

COOKING WITH THE IDF

Updating a classic design for better air flow and more horsepower

BY JEFF HOLIFIELD

Unquestionably, the most popular line of performance carburetors used on VW's venerable boxer engine come from "Weber Carburetors" of Bologna, Italy. Over the last three decades, various Weber designs have been installed on air-cooled engines. By far and away, the dual-throat IDF series has proven to be the most popular with professional VW performance tuners, as well as home hobbyists.

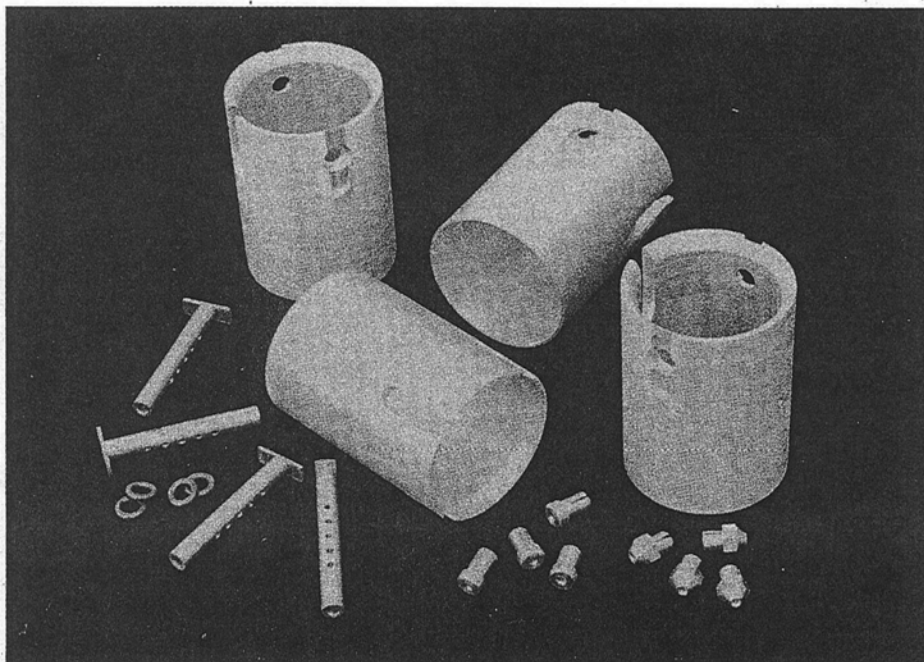
Used in single and dual carburetor applications, the Italian-designed IDF is a true work of art, and is currently available in 40mm, 44mm, and 48mm bore sizes. In addition to the three basic sizes, the IDF offers an incredible amount of flexibility, thanks to changeable main jets, idle jets, air correction jets, accelerator pump jets, emulsion tubes, and venturis. The seemingly endless combination of parts allow the Weber IDF carburetor to be tuned to just about any performance engine combination.

For all its adjustments, there is one limitation of the IDF carburetor which is not easy to overcome. Once dual carburetors are installed and tuned to a particular engine combination, there has not been a cost-effective means to increase horsepower from further modification. Traditionally, if you wanted more power from carburetion alone, you would have to step up to the next size larger IDF (i.e., from 40mm to 44mm). In today's market, that represents a major investment (somewhere in the neighborhood of \$600).

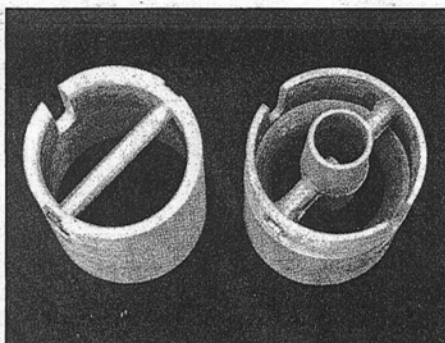
Five years ago, CB Performance (559/733-8222) of Farmersville, California, created an "Update Kit" that proved to be a solution to this shortcoming. A simple bolt-in modification, the update increased the air flow through the carb, and thus the horsepower potential. Problem being, the modification only worked on dual-throat Dellorto DRLA carburetors.

