Engine Upgrade [Austin 1800cc Mk11 in Lieu of MG 1500cc - Magnette/MGA]

All references in this article will be restricted, to fitting, to a MG Z type Magnette

Foreword- this article is specifically relevant to the utilisation of a B series 1800 cc variation as found in Austin 1800cc FWD sedans. Below points are for clarification

[a] **The Austin 1800{Morris 1800 in England} unit** is basically a five bearing MGB MK2 engine with some changes to the oil galleries and engine block to support a front wheel drive transmission. Beauty of this engine is its much cheaper than obtaining a 5 bearing MGB unit and can be modified for use in a MG ZA / ZB. Main modifications required are: brackets to support oil strainer, new flange to Z type sump, alteration to left side engine mounting bracket and machining ZA/ZB back plate to take 'five bearing MGB MK2' rear main oil seal. All major ZA/ZB bits bolt on and original starter motor from the smaller 1500cc engine needs to be used.
{*Note. See text for more detail; but consider using an MGB three or five bearing engine as it's easier.*}

[b] **The MGB five [5] bearing engine** is easier to adapt than [a] above; As there are no oil galleries to seal off and engine block is 'of course' made for the MGB sump flange.

[c] **The MGB three [3] bearing engine** is the easiest to transplant with almost nothing to adapt. These engines are harder to obtain.

TO BEGIN- {the rest of the text is related to adapting an Austin 1800 Engine}

Fitting the Sump.

MG 'B' Mk11 sump lines up for all but 4 bolt holes - three can be drilled and tapped easily, but fourth hole lines up with a transmission locating pin hole; this needs to be, plugged, drilled and tapped. Although all other holes line up, some are not threaded and need to be through bolted.

{Note - not many holes line up with original MG ZA/ZB sump, rendering it a poor option- !#@# }

Gazumped by MG Z Sump/Engine Bay

Having added 4 holes to accommodate the MGB sump does not solve fitting the engine into the Z's engine bay. Due to the engine bay cross member the original shape of the Z's sump must be retained by marrying the essential parts of two sumps [MGB flange and Z's profile].

Step 1 Cut flange completely off Z type sump [*before cutting mark a datum line all around the sump 2 cm from bottom of flange*] see fig. E1

Step 2 Cut flange and part of MGB sump to hight of 1 cm from bottom of flange. [*Taking care to retain enough of a front portion that projects further than the Z's. Also flat rear section of B's sump must be altered to form part of 1 cm wall around its flange*] .See fig. E2

Step 3 The composite is composed of Z's, flangeless, shape fitting inside the B's flange. Both overlap at the 1 cm wall of the B's flange. The datum line indicated at Step 1 is now used to set correct hight of sump in relation to engine block mounting *[Back of Z's sump must be cut and welded shut, so its short enough, to fit inside B's dimensions]*.

Step 4 Weld composite together after first, setting hight to datum line and fixing with a few metal screws [*Before welding test sump for alignment and hight with Z's oil stainer mounted in place and of course weld only after securing in final bolting alignment to minimise distortion*].

Modifying oil pickup path and Mounting MG Z type oil strainer

[*Austin 1800 draws oil to the pump from its transmission's sump via a large oil gallery with an orifice in the bottom of the block*]. Things to do:

One - Tap and plug oil orifice to permanently close off.

Two - Remove top from Austin's 1800's oil pump and replace with top from Z's oil pump. This allows Z's oil strainer, four legged mounting bracket and extension oil pipe to be connected *[Gasket under oil pump must be replaced to blank now redundant oil inlet - Check pump is not worn*]

Three - [Z type only] mounting bracket for oil stainer must be securely fixed to the block. One solution is to make right angle brackets. **See pictures, Pic No1 and No2**. Drill [and tap] the wall of the engine block and mount the brackets, with nuts and bolts, so the oil strainer support bracket is level with bottom of block *[Earlier B series, three bearing, engines had lugs cast into the forward part of the block to support the oil stainer - only the MG ZA/ZB Magnette appears to use them*]

Engine Bracket [Left side]

[*Austin 1800 block has a blank mounting pad on the left that is correct for engine mounting except its extended out by the bulge of a large internal oil gallery*] Things to do:

One - Cut off and shorten that part of engine bracket that extends to mounting hole

Two - Bolt engine bracket to front engine plate ensuring shortened pieces fit together easily and mounting hole is central on blank engine mounting pad. Mark mounting hole for drill & tapping

Three – With mounting pad drilled & tapped, bolt modified bracket extension to pad. Align with rest of engine bracket and weld together. Remove, partly joined, Engine Bracket and complete welding.

