

Austin Seven Conversion.

We of the Cambridge Engineering works specialise in Austin 7 cars and their conversion. Having been connected with this work for the past 25 years, considerable knowledge and data has been amassed, from which we feel we are able to speak from experience on this subject.

It is now common knowledge that speeds up to 80 M.P.H. can be obtained from a tuned version of the Austin 7, which allows a cruising speed of 65-70 M.P.H. provided that the all up weight of the car is kept down to a minimum, the main object being to obtain a good power to weight ratio from the outset.

It will be obvious that, if a light yet sturdy body, constructed mainly of alloy materials and weighing something like half of the original body be fitted to the chassis, the power to weight ratio will benefit considerably. This alone in fact should bring the all up weight of the car down to something like 7 cwt. Again if the power output of the engine be increased to something like 25 B.H.P. by a few modifications it follows that a marked increase in performance will result.

The principal component for achieving this is a high compression alloy cylinder head preferably of high duty alloy to prevent distortion, this will also help to eliminate some of the extra heat resulting from the higher engine speeds. Additionally good breathing is restricted by the side valve arrangement, this can be improved to a large extent by the modification of the cylinder block and valve gear together with the fitting of twin carburettors to allow maximum breathing, providing this work is correctly carried out which is critical, increased speed and efficiency will result.

To utilise the higher speeds available with safety, it is essential to improve the roadholding and stability of the car. This calls for the lowering of the chassis by modifying the suspension and so lowering the centre of gravity essential for road-holding and cornering at higher speeds, this in turn will of course increase the loads on the king pin axle eyes which should of course be strengthened to this end, a point which is missed by most but supplied regardless with all our lowered suspension sets. A further improvement is the fitting of smaller wheels with a wider section tyre thus reducing gyroscopic action to a minimum and reducing wear to the steering gear, at the same time improving the road adhesion and ride apart from a better appearance. The lowered type of suspension if modified correctly to makers specification, which is critical, has no snags and is being used for racing and road use with highly satisfactory results.

It is an advantage to fit a smaller radiator block and shell, providing the former is quite free from obstruction, this will reduce frontal area and improve the appearance of the finished car, but the radiator should not be lowered below the starting handle otherwise overheating will take place through the thermo-siphon action being lost.

The brakes are about the worst failing of the Austin 7, quite a lot of which is through wear and loss of leverage. The pre-1931 model brakes are the most difficult to improve but both these and the later models can be made to stop quite effectively by the use of the Bowdenex braking system which is of the enclosed cable type used for the front together with long levers for the rears. The standard braking system tends to pull the front axle backwards when applied and usually jams on when on a full lock, juddering when applied reversing, all this is eliminated with the Bowdenex braking system of which we are the inventors and manufacturers, the Austin can be brought right up to date by the fitting of lockheed brakes, these are smooth and powerful in action and will give complete satisfaction with very little maintenance.

Friction dampers can be made to work quite satisfactorily by the use of a better type of disc of the woven type, this is not affected by weather conditions and grips at all times. These being the basic facts of Austin conversion which may help the constructor to understand the fundamental principles involved which have been proved by time and experience.