

Complete carburetor kit includes: (A) intake pipes; (B) fuel line; (C) bracket; (D) throttle linkage; (E) Amal carbs; (F) air cleaners. Not shown are heat riser cover plates, miscellaneous gaskets, bolts and washers.

two to GO

BY AL OUTCALT

SCI How-To Feature:

Dual Carburetion for the Volkswagen

THE desire to boost the power of Volkswagen's air-cooled rear-mounted 36 hp engine, is understandable. The Volkswagen's biggest performance drawback is in the 33-55 mph range, where it badly needs more pep. What's more, the VW engine has plenty of room for souping. With its remarkably low piston speed of only 1254 ft/mile (at full throttle in high gear), it's almost an engraved invitation to modify.

Supercharging sounds like the logical step, and is — except for the problem of cost, a serious deterrent for many owners. But there is an in-between step, a less expensive modification which produces highly satisfactory results: dual carburetors.

The kit installed on the author's 1955 Volkswagen by VW mechanic Bill Haupt costs \$80 and is available from Competition Accessories, Iowa Falls, Iowa. It's made up of only nine basic parts; two type 22 carburetors of the kind used commonly on BMW motorcycles; two intake pipes,

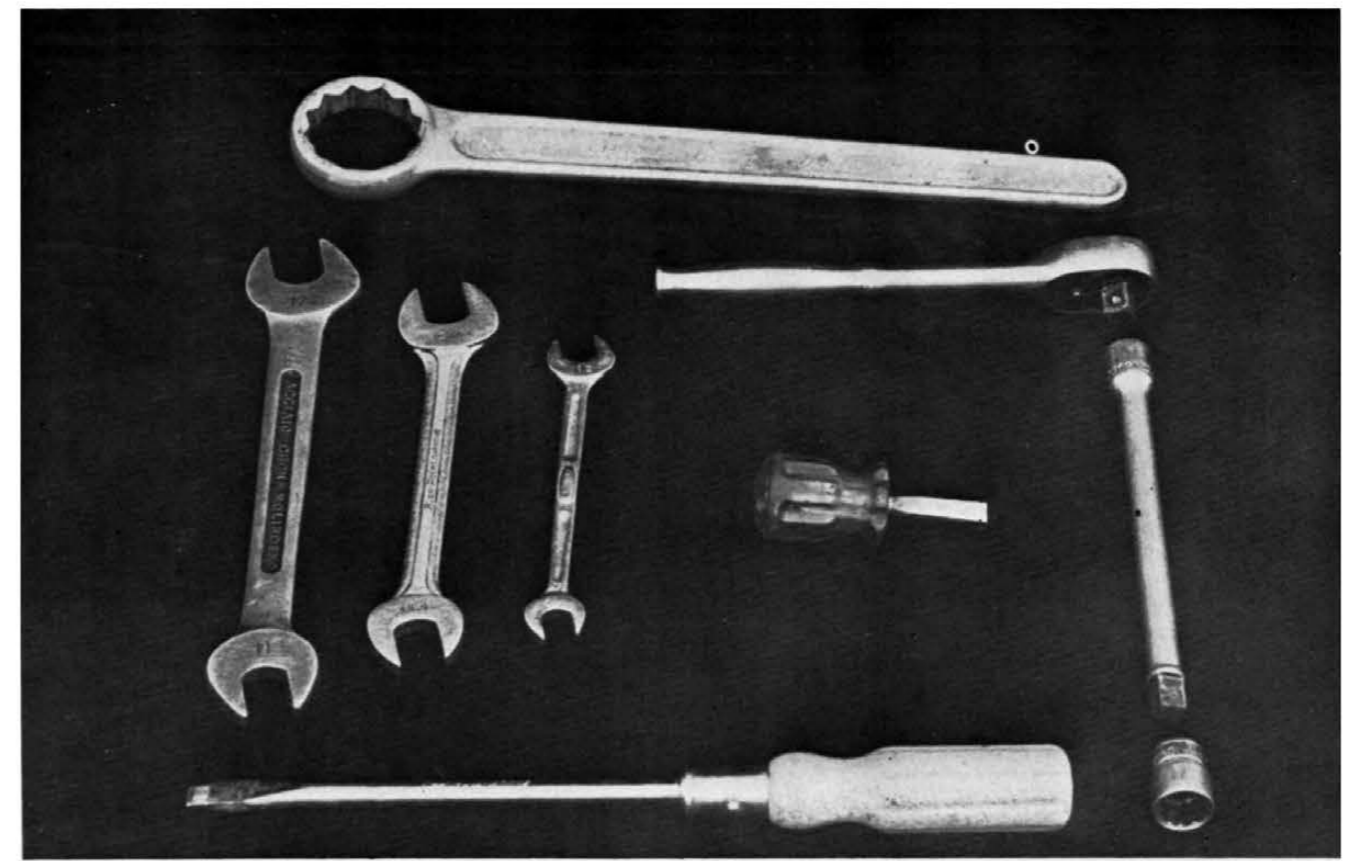
two air cleaners, a linkage support bracket, a fuel line and throttle linkage.

