



A Supercharged VW

Judson Vane Blower Boosts the Beetle

Using the existing carburettor and inlet manifold, the Judson supercharger fits neatly into the VW's engine compartment. Belt adjustment, however, is somewhat difficult as it is necessary to add gaskets between the blower and the inlet manifold to increase belt tension.

RECENTLY a new formula, "Volkswagen+VW 1500", has come out of Wolfsburg. This is another way of saying that a more powerful Volkswagen is on sale. Those who are content with the size and shape of the 1,192 c.c. model can however get big (or at any rate bigger) car performance from "Volkswagen+Judson" which simply means the fitting of a Judson vane-type supercharger. These units are available in various shapes and sizes for a variety of cars and the complete kit with all the necessary brackets, etc., for the Volkswagen costs £69. It is an American product marketed in this country by Performance Equipment Co. Ltd., well known for their Peco exhaust boosters and speed conversion kits. They do not offer fitting but this operation, which usually takes about three hours, can be undertaken by any competent garage. It is suitable for any VW including the Karmann Ghia; the test car was a 36 b.h.p. (as compared with the latest 40 b.h.p.) model. Thus the owner of the higher output one would find an even greater improvement in performance than we did. To be fair to "our" car we have compared it with the corresponding model but in fact it could out-perform the latest standard version.

Since the engine is a flat-four, the supercharger is conveniently mounted above it and driven by twin V-belts running from the crankshaft. Although perforce long, the inlet tract so achieved is free from unnecessary bends. The standard carburettor is retained with altered jets and is fitted with a special air cleaner. Wisely there has been no attempt made to achieve performance at all costs and a boost pressure of six pounds per square inch gives a performance which is lively without being exactly "sports car". This makes for reliability and allows the driver who uses some restraint to get a reasonable fuel consumption, whilst even when driving hard during our test we recorded 24.3 m.p.g. overall.

Although the car, which showed 43,000 miles on its distance recorder, did not live up to the maker's performance claims it was usefully lively and when laden with our standard 3½ cwt. test load would reach 50 m.p.h. in 15.6 sec. and cover a standing quarter mile in 1.6 sec. less than a standard version. Maximum speed at 76.2 m.p.h. mean is 8 m.p.h. up on standard. In typical high-g geared VW fashion this can be built up to 80 m.p.h. or so under favourable conditions provided the accelerator pedal is eased back every two miles or so to allow the oil feed to the supercharger, which is operated by manifold vacuum, to work. This oil is held in a small bottle which required replenishment (a rather awkward operation) about once per thousand miles in our experience. Thus the oil in the sump, which is often used for this purpose, served only for engine lubrication and consumption was good for a car of the age and mileage of the test vehicle.

At maximum the Volkswagen's quietness is one of its charms and this is not spoiled by the blower. More surprising is the lack of noise when travelling slowly even in the lower gears, and it is difficult to detect that the car is supercharged, save for the characteristic flat spot at very low r.p.m. that can cause the car to come to a complete halt, even in second gear, if the accelerator is fully depressed. The only other sign of tempera-

ment that we discovered was a certain reluctance to start when cold, although this became easier as the knack was found over several mornings.

The extra power seemed to help rather than hinder the handling, although credit must also go to the Michelin "X" tyres that were fitted at the rear. Altogether the car has been improved without spoiling its original features and this makes the Judson a practical everyday conversion as well as one that offers extra motoring fun.

PERFORMANCE DATA: JUDSON SUPERCHARGED VOLKSWAGEN

	The Motor Road Test No. 7/56	Judson Super charged Car
Test Conditions	Temperature 48-55° F. Barometer 30.33-30.22 in. Hg. Dry, 20 m.p.h. gusty wind.	Temperature 42-44° F. Barometer 29.6 in. Hg. Dry, 12 m.p.h. gusty wind.
Maximum Speed Mean Best one-way quarter-mile	68.2 m.p.h. 70.3 m.p.h.	76.2 m.p.h. 78.3 m.p.h.
Maximile Speed (timed quarter-mile after one mile accelerating from rest) Mean of opposite runs Best time equals	— —	74.2 m.p.h. 76.9 m.p.h.
Top Gear Acceleration 10-30 m.p.h. 20-40 m.p.h. 30-50 m.p.h. 40-60 m.p.h. 50-70 m.p.h.	20.2 sec. 18.4 sec. 18.4 sec. 27.7 sec. —	— 14.3 sec. 17.6 sec. 21.6 sec. 29.7 sec.
Third Gear Acceleration 10-30 m.p.h. 20-40 m.p.h. 30-50 m.p.h. 40-60 m.p.h.	9.7 sec. 8.9 sec. 11.3 sec. —	10.6 sec. 9.2 sec. 9.9 sec. 14.1 sec.
Acceleration from Standstill 0-30 m.p.h. 0-40 m.p.h. 0-50 m.p.h. 0-60 m.p.h. 0-70 m.p.h. Standing quarter-mile	7.2 sec. 11.8 sec. 18.2 sec. 32.4 sec. — 23.5 sec.	5.9 sec. 10.0 sec. 15.6 sec. 25.0 sec. 43.8 sec. 21.9 sec.
Hill Climbing at Steady Speeds (Tapley figures in lb/tons shown in brackets) Max. gradient on top gear Max. gradient on third gear Max. gradient on second gear	1 in 14.9 (150) 1 in 8.2 (270) 1 in 5.5 (400)	1 in 13.5 (165) 1 in 7.8 (285) 1 in 4.7 (460)
Fuel Consumption At steady 30 m.p.h. At steady 40 m.p.h. At steady 50 m.p.h. At steady 60 m.p.h. At steady 70 m.p.h. Overall Consumption	49.5 m.p.g. 46.5 m.p.g. 39.5 m.p.g. 34.0 m.p.g. — 30.8 m.p.g. for 516 miles	47 m.p.g. 39 m.p.g. 33.5 m.p.g. 28 m.p.g. 23 m.p.g. 24.3 m.p.g. for 1,016 miles