To all you Mini fans, October the 4th 2000, will be remembered as the day the last Mini was made, but to me it is the day that the last car fitted with an “A” series engine rolled off a production line. The “A” series predates the Mini by eight years. The origins of the engine that was known as the BMC A series engine as installed in cars produced under the names of Austin, Morris, Austin Healey, MG, Riley, Wolseley, Vanden-Plas and finally Mini, began sometime in the middle of the nineteen forties. The Austin Motor Company, or as they chose to call them selves at that time, Austin of England, needed new up to date models for the post war era. The resulting two designs were a mixture of old and new. Both of conventional layout for the time with the engine located at the front of the independently sprung channel section chassis and rear wheel drive by live axle. One had a 1200cc version of an all new four cylinder, water-cooled, overhead valve engine and the other a 1000cc version of the same engine in a narrower version of the same chassis. The 1000cc model was dropped and 1200cc version went in production in 1947 as the Austin A40, named Devon with a four door body and Dorset with two doors. At the beginning of the nineteen fifties and for a few years, The A40 Sports, a two seat aluminium bodied tourer, with a mildly tuned version of 1200cc engine was produced for Austin by Jenson.

Near the end of the nineteen forties the Austin management felt it was time to produce a miniature Car similar in size to the Austin Seven last produced in nineteen thirty eight. It was to be of advances construction but of conventional Front/Rear layout. Some time in the late nineteen forties, Eric Bareham an engine designer at Austin was tasked with designing the engine for the new model. He had designed the A40 engine that had proved reliable and durable in service. He has related to Barney Sharratt the author of The Austin, how it was decided to create an 803cc engine based on that design. At some stage the successful engine tuner Harry Westlake was brought in to enhance the combustion efficiency of the design, The combustion chamber design and porting having an important contribution to the long term viability of the design.

The new model that began be produced in nineteen fifty two was the Austin A30 1951 to 1956.
This was the year of the merger of Austin and the Nuffield group of companies, Morris, MG, Riley and Wolseley, plus various companies that produced components for the group, that came together to make the British Motor Corporation, BMC. The Nuffield group had two engine plants, with a variety of designs in production. Morris engines that produced side valve and overhead valve units for Morris cars, overhead valve and overhead camshaft units for Wolseley cars. Riley produced their own high twin camshaft overhead valve unit. All in a mixture of four and six cylinders, mostly if not all of prewar design. After the implication of the merger it was seen that something had to be done about rationalising the engine supply of the new corporation. As the engine range produced by Austin were of modern design if not advance but where proving reliable in service, the decision was made to make them the standard engines of the corporation. The new engine designed for the A30, would be BMC’s standard small engine and designated the A series engine. Incidentally, another engine design that had its basis in the 1200cc A40 engine became the BMC B series unit. But that is another story.

The engine was soon fitted to the Morris Minor 1948 to 1953, in its original 803cc form, in place of the old Morris side valve unit. In 1956 a 948cc version was produced and fitted to the Minor 1000, 1956 to 1971, also the new Austin A35 1956 to 1971.

The 948cc version was also fitted to the new Austin A40 1958 to 1967 and the Austin Healey Sprite 1958 to 1962.

An 848cc version was produced in 1959 and used in the new Austin/Morris Mini. The first Mini Cooper of 1961 had a special 997cc version of the "A" series, later the 998cc unit.
In 1961 the 997cc unit was replaced by one of 1098cc throughout the range except the Mini. Also in 1962, the MG Midget, introduced alongside the Austin Healey Sprite 2, was fitted with the 1098cc version of the "A" series engine.

The 1098cc engine was used in the second transverse engined BMC model the "1100".
There were various versions of the "1100" badged as Austin, Morris, MG, Vanden-Plas Riley and Wolseley. This was renamed the "1300" when fitted with the 1275cc version of the engine installed from 1967.
The Mini Cooper S, 1963 to 1967 was fitted with a couple of special version of the "A" series, a 970cc version a 1071cc version and the 1275cc version.
It wasn't until 1971 before another new model was produced that used the "A" series. That was the Morris Marina, the 1275cc unit was one of the engines options available. By then the parent company was the British Leyland Motor Corporation.
BLMC's next model to use the "A" series was the Austin Allegro 1973 to 1983. With 998cc, 1098cc and 1275cc versions specified as well as couple of variants of the B series engine.

The Austin Metro 1980 to 1990 was only available with the A-plus version of the engine, of 998cc or 1275cc. The MG version made from 1982 until 1991 was fitted with a high compression 1275cc version or in turbo-charged form in the MG Metro Turbo.

The last Morris model, the Ital of 1980/84, was a revised Marina and continued with the 1275cc unit as an option.
The Austin Maestro hatchback of 1982 to 1994 was the penultimate "A" series powered car, having the 1275cc A-plus version amongst the engine options.

The final new model to have a 1275cc “A-plus engine option, was the Austin Montego saloon of 1984 to 1994.

By 1994 only the "Mini", was still using the "A" series. The "A" series engine was the only option in all of the Mini’s made whatever the model. Initially with an output of 30BHP and rising to a peak in unmodified form of 93BHP in the MG Metro Turbo, it was produced in ten different capacities, three of them only used in the Mini Cooper and Cooper “S” models. It was used in twelve distinct models and it has been estimate that around fourteen million cars have been produced with the “A” series engine.