What dual carburetion does for a Volkswagen should satisfy most VW owners. Acceleration in the 35-55 mph range (in third gear) is improved by better than 25 percent; top speed is increased from a flat 70 to 76.1 (corrected). Zero to 60 time is improved by almost six seconds.

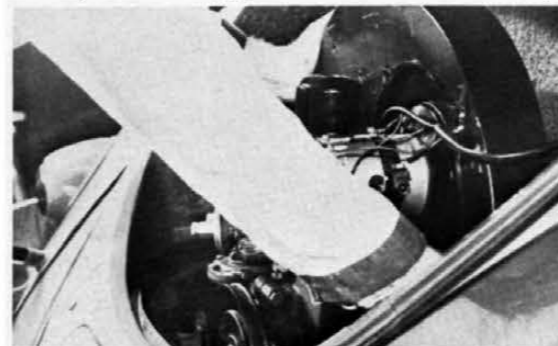
The most noticeable difference, however, is the upper range of each gear. You can wind it up substantially higher (see chart) in each gear, and get the advantage of increased power through the rpm increase. The car should really have a hotter cam to take full advantage of the increased range, but obviously this requires extensive work. (See Sports Cars Illustrated, July, 1955.)

Over-all mileage was also slightly improved, but fuel economy was not as great at top speed as when the car was stock. The only real disadvantage discernible after installation was the noise level, which is considerably higher.

The installation is amazingly simple and requires little more than three hours. What's even more amazing is that



Tools needed for installation are: TOP: fan belt wrench; MIDDLE: open end wrenches in sizes 10, 12, 14, 15, 17 mm, stubby screwdriver, 3/8 inch drive ratchet wrench, four inch extension and 14 mm socket; BOTTOM: 8 inch screwdriver.



Disconnect fuel and vacuum line. Remove: screw at each lower end of the blower housing; screws at intake ring behind housing; generator, coil wiring. Lift housing with generator to get to intake bolts.



Unhook stock throttle linkage. Remove oil bath air cleaner from Solex carburetor, but leave carb in place. Lift out the manifold (and heat riser) along with the Solex.

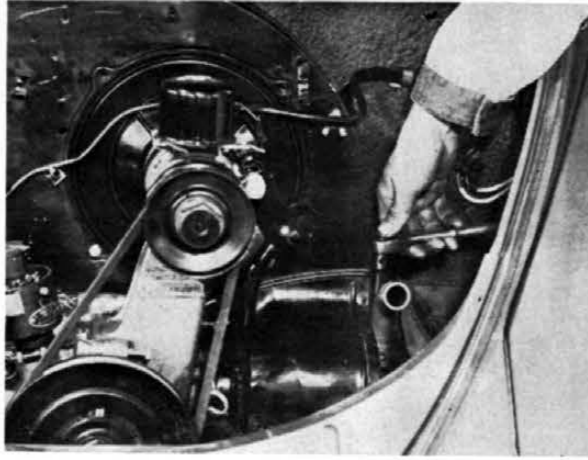
the whole job can be done by one man using seven tools.

Before beginning, jack up the rear end of the car and remove the deck lid. This results in less bending over and provides easier accessibility. Stripping off the stock carburetor set-up calls for only four steps:

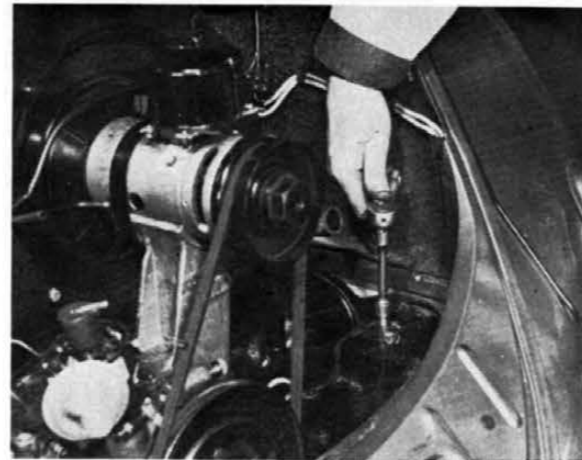
- 1) Remove the fuel line from the fuel pump to the carburetor, and the vacuum line from the distributor.
 - 2) Remove the blower housing and generator. This requires removing the screw at the base of each end of the blower housing, loosening the two screws at the air intake ring behind the blower housing, removing the fan belt, generator strap and wiring.
 - 3) After removing the blower housing, unbolt and remove the manifold with carburetor attached.
 - 4) Replace the blower housing and generator and you're ready to begin the installation. The accompanying photographs show the step-by-step process.
- After the installation is complete, the only tough part of the job faces you: tuning the carbs.

