

Stage tuning the Honda 750: Part Four

How Bolt-On Are The Bolt-On Carbs?

Two out of three ain't bad

By PAUL DEXLER

The last installment of the bolt-on story was concerned with headers and pipes. Our findings were that most of them could be considered bolt-ons, but none of them provided any power increase without some carb modifications as well.

This month we devoted our attention to getting the mixture in, rather than out. Our luck was better, too. We tried three systems, one of which was a true bolt-on, and two of which actually gave a substantial increase in performance.

Our definition of a bolt-on is the classic one. That is, you unbolt something from the stock bike, take your new part out of the box, bolt it into place, and have the bike run at least as well as before, if not better.

Most bolt-ons, we've found, are actually assembly kits. You remove parts from the stock bike, take a collection of parts out of a box, spend some hours or even days assembling them, part-chase for the little things not included in the kit, then bolt the resulting assembly into place, and have the bike run etc., etc.

Three manufacturers responded to our request for bolt-on carburetor conversions for the Honda. Two of them, from Wheel Specialties and R. C. Engineering, use the Weber DCOE40 carburetor. The other, from International Engineering, in Seattle, uses the Lake Injector.

We'll take them in turn, in the order we installed them, and tell you what we found.

WHEEL SPECIALTIES WEBERS

Wheel Specialties' kit came in a large box, with two Weber carbs, a manifold, a package of hardware and an exploded view with jetting instructions.

We commenced assembling the kit, in the hope that what we had was almost a bolt-on in the true sense of the word. What we had was an assembly kit.

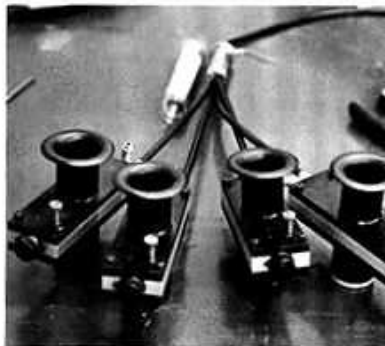
First, the existing throttle linkage had to be removed from both carbs. Some of the existing levers have to be swapped from left to right, others have to be replaced with parts from the package of hardware.

The carbs are in their boxes, just as they are sent from the factory in Italy. They are assembled by typical assembly-line workers, which means that typical assembly-line glitches can arise. Of course, one did.

The nut holding the linkage to the throttle shaft on one side of one carb had been run down so tight by the Italian installer that the threads had stripped. Twenty minutes' work with increasingly harder wrenches produced nothing save some sore fingers and evil language.

Eventually, a nut cracker was sent for, and the nut removed. Happily, we had a source of metric nuts to reinstall the levers, or we would have had to wait for a replacement from the factory.

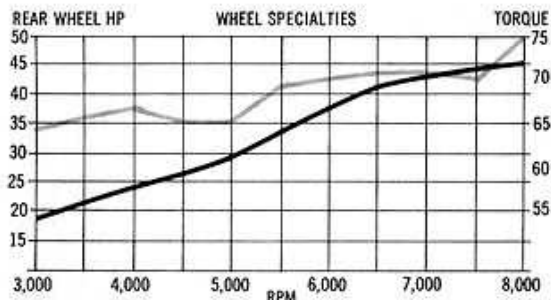
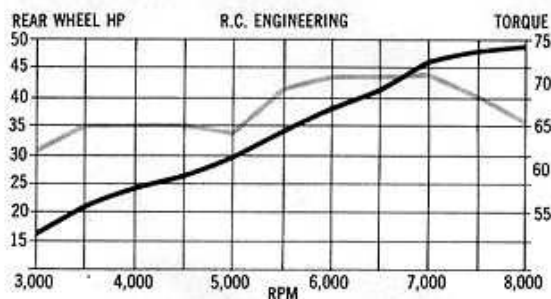
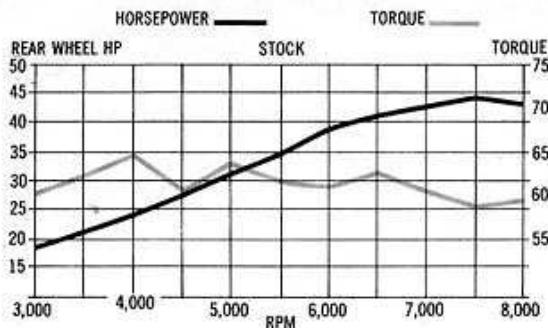
The rest of the linkage went together uneventfully, and the carbs were shortly bolted to the manifold. The stock air cleaner and the four



Weber carburetor kits from Wheel Specialties (top) and R.C. Engineering (middle) were installed, along with a set of Lake Injectors (bottom).

Keihin carbs were removed from the Four, and we were ready to begin.

