ALTERNATOR

The following article was written and submitted by Mark Paget. Thanks Mark.

*Ed note: This most informative article highlights a point that is often unknown/overlooked by many readers (myself included). 'Lucas' and 'Lucas Australia' are two different organisations. The lack of understanding/observation of this fact can cause a lot of misunderstanding/errors. To stress this point, I have taken the liberty to highlight **(in bold)** each time Mark refers to either organisation. Pay particular attention to this distinction!*

Australian MGB with Lucas Australia alternator

Some time after transitioning from positive earth polarity, BMC Australia introduced an alternator as standard equipment on all local B models. This coincided with most of the concurrent light vehicle fleet.

The parent company BMC, had already introduced a **Lucas** 16AC alternator for MGB. Though this was predominantly for export models. British home market and Australian production continued with dynamos. When Australian B received an alternator, the majority of concurrent light vehicle production was equipped with a locally manufactured wiring harness. Local MGB had British wiring.

Front looms for use with dynamo are specific and distinct. The regulator being the major junction for primary power wires (brown, brown with trace and individual 3/8 terminals). None were converted to accept alternator wiring.

The **Lucas** 16AC unit required two interlocking terminal plugs and four terminals:

- main feed,
- earth,
- field, and
- indicator.

Plus an external regulator and matching multi-pin connector. To increase local content and fleet commonality, BMC Australia utilised the **Lucas Australia** 15AC alternator. Terminal location and plugs being the same as for the **Lucas** 16AC. This would allow looms intended for the 16AC to remain unchanged.

The 16AC is short lived in British production and superseded by **Lucas** ACR units. All (ACR) being internally regulated, therefore a further different wiring loom. Presenting as either three loose wires or in one plug:

- main feed,
- auxiliary feed, and
- field.

BMC Australia was committed to the **Lucas Australia** 15AC unit. As made, the later British (ACR) loom would not accept the Australian alternator. Specific components were subsequently procured for the assembly line:

- sub-loom (with CMA insulators) including BMC titled part number label,
- Lucar terminals,
- two interlocking multi-pin plugs,
- self adhesive insulation tape,
- two 8G Pozi-drive self taping screws…

Plus the standard:

- **Lucas Australia** 15AC alternator (62921207), and
- **Lucas Australia** 8TR regulator (62938104).

All colours and traces of the new Australian sub-loom are standard. The new sub-assembly is laid alongside the engine loom and secured with tape at two points. Remaining installation at the body side is straight forward.

- Brown wire to fuse box,
- black to the nearby 'P' clip anchorage, and
- multi-pin plug into the regulator.

The 8TR mounts to the traditional point with the standard plastic nuts and two short, self-tapping, pozi-drive screws. At the engine, the British loom is modified.

- Primary feed is now adapted to the local multi-pin plug,
- auxiliary feed has its Lucar terminal removed and the wire taped back onto the main loom,
- existing field wire plugs on to a short bridge wire from the other multi-pin plug.

Correct for the period, the sub-loom is only taped at intervals. Again, this is as with all concurrent local production. **Lucas Australia** alternators are tapped UNC for the straight, belt adjuster's set screw. Regretfully BMC-A et al parts and technical publications are notoriously inaccurate. Manuals and parts lists do identify the **Lucas** 16AC unit. However local differences are frequently omitted or not detailed. **Lucas Australia**, whether through indifference or lack of response from the vehicle manufacturer, were worse. Useful points typically remaining hidden or misrepresented.

- Early production with electrical tachometer utilising a loom for mechanical,
- change to negative earth polarity,
- introduction of locally manufactured starter motor,
- availability of a press-fit distributor cap to replace side entry leads,
- local distributor and ignition leads and their clash with the steering joint,
- alternator in place of dynamo,
- State prohibitions on headlight flash,
- anything useful about the optional steering lock,
- factory fitted reverse lights but no wiring…

Oddly, MGB did not receive a local wiper motor. **Lucas Australia** did mark their products liberally and clearly. Whether by name, part number or both, correct identification is usually obvious and straightforward. Though many owners and some repairers seem incapable of reading the critical second word. Instead, chanting the singular **Lucas** title at every opportunity and blaming everyone else for the problems they themselves induce.

Australian assemblies bare a part number and date of manufacture, whether stamped or branded into the main body. Original **Lucas** 16/17/18 ACR have an aluminium tag attached to the rear housing with the same information. Space permitting, part numbers can sometimes be found cast into components. Before local MGB production ends, **Lucas Australia** produces a new alternator, also identified as 15AC (there is also a Lucas 15AC). This time internally regulated and markings clearly cast. The black plastic end cover is no longer required. Diodes are visible through the cast rear housing. Main feed is now a stud, with single male Lucar for field.

British production had already introduced the **Lucas** 16, 17 and 18 ACR series. All visually similar. None arriving on an Australian assembly line until 1976 (late 1975) with Moke, Mini, Triumph 2500 and Land-Rover.

To accept an alternator the B series block required a new, longer rear bracket. A component change common with the A series. Although the bracket is slotted at the mounting points, alternators are equipped with a sliding tube to allow for minor length correction. However the B series continued to evolve. 1800 blocks can be found with three arrangements:
1 - cast and drilled for dynamo,
2 - cast for dynamo and alternator, drilled only for dynamo, and
3 - cast and drilled for dynamo and alternator.

The final arrangement introduced a further rear bracket. Visually similar to the dynamo item but with a different hole spacing. A series retained the dynamo casting throughout. Whereas A-plus evolved to alternator only, requiring a bespoke reverse bracket to retrofit a dynamo. Factory production progressed to air-conditioning and 80amp alternator.

'V' belt listings are notoriously inaccurate, factory and aftermarket. In part due to the different alternators already mentioned. Adjuster slides for dynamo and **Lucas Australia** alternator are straight. Both with a UNC anchor. Original **Lucas** Alternators are metric. Come the 1980s the lower hole is drilled only. Replacement units, new or **Lucas** reconditioned are supplied with a metric bolt and nut. This rationalisation allowed the front housing to be utilised for left and right hand applications