

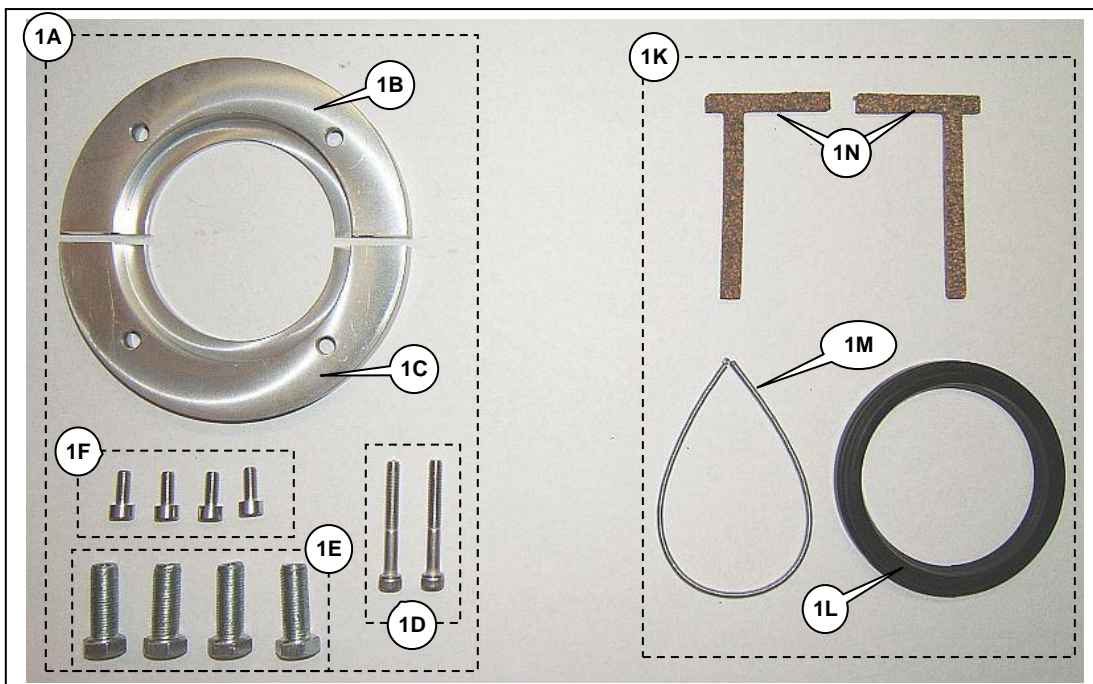
# Supplemental Information & Instructions for 833-415 Conversion Kit, Rear Main Seal Austin Healey 100-6 & 3000

## Contents of Kit

Qty	Item No.	ILL#	Description
1 Each	980-182		Instructions (this document)
1 Each	232-220		Hylomar M Gasket ACETONE SOLVENT, 80ML TUBE
1 Each	771-335		Thread locker, Blue, medium strength, 1 ML pouch
<b>1 Each</b>	<b>833-417</b>	<b>1A</b>	<b>HOUSING ASSEMBLY, OIL SEAL</b> <i>Which Consists of:</i>
1 Each	NPN	1B	Upper seal housing, unthreaded; pockets for the head of the bolts (1D).
1 Each	NPN	1C	Lower seal housing, threaded for the bolts (1D)
2 Each	NPN	1D	Screw, M5 X 40 MM AHSC (Allen head, socket cap pre-installed on Upper and Lower housings.)
4 Each	NPN	1E	Drill Guide (Bolt, hollow, 3/8 UNF x 1")
4 Each	320-005	1F	Screw, M5 X 12 MM, 0.8MM pitch, stainless, AHSC (Allen head, socket cap)
<b>1 Each</b>	<b>837-095</b>	<b>1K</b>	<b>SEAL KIT, with lip-type oil seal and cork gaskets</b> <i>Which Consists of:</i>
1 Each	NPN	1L	Lip type seal, split
1 Each	NPN	1M	Spring, for lip type seal
2 Each	NPN	1N	T-shaped cork gasket ( <u>Not used on the Austin Healey Applications</u> )

## Tools and/or Supplies Needed but not Included in Kit

- Allen wrench, 4 mm or 5/32" (either one will work)
- Emery paper, fine
- Drill and 4.2 mm drill bit
- Tap handle and 5 mm x 0.8 mm pitch tap
- General purpose grease
- Carb cleaner or rubbing (denatured) alcohol



## 32 **Before you Begin**

33 *Read through these instructions completely before you pick up a tool. This project requires a certain*  
34 *amount of skill. If you have any doubts about your ability to complete this project, please have it done by*  
35 *a professional. This seal kit can be fitted with the engine in the car, or during an engine rebuild. Obviously*  
36 *it will be easier with the engine out of the car. This kit allows a modern lip-type oil seal to be placed*  
37 *around the crankshaft at the rear of the engine block, supplementing or effectively replacing the original*  
38 *Archimedes-screw type oil control groove machined into the crankshaft.*

### 39 **Tips from those that have done this multiple times:**

40 *Don't drill with engine upside down on engine stand! The debris will drop into the engine.*  
41 *While drilling the two holes in the main caps it is possible to drill into the cavity inside the rear main caps,*  
42 *leaving shavings inside as you withdraw the drill bit. If you do, you must remove the rear main cap so you*  
43 *can clean out the debris, which means you need a pan gasket set.*  
44 *If you remove the bearer plate, you will need a conversion set, which includes the pan gasket set.*  
45 *If you remove the rear main cap, you must replace the felt tube seal for rear main cap AHY-0602, page*  
46 *10, #13 (NLS) but comes with pan gasket set. There is an alternate to the felt gasket: Use pressurized*  
47 *can of silicon sealant, spout with a straw or pipe on can. Insert nozzle into the tube, press nozzle to*  
48 *release the silicone. The silicone will flow out under pressure, filling the tube and forcing the nozzle back*  
49 *out. We have been told there are several companies that make this type of product, including Lawson*  
50 *Products, or ZEP, with ZEP being the best of the two.*  
51