Almost. The hose clamps from the stock carb set have to be used to install the new rubber hoses that



connect the Webers to the Honda's intake ports. The new rubber hoses are short and fat. So short that the clamps are almost touching each other, and so fat that the clamps have to be unscrewed all the way to go on.

The little ears on the frame that hold the air cleaner in place have to be bent up, since they act as supports for the carbs.

With much grunting and shoving, the carbs were finally mounted on the ports. The instructions say that the manifold may have to be bent in order to fit. We were happy that it didn't, as it looked as if it would break instead of bend at that point.

The grunting and shoving took three people, by the way. It seems very unlikely that one person could exert enough pressure and have enough hands to get them on solo.

Although the Wheel Specialties set of carbs is supplied with air cleaners, we elected to run with air horns instead, since all the other sets came that way only.

With the carbs in place, two other things became instantly apparent. First of all, the crucial fittings to allow the Honda fuel lines to mate to the Webers were not in the kit. Because we were on the dyno, and didn't have a lot of time, we stole the necessary fittings from another set.

Good luck if you're in Nebraska

or somewhere equally far from a large number of well-equipped speed shops.

The throttle return cable was removed from our K-2 model, and the remaining cable routed to the Weber linkage. Oops. A special end is required on the cable to enable it to work the Webers. In fine print on the instruction sheet, it says to use Harley-Davidson part number so and so.

Great. If you're near a Harley dealer, and he's open. Otherwise, it's improvisation time.

We went the improvisation route, again for matters of time. Since the carbs were just to be installed for the dyno test, we decided to operate the linkage by hand from the end of the throttle shaft.

The other important thing that became apparent was that the side covers would no longer fit the bike. The manifold angles the carbs out, and the intakes stick out so far that there's no way the covers can be fitted.

On the right side, that's no problem. If anything, the Honda looks better without the cover there. On the left, it's another story. Without the cover in place, all the electrics are left hanging out in the air, looking untidy and unfinished, as well as being exposed to damage.

Something would have to be done if the bike was to be ridden for any



Weber factory sometimes over-tightens and strips nuts. Nutcracker was used to remove this throttle shaft nut.



Frame tabs must be bent to allow Webers to clear in stock frame.



Kit from Wheel Specialties uses angled manifold, short intake hoses.



Wheel Specialties angled setup allows installation of air cleaners if desired, but prevents replacement of side covers.

length of time with this carb set installed.

With everything in place, the manifold hoses were double checked for air leakage and tightness, and, fingers crossed, the bike started.

It started, and ran fairly well, if

fast. A check of the linkage showed that considerable bending was in order if the carbs were to work in synchronization, and to be able to idle. Ten minutes of playing with pliers solved most of that problem, and the engine dropped to a steady idle.

When everything was warmed up, the dyno run was made. Surprise. When the set was finally installed, it worked as advertised. As the charts show, there was a five- to seven-percent boost all across the range. Significant.

Torque was boosted as well, and the increase was substantial all across the range, from 3,000 rpm to 8,000. Things were looking up. While this is really an assembly kit rather than a bolt-on, it did indeed work and provide us with more power.

R. C. ENGINEERING WEBERS

With the test completed on the Wheel Specialties set, it was unbolted and the unit from R. C. Engineering installed. Unit is a good word, since this Weber set met our criteria for a true bolt-on. Out of the box, the set from R. C. Engineering comes completely ready for installation. The carbs are mounted on the manifold, the rubber intake hoses are installed, and a throttle cable is installed, ready to attach to the twist grip.

Since the intake hoses are stock Honda units, there was no problem mounting them onto the ports. The carbs are mounted with a supplied bracket that clamps over the frame top tube. The ears that hold the stock air cleaners still have to be bent out of the way, but only for clearance reasons. They don't have to have anything bolted to them.

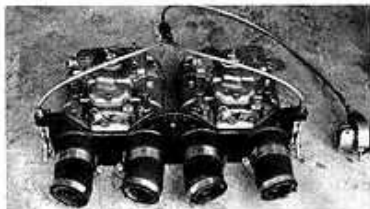
Proper fuel line connections come with the sets, so attaching the stock fuel lines is a matter of pushing them onto the fittings. The entire installation took 15 minutes after the stock equipment was removed. Oh yes—the side covers still fit.

If we seem overly full of praise for this unit, it is because we have at last found a true bolt-on piece of speed equipment. It's increasingly rare to find something that anyone out in the boondocks can install on his bike without half a dozen trips to hardware stores or bike shops to get what the speed part supplier left out.

Again, everything was double



Single clamp holds R.C. setup to top frame tube. Design allows replacement of side covers, but not use of air cleaners.



Weber kit from R.C. Engineering comes complete with throttle cable, uses stock Honda intake hoses.



