clockwise rotation.



**16** In addition to rebushing the throttle shafts and epoxying the Welch plugs in, all SMI-built Quadrajets are converted to have adjustable intermediary metering rods that can be adjusted with the engine running.



**14** We were not concerned with tucking the LiveWires tightly to the engine until after we set the engine's final timing.



**17** After having SMI go to the trouble of blueprinting our Big 10's Quadrajets, we felt the carburetor deserved a premium high-performance air cleaner element from K&N.



**15** Having SMI rebuild and blueprint our Big 10 Quadrajets meant we would be getting our core back and not something out of a pile of unidentifiable Quadrajets from an unknown previous application.



**18** Although our distributor and carburetor were identical to stock on the outside, the key to obtaining a boatload of extra horsepower for the Big 10 was the availability of custom-ordering our engine's exact needs from Performance Distributors and SMI.

adding more horsepower with just a few carefully selected upgrades. The first on our list was the ignition.

Starting with the spark plugs, we pulled out a set of worn-out Autolite 26 spark plugs and screwed in eight brand-new Autolite 26 plugs. Next in line was to replace the Big 10's set of crummy generic plug wires with a custom-fit set of LiveWires. Of course, these improvements would be in vain if we didn't upgrade the quality of the spark being fed to them. Our finishing touch on the ignition system was to replace the stock Delco-Remy HEI distributor with Performance Distributors' Street/Strip GM DUI distributor, complete with its lethal 50,000-volt integral coil.

From here the only other modification we made to the Big 10's 350-inch engine was to have Sean Murphy, the "King of Quadrajets," at Sean Murphy Induction (SMI) rebuild our original Quadrajets and incorporate a few of his high-performance tricks into it.

After an easy-to-do installation of Performance Distributors' DUI, LiveWires, and a set of Autolite spark plugs followed up with plopping on the SMI-prepared Quadrajets, we hopped in the Big 10 and took another shot at the dyno. The results were absolutely incredible: our output to the rear wheels had jumped to an amazing 164.2 horsepower, a whopping increase of 46.2 horsepower. *CCT*

### SOURCES

#### PERFORMANCE DISTRIBUTORS

901-396-5782

[www.performancedistributors.com](http://www.performancedistributors.com)

#### SEAN MURPHY INDUCTION

714-843-9169

[www.smicarburetor.com](http://www.smicarburetor.com)