The A series engine in competition
Right from the beginning the was used competition, such as this A30 taking part in the 1954 Monte Carlo Rally and circuit racing the UK. In nineteen fifty eight a new relatively low cost, international racing formula was proposed for single seat cars utilising a production engine of 1000cc of 1100cc subject to the weight of the car. The A series being a relatively new design fitted the bill. Fitted to cars such as the Cooper T52/T56 and T59 in the nineteen sixties, The Lotus 18 and the Elva 100. Some are used in classic Formula Junior today.

It was also fitted in some versions of the Lotus 7, and tuning kits were available as the advertisement below shows.
**DOWNTON** tuned Lotus 7A competing at Prescott Hill Climb, September 1959.

### Engines and Conversions for Specials and Formula Juniors. **PRICE LIST**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>Exchange complete balanced competition assembled engines complete with special heads, manifolds, carburettors, etc.</td>
<td>£100 0 0</td>
</tr>
<tr>
<td>Sports cylinder heads with oversize inlet and special exhaust valves, modified and polished ports and combustion chambers and double valve springs, on exchange</td>
<td>150 0 0</td>
</tr>
<tr>
<td>Racing cylinder heads with very special oversize inlet and exhaust valves, modified and polished ports and combustion chambers, double valve springs and counter bored inlets, on exchange</td>
<td>20 0 0</td>
</tr>
<tr>
<td>Exhaust manifolds for Elva Junior and Lotus 7A</td>
<td>27 10 0</td>
</tr>
<tr>
<td>Combined inlet/exhaust manifolds for Lotus 7A for 1½in carburettors</td>
<td>12 10 0</td>
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<tr>
<td>Racing inlet manifolds for 1½in carburettors</td>
<td>15 0 0</td>
</tr>
<tr>
<td>Pairs of 1½in H2 S.U. carburettors complete with petrol pipe and unions, throttle coupling, etc., suitable for Lotus 7A or Specials; can be supplied horizontal, 20° semi-down draught or 30° semi-down draught</td>
<td>9 16 0</td>
</tr>
<tr>
<td>Pairs of 1½in H4 carburettors as above, any angle</td>
<td>21 0 0</td>
</tr>
<tr>
<td>Flat top solid skirt racing pistons, standard and oversize</td>
<td>7 0 0</td>
</tr>
<tr>
<td>Sports camshafts, very special unique design giving flexibility throughout the speed range with lower valve gear stresses than standard, on exchange</td>
<td>5 10 0</td>
</tr>
<tr>
<td>Racing camshafts giving highest possible power output, suitable for circuit work but retaining a measure of tractability. Outright sale only, exchange not possible</td>
<td>15 0 0</td>
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**DOWNTON** Conversions for "A" Series Engines. **Sports Cars and Formula Junior**.

![Installation of "A" Series in Lotus 7A.](image)

The "A" Series B.M.C. engine, as it only now becomes fully appreciated, is one of the most versatile production units ever developed. The reasons for its adoption in the Lotus 7A are now as valid as when first introduced in the "A" Series engine for the Lister Specials. It has proved itself to be almost as reliable as the Lotus 5A engine, and has the advantage of being more amenable to a wider variety of modifications, by reason of the Duplex system of two exhaust valves and two inlet valves, which are now available on the production units. The engine revives through the use of extensively developed components to a level of performance which is well above that of the original car. The engine is regularly used in competition in the United States and in various other countries, where it is proving to be highly competitive in the hands of experienced drivers.

The Duplex cylinder head is designed to provide a more efficient flow of gases than the standard components, and this, together with the larger bore and stroke, results in a higher power output. The engine is also fitted with a special camshaft and a modified carburettor, which are designed to give maximum performance under all conditions. The engine is supplied with a choice of three different camshafts, depending on the type of competition in which it is to be used. These camshafts are designed to give maximum performance in different types of competition, such as hill climbs, sprint races, and endurance races.

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The Mini’s first competitive event was the RAC Rally of nineteen fifty nine, which didn’t go well. Nineteen sixty saw the first entry in the Monte Carlo Rally where the Mini was to make its mark. Other rallies would follow. Enter John Cooper who brought his Formula Junior experience to the Mini’s engine, and the first 997cc Mini Cooper was produced in nineteen sixty one. The Mini Cooper S came along in nineteen sixty three. Between nineteen sixty and nineteen seventy Mini’s where driven to thirty two rally wins, three of them the Monte Carlo.

Personal Recollections
The first time I drove a vehicle with an “A” series, was the 803cc Morris Minor van that I learnt to drive in, I went on to drive other Minor vans, the best being a 1098cc version that was great fun. The first “A” engined car I purchased was a 1275cc Marina that I kept for ten years, the next was a 998cc Metro that I drove as far as Yugoslavia and back. This was replaced by a 1275cc Ital in 1982, the components from this I used to build a Marlin Roadster. The last “A“ engined car I purchased was a 1275cc MG Metro that had a tendency to pink a lot due to the 10.3 to 1 compression ratio, but gave good service until electrical problems lead to a loss of confidence and sale after eight years. So I think I know the engine well.