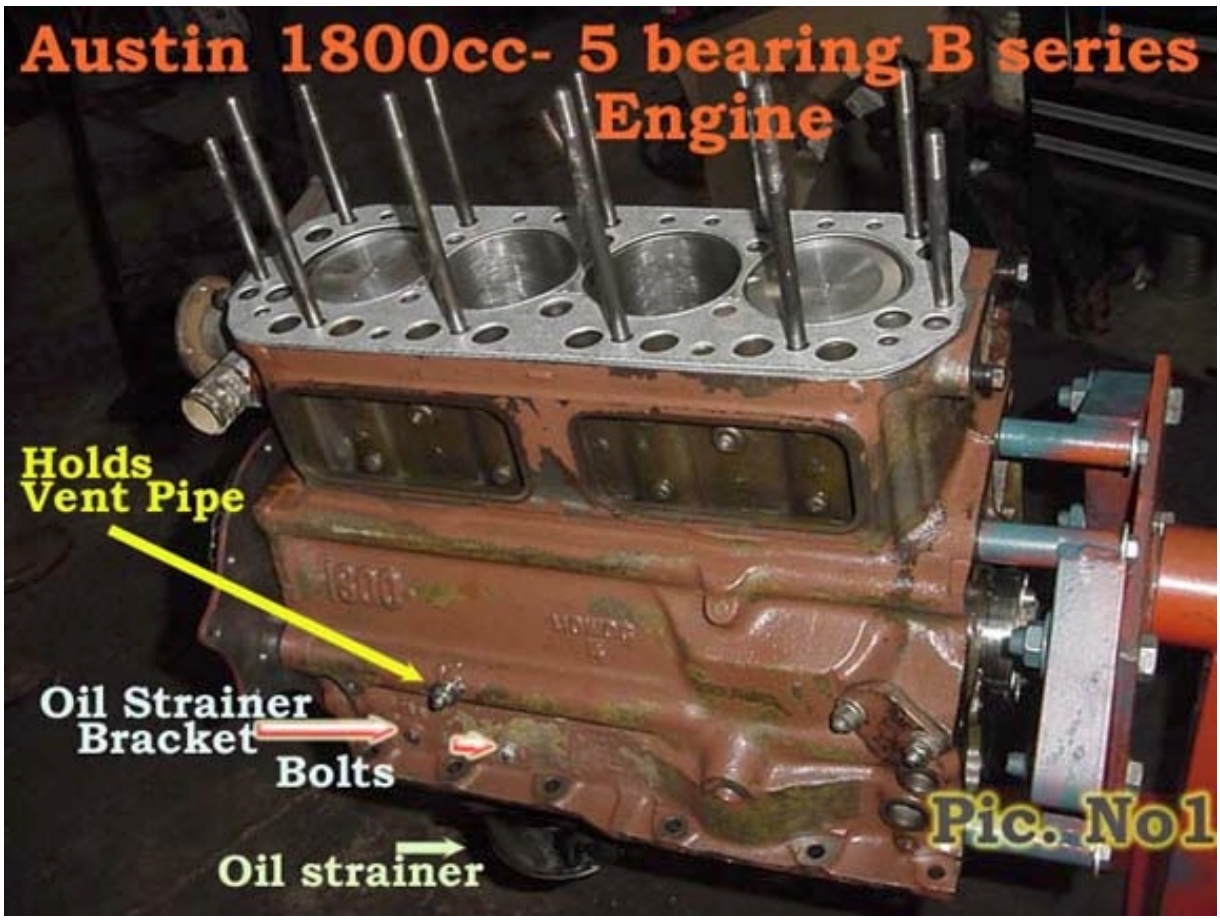
Back plate/Gear Box adaptor plate

Be mindful the Magnette needs a higher mounting starter motor to clear the steering column. Use the back plate from the Z type's 1500 engine and machine to take rear oil seal from MBG MK2.

Be aware flywheel of MK2 needs new locating holes drilled and taped to retain original clutch pressure plate. Also check spigot bearing for gearbox location into crankshaft.

Fig. E1 Preparing MG ZA/ZB Sump

Fig. E2 Composite Sump Cross-Section


Austin 1800cc- 5 bearing B series Engine
Holds Vent Pipe
Oil Strainer Bracket
Bolts
Oil strainer
Pic. No1


Austin 1800cc - B Series Engine
Fabricated Oil Strainer Brackets
Redundant Oil Gallery sealed off
Pic. No2