Though similar in design, CB Performance just couldn't get the Dellorto DRLA update kit to work on the Weber IDF carburetor as the Weber body casting was just too different. The project was shelved, that is, until a few months ago when one of CB's designers came up with an all new design for the IDF carb. Within weeks, a prototype IDF Update Kit was installed and it worked beautifully.

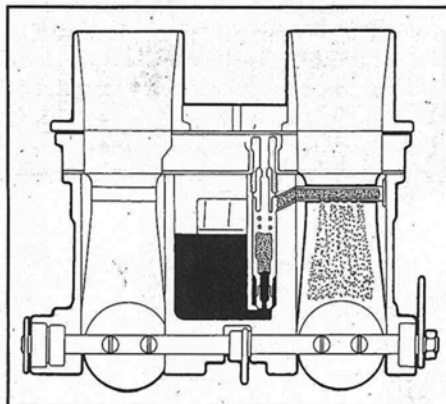
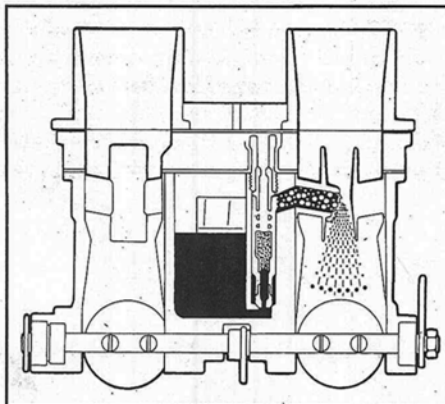
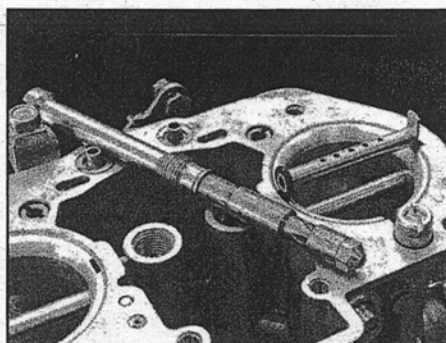
Now in production, the IDF Update Kit replaces the Weber auxiliary venturi and main venturi with CB Performance's new, single venturi and a horizontal discharge tube. The new venturi has a significantly larger I.D. than the stock unit, and allows a higher flow of air through the carburetor for increased performance.



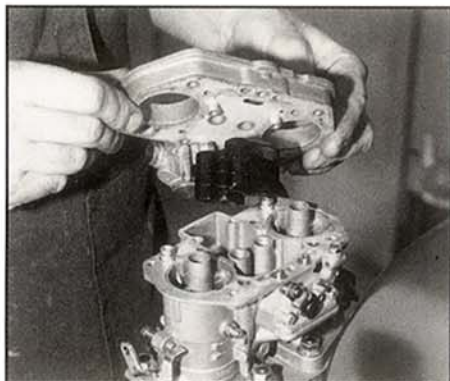
ABOVE, CB Performance's IDF Update Kit comes with four new, oversized venturi, four horizontal discharge tubes, and sealing O-rings. As airflow is significantly increased, a larger main jet is required, as well as a new air correction jet. Both are supplied.