Five main jets are available (sizes 150, 160, 170, 180 and 185) and three sleeves (5/5, 5/4, and 5/3). The long needle inside each carb has four positions. If the car spits back through the carbs, the mixture is too lean; higher numbered jets provide richer mixtures. If the car lags noticeably before picking up, the sleeve has the wrong opening; 5/5 offers the leanest mixture, 5/3 the richest. Finding the right sleeve will eliminate the lag. For each needle position (which is pushed down into the carburetor), the mixture is leaner.

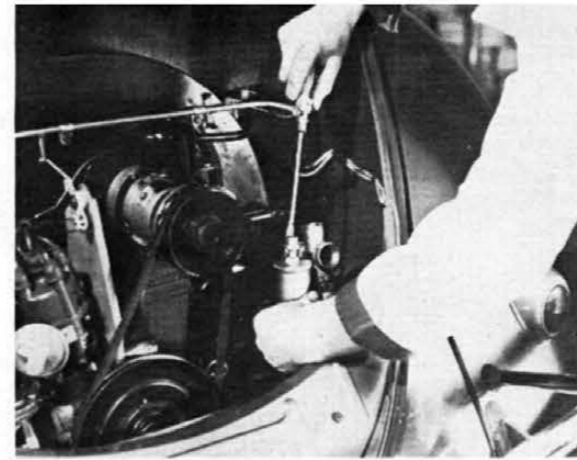
Every Volkswagen engine is different, and only experimentation will produce the right combination of jets, sleeves and needle position. Since the jets and sleeves are relatively inexpensive, it might be more convenient to order all sizes to save time waiting for later delivery. After several hours of testing, the author's car ran perfectly on 170 jets, 5/4 sleeves and the needles in the highest or fifth notch.



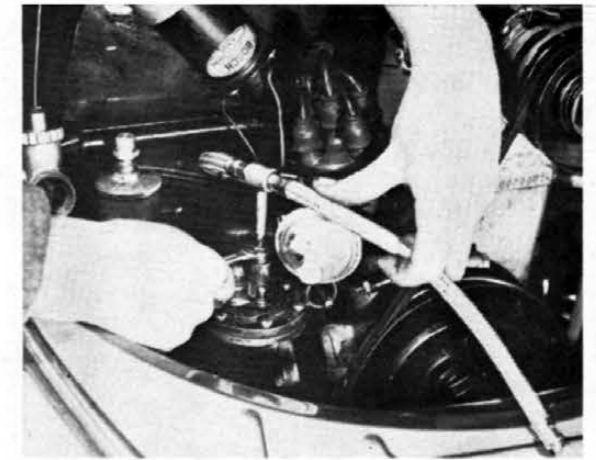
5 Install intake pipes using same nuts which held down manifold. Be sure to replace the manifold gaskets with new ones to insure proper air-tight fit.



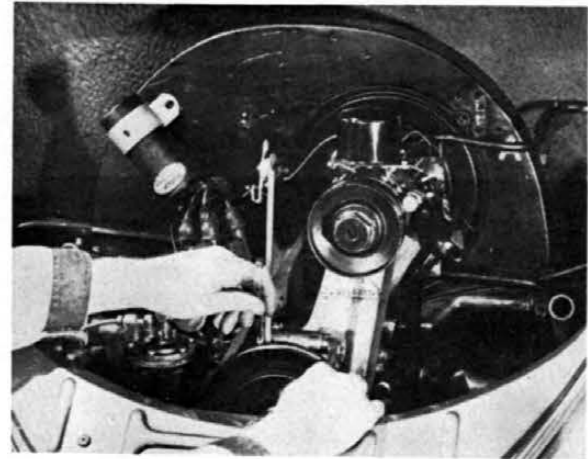
6 Two small plates with asbestos gaskets are provided to cover the heat riser openings. Bolt these in place with the same bolts used to hold heat riser.



