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# JUDSON SUPERCHARGER FOR THE 190SL

## REAPPRAISED

Is it possible to gain a 50% increase in maximum Tapley readings on a given car and still not greatly increase acceleration times? It sure is, and that's just part of what we have learned in the last eight months following our first road tests of the Judson Supercharger. Perhaps the biggest thing we learned is that a car cannot be evaluated in a few hours, or for that matter even weeks, and this is one reason why our promised road test series has not been forthcoming.

The Judson does produce 50% better readings in all gears but the hitch is that it falls off in the higher ranges. We will use fourth gear readings for the purpose of this example to try and show you what happens, but the effect is the same in all. These readings quoted will be from an instrument known as a Perfometer, which is the same as the well known Tapley meter but has different calibrations. The readings then can be used only as a relative measure of accelerative ability. Unsupercharged the 190SL reaches a maximum reading of 10.5 at 3000 RPM. At 5000 RPM it is still reading 10. The supercharged car reaches a maximum reading of 17 at about 2200 RPM but at 5000 it is down to 11. From 5 to 6 thousand the cars are almost even.

What does all this mean in performance and in everyday driving? For average around town driving and for climbing hills it means that the Judson supercharged car can climb hills in fourth that the stock car must use third gear for, and it means that acceleration and throttle response from 2000 to 3,500 RPM is remarkably better. Acceleration from a dead start is outstanding in first gear. Just step on the gas and you are off. Those familiar with the stock 190SL will know that for a really good start the engine must be revved to 3500 or better and the clutch snapped out. This is a heart rend-

ing affair at best and is responsible for much clutch failure. With the Judson it is not needed.

For all out acceleration however the picture is very different. Placing the two cars together in an acceleration test, at the start the blown car will leap ahead and peak out in first gear well ahead of the stocker, but, when the shift is made to second, after running over 6000 in first, both cars are in the engine speed range between 3500 and 4000 RPM. At this point things are very nearly equal and the cars run together, although the blown car keeps its slight lead. At Lime Rock '59 the figures for the standing 1/4 mile were 19.0 for the best strictly stock 190SL's and 18.4 for the blown cars.

Troubles with the blower itself have been minor. Some units have been bothered with vibration which can generally be traced to a loose or broken support bracket or to early recommendations that the stock rubber gaskets be used between the blower and the intake manifold. The unit itself has been quite trouble free. Engine damage has been minor and limited to a few cases of burned exhaust valves where engine revs have been held to the red line. One broken crank and one collapsed piston have been reported but in both of these cases the failures occurred at engine speeds over 6500, (probably nearer 7,000) and can hardly be blamed entirely on the blower. I would suggest that this can be prevented by using solid gaskets, using a number 50 main jet, and installing an electric fuel pump, just to be sure. This valve burning has got to be caused by a lean mixture and these three changes will pretty well rule it out.

After all this your gas mileage will suffer, not quite in proportion to the power increase but significantly.

City mileage dropped from 19-20 to 15 and trip mileage from 28 to 21-22.

Conclusions?, well they are hard to reach. If you do a lot of driving in town and seldom see over 4500 on the tach., and if you are dissatisfied with the performance of your 190SL as it now stands you will probably like it. If you do a lot of high speed driving and do use the upper rev ranges you will not like it at all. It completely changes the character of the engine and the car.

Speculation? Lots. It is my opinion that the Judson could have the answer but lacks development. Something is definitely wrong from 4 to 6,000, and anyone at all familiar with the 190SL knows that if you really want it to go the tach rarely falls below these figures. The very first car I drove in making the initial road test was equipped with a Fish carburetor and this car WENT. It would not, however, idle. I think the smaller Holley carb was substituted to cure the idle problem and that the installation with the Holley is undercarbureted at high RPM's. While several mem-

bers have indicated that they were going to try larger carbs we have no definite reports as yet. One planned to adapt one of the dual throat Solex's and this sounds like a good idea. In any event, if you want to explore the *maximum* performance potential of the Judson and to leave your unblown friends in the dust at the local "drag strip" Mr. Judson has left you room for experimentation.

It is not fair to close without saying that many owners will like the supercharger, and I am sure that the Judsons feel they are selling a very satisfactory product. I think their failure has come from not spending enough time in a stock car to discover that 62 to 6500 RPM can be used routinely if high performance is desired and that the character of the car is quite different over 4,000 than it is below that figure. With complete prejudice admitted, I cannot help but wonder if this oversight has not come from driving less exotic iron with tachometers red lined at 5,000 RPM, such as a Porsche.

—K. A. BARTLETT, JR.