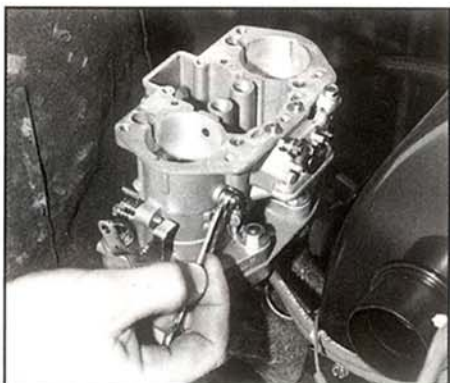
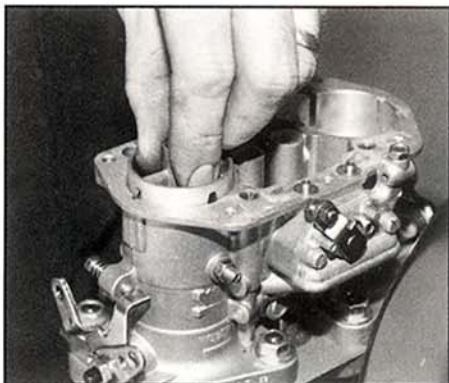
ABOVE LEFT, CB Performance venturi vs. the restrictive Weber auxiliary venturi and 28mm main venturi from a standard 40 IDF. ABOVE RIGHT, the main jet stack holds the main jet and air correction jet, both of which need to be changed. Note second horizontal discharge tube (with O-ring) shown upside-down for comparison.



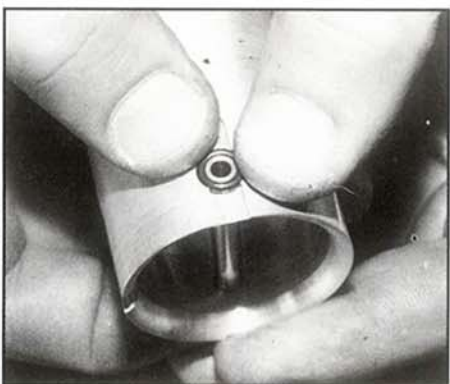
ABOVE, the horizontal discharge tube carburetor is nothing new. A means to simply fuel distribution, it dates back to pre-WWII. The left diagram shows the standard Weber IDF use of an auxiliary venturi, and main venturi to pull fuel into the combustion chamber. The CB kit replaces these items with a single, larger diameter venturi and spray bar.



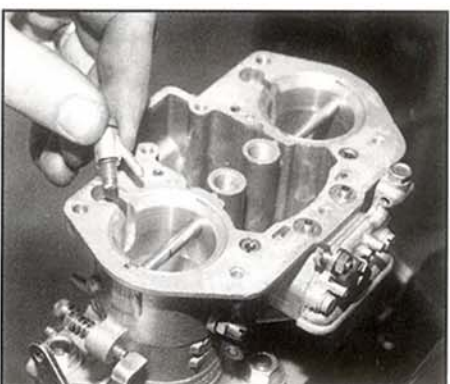
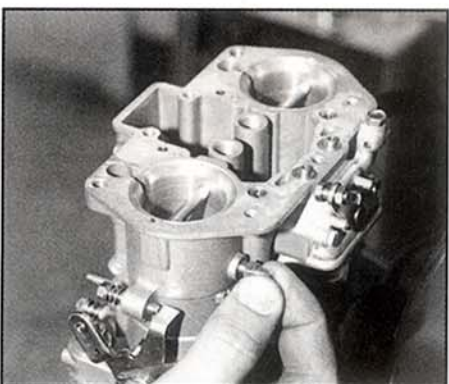
The installation of CB's IDF update kit is straight forward, and easily accomplished with the carburetors still mounted on the engine. Nevertheless, if it was our engine, we would remove the carbs just to make sure nothing gets into the combustion chamber by accident. ABOVE and CENTER, remove the jet stacks, linkage, and carburetor top. Note the float is attached to the top ... do not set the top down on the float, turn it upside down. ABOVE RIGHT, remove the accelerator pump jets, and the lower copper gasket.



ABOVE, removing the auxiliary venturi (a.k.a. boost venturi) is often easier said than done, particularly on older carburetors. If fickle, turn the carb on its side, open the butterfly, and with the help of an appropriately sized wood dowel, lightly tap out the booster. ABOVE CENTER and RIGHT, loosen the lock nut, and remove the set screw holding the main venturi in place. Remove the venturi.