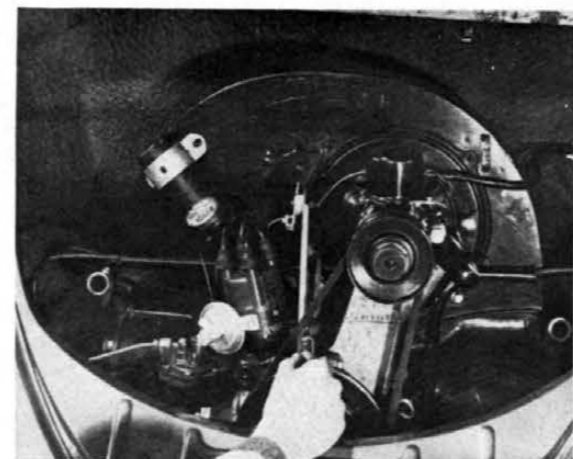
11 Place carburetor on intake pipe, seat it firmly, and secure clamp with screwdriver. Be sure floats go to the inside. Repeat for other carburetor.



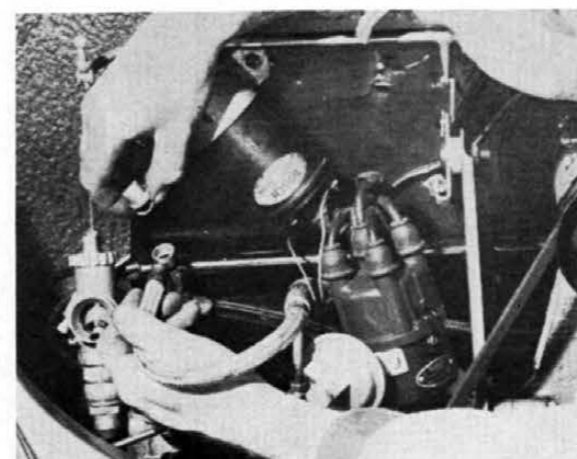
12 Fuel line with nut and ferrule is inserted into the fuel pump and tightened until seated. In later models the fuel pump accepts 6 mm tubing.



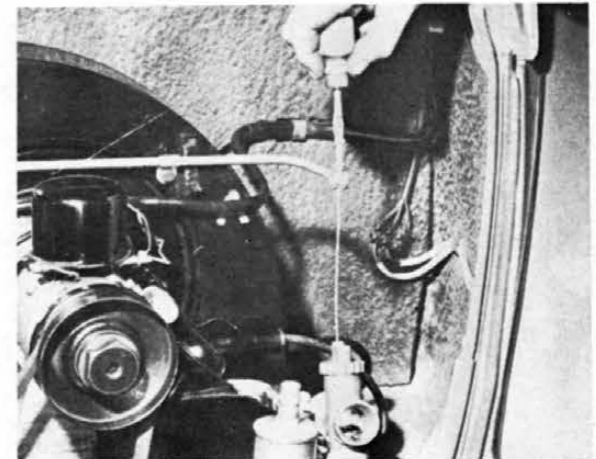
7 Next the linkage support bracket should be bolted onto the crankcase using bolts already on the crankcase. Be sure bracket is clear of pulley and belt.



8 A pipe clamp at the back of the linkage support bracket holds the high tension wiring conduit in position. Fasten it securely in place to avoid rattling.



13 Unbolt cap atop carb and remove 1 washer. Slip loop on end of fuel line over carb top, replace washer and replace cap. Tighten lightly with wrench.



14 Tension is taken up on adjustable throttle valve until throttle valves can rise simultaneously. Accelerator cable is then fastened to throttle linkage.



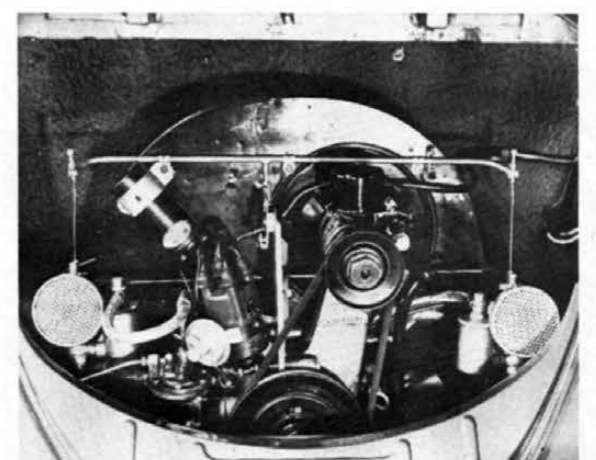
9 Throttle linkage is bolted to blower housing. Be sure each clamp is separated with spacers provided, and guide pin (center clamp) is in slot.



10 Insert plunger, with needle, into each carburetor. Exercise caution here as fit is tight, but smooth. Do not force plunger. Tighten carb cover slowly.



15 Synchronize carbs. With engine warmed, uncap plugs on one side. Back out piston screw (upper, diag. screw) 'til mill turns slowly. Tighten nut, repeat.



16 After air cleaners have been installed, experiment with various sized carb jets for proper fuel mixture. Performance should be considerably better.