Cable had to be shortened, stripped and fitted with new ends before it could be installed in the Lake slides.

checked, and the dyno run begun. It was instantly apparent that the jets were not right. R. C. Engineering recommends that their unit be installed with one of their headers, and it was set up too rich for the stock exhaust system.

It was the work of no more than three minutes to go to one size smaller jet in each carb, and another run commenced.

Again, a substantial increase over stock power. A full ten-percent increase at the top end, with a corresponding boost in torque. The results show in the chart.

To make sure that the jet size was now correct, another run was made with an even smaller jet size. Oops. Some high-speed misfiring made us back off instantly, but we had already eaten the plugs.

We should state at this point that between the beginning of this series of articles and the present article, the Honda has been used hard. It was tuned when first received, and since then has performed as a staff workhorse, as well as the test bed for the speed equipment we're trying. If tested in stock form, there's a good chance it wouldn't put out as much power as it did when we first got it.

LAKE INJECTORS

We decided to play it smart, and try to do as much of the assembly

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on the Lake Injectors before getting them to the dyno room as would be possible.

That turned out to be one of the wisest moves we've ever made. It was kit assembly time right from the start.

As received, the box from International Engineering, the distributor for Lake, contained four 25mm Lake Injectors and four sets of Allen wrenches and needles. A page of tuning instructions was also included.

Looking over the parts, it was immediately apparent that more parts would be needed to complete the kit. First of all, we needed a throttle cable that could pull four separate carbs at once. A trip to a Honda dealer supplied the cable for a K-O model. Second, a supply of flexible fuel line was also required, since the fuel inlets on the Lakes move up and down with the slides.

In addition, we needed some new cable ends, since the ones on the Honda cables wouldn't fit the slides in the Lakes, and our staff Lake expert recommended a pair of fuel filters as well. (He'd run a pair of Lakes on his Triumph a year or so back, and had the bike go horribly fast until the needles froze from dirt in the fuel.)

Fitting the cable to the carbs required cutting, measuring and a not inconsiderable amount of soldering.

Setting up the fuel lines required more cutting and measuring, and then some careful fitting to make sure that everything cleared the frame and the throttles could open and close all the way.

In addition, the twist grip now required an iron hand to open it against the pressure of four strong return springs.

Everything was once again snugged as much as possible before starting. The carbs fit into the stock Honda intake hoses, almost. They have to be run in all the way, and then the clamps tightened all the way, to be sure that there are no



Ready for reassembly and installation.



Extra-flexible fuel line has to be used with Lakes, since intake fittings move with slides.



Team of experts struggled to get the Lakes to run.

leaks. We double, and even triple checked for air leaks.

The fuel tap was turned on, and the bike cranked. And cranked. One cylinder began to fire, then another. The engine picked up speed, but didn't sound right.

A quick check showed that only two cylinders were firing. Lots of knob turning and adjusting followed. Cylinders one and two finally started to fire, hesitantly.

Before we go further, let's say that it took about five hours from the box opening to the starter button pushing.

The bike was fired again, and again, much burbling and misfiring. A screech of "Shut it off!!" came when it was discovered that the number one pipe was turning purple.

Cylinders three and four were far too rich, and one and two were as far too lean. More adjusting and diddling. The staff Lake expert was ready to give up. No matter what we tried, there seemed no way to get the carbs even into the ball park, much less into producing more power.

We called on our staff Honda expert, Russ Collins. If there's any man around who can make a Honda run right, he can. He told us to leave the bike with him, and come back the next day.

Next morning, we arrived to find that yes, he'd got the carbs into the ball park, and then run out of adjustment. New needles were installed. Back to go again. Meanwhile, a compression check showed that a few more tries might result in a fried valve, or worse.

We thought at first that it was just ham-handed ineptitude on our part that kept the Lakes from working. However, one member of the staff who has run them successfully on his own bike couldn't get them to work.

Russ Collins could set them up to work. But that's the point. If it takes a Russ Collins to make them work, then he'd better be included in the kit. We feel that if something is supposed to be on a bolt-on performance-improver, then it should be something someone can get in the mail, install, and have work, without destroying his engine in the process.

Next time, we'll see what happens when we add a pipe to the Webers, and maybe put on a magneto on top of that.

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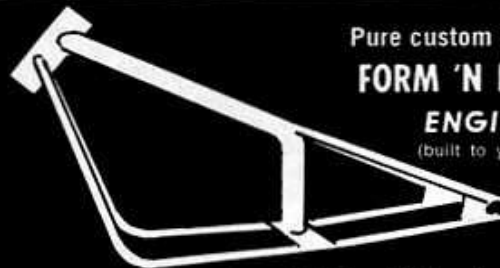


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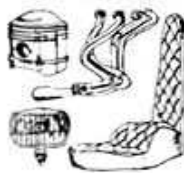
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