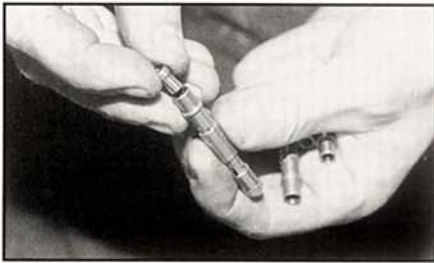
ABOVE, working with the parts supplied in the IDF Update Kit, select one horizontal discharge tube, and one CB Performance venturi. With the perforations facing downward, slide the discharge tube into the venturi. ABOVE CENTER, take a sealing O-ring, and push over the end of the tube. ABOVE RIGHT, slide the venturi assembly into the IDF body, making sure the O-ring is located toward the center of the carb. Note the location of the clearance cut for the pump jet, and the small dimple (arrow) for the set screw.



Repeat the above procedure for the bore of the IDF. Note the horizontal discharge tube will need to be slipped in from the opposite side as the first one for the O-ring, clearance-cut, and set screw dimple to be properly located. ABOVE LEFT, install the venturi set screw with a screw driver, and tighten with a wrench. ABOVE CENTER, install the accelerator pump jet with its lower copper gasket. ABOVE RIGHT, add top (with float and base gasket) and lightly tighten screws in a criss-cross pattern.

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Before returning to the main jet stacks to the carburetors, install the supplied main jet and air correction jet (shown).



Back-to-back dyno testing, CB Performance's IDF Update Kit clearly showed a gain in torque, with 12% more horsepower at 5,000 rpm.

Recently, we went to CB's headquarters for a hands-on demonstration of the IDF Update Kit, and were pleasantly impressed with the overall results — 12% increase in horsepower. The engine was 1955cc Type 1 (76mm stroke x 90.5mm pistons), with a very mild 272° duration, .350-inch lift camshaft, as-cast 044 heads with 40mm/35.5mm valves, 7.5:1 compression ratio, 1.25:1 rocker arms, 009 distributor with Compu-Fire module, and heater boxes/header/muffler combo. With properly-jetted, dual Weber 40 IDF carbs, the engine produced 99/100 horsepower at 4,500/5,000 rpm. A real stump puller, there was at least 118 ft.-lbs. of torque from 2,500 rpm to 4,000 rpm, with a peak of 121 ft.-lbs. at 3,500 rpm.

When the IDF Update Kit was installed, along with new jetting (supplied in the kit), we saw power move up to 108/112 hp at 4,500/5,000 rpm. Also, torque increased across the board, with a new peak of 131 ft.-lbs. at 4,000 rpm. Time didn't give us a chance to play with jetting for more tries, though the oxygen sensor and power curve indicated the jetting was fairly close on the 44s fitted.

While not for everyone, we feel CB's IDF Update Kit does offer the performance VW enthusiast a reasonably priced option to increase his engine's performance without having to purchase new carburetion. The kit is an easy install, and can be accomplished with the carbs on the engine (though we recommend they be removed). Follow along with us as CB personnel show the ins and outs of updating a set of Weber IDF carbs. ●

DUNE BUGGIES AND HOT VWs



6456
Weber IDF Update Kit
fits 40mm IDF (2 carbs)

6457
Weber IDF Update Kit
fits 44mm IDF (2 carbs)

Power up your Weber's with CB's new IDF Update Kit. You'll get increased torque, acceleration, and more top end with this all new energy package.

The IDF Update Kit features horizontal spray bars that replace standard bulls eye secondary venturi to produce improved atomization through the power band. Longer taper flow main venturi to improve airflow and special calibration are also included. Each Weber Update Kit also includes a complete gasket and O-ring kit. It's not black magic, just another example of CB's creative engineering and dedication to true performance.

IDF Update Kits are available to fit 40 and 44mm Weber IDF Carburetors. Each kit is designed to convert two carburetors to fast track horizontal spray bar discharge. This is a straight-forward parts replacement installation. Machining, drilling, or altering of the carburetors is not required. If you can get your tool box open, you can quickly pump up your horsepower with this 'easy to install' kit.

*****Will not fit early IDF Webers with cam roller accelerator pump arm without modification*****

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