## 52 **Fitting Instructions:**

- 53 1. If the engine is still in the car, remove the gearbox, clutch, flywheel and rear bearer plate.
- 54 2. With the engine out of the car, fit the crankshaft.
- 55 3. Ensure that the area on the crankshaft that the new seal will run on is not rusty and that it has a  
56 perfect finish. Polish with fine emery paper if necessary.
- 57 4. Before you proceed, the block must be level side to side, and reasonably level front to back.
- 58 5. Rotate the crankshaft so that two adjacent flywheel retaining nuts are parallel to the sump flange (the  
59 bottom of the block).
- 60 6. Screw the hex head 3/8 UNF x 1" drill guides supplied in the kit into the appropriate four flywheel  
61 retaining "nuts." The "nuts" are actually threaded collars, with a flange on one end. (Moss # 310-960)
- 62 7. Rotate the crankshaft until you have the top two of the four bolts in alignment horizontally. Place a  
63 level across the shanks of the drill guide bolt and make sure the bolts are in fact horizontal. *This will*  
64 *position the drill guides correctly, and the holes for the seal housing retaining screws will be located*  
65 *properly*
- 66 8. Lock the crankshaft in position; it **must not turn** during the next several steps.
- 67 9. Using a 4.2mm drill bit, and the drill guides, drill four 10mm deep holes. *Do not drill these holes with*  
68 *the engine upside down on an engine stand! The debris will drop into the engine. Please note that if*  
69 *you have the block align bored after the lower holes are drilled, the holes in the lower seal housing*  
70 *will no longer line up with the holes*
- 71 10. Using a 5 mm x 0.8mm pitch tap, tap each of the four holes 8 mm deep.
- 72 11. Ensure that the rear face of the main bearing cap is flush with the machined face of the back of the  
73 block. If not, remove the sump, loosen the rear main bearing cap nuts and gently tap the bearing cap  
74 into line and re-tighten the bearing cap nuts to the correct torque setting.
- 75 12. Degrease the back of the block; use carb cleaner or alcohol and a rag.
- 76 13. If the spring is still inside the lip of the seal, remove it carefully and set it aside.
- 77 14. Lubricate the lip of the seal with grease.
- 78 15. The seal is split. Gently open up the seal just enough to fit over the crankshaft with the internal  
79 groove facing towards the block. Do not stretch the seal any more than necessary.
- 80 16. Slip the spring for the seal over the crankshaft.
- 81 17. Clip the ends of the spring together and gently roll it into the groove in the seal
- 82 18. Position the split in the seal toward the top of the engine block.
- 83 19. Locate the upper seal housing, which is unthreaded. It does have the holes for the heads of the 5 mm  
84 x 40 mm Allen head socket cap screws.

## 85 **Fitting Instructions, continued**

- 86 20. Put a thin film of Hylomar on the face of the upper seal housing that will contact the surface of the  
87 block.
- 88 21. Position the upper seal housing on the back of the block so the seal is captured.
- 89 22. Secure upper seal housing to the block loosely using two of the four 5 mm Allen head socket cap  
90 screws (12mm long) supplied in the kit.
- 91 23. Put a thin coat of Hylomar on the surfaces where the two halves of the seal housing meet, and repeat  
92 steps 17 & 18 with the lower seal housing. Leave the 5 mm x 12 mm screws loose.
- 93 24. Start the two 5 mm x 40 mm screws that join the upper & lower seal housings together, but leave  
94 them loose.
- 95 25. Gently centralize the seal assembly around the seal.
- 96 26. Tighten the two 5 mm x 40 mm screws that that join the seal housings together.
- 97 27. Remove the two 5 mm x 12 mm screws from the upper seal housing. Put a small amount of the  
98 Permatex 09178 BLUE thread locker or the equivalent on the threads of the 5mm screw. This will  
99 hold the screw securely while allowing the screw to be removed at a later date should it become  
100 necessary to replace the seal.
- 101 28. Repeat step 24 on the two 5 mm x 12 mm screws in the lower seal housing.
- 102 29. Using the guide on the last page, modify the rear bearer plate (back plate) to provide clearance  
103 around the seal housing. *Please note that a precision fit is not necessary, but removing excess*  
104 *material from the plate will reduce the support provided to the gasket. Those of you that have*  
105 *installed more than one of these seal kits will notice that the kit has been redesigned (Sept 07) to*  
106 *reduce the amount of material that must be removed from the bearer plate. This makes it more*  
107 *practical for the owner/ enthusiast to complete this step himself with a grinder.*
- 108 30. Test fit the bearer plate to ensure that you have achieved a good fit without removing too much  
109 material.
- 110 31. Trim gasket to clear seal housing and reattach the bearer plate to the block.

## 111 **If you align boring the block...**

112 If you align bore the block *after* the four holes for the seal housing have been drilled and tapped, the two  
113 holes in the lower seal housing for the mounting screws will no longer line up with the holes in the block. It  
114 will be necessary to elongate the holes in the lower seal housing. The holes in the housing are stepped,  
115 with the upper part of the hole being for the head of the socket cap screw. Both parts of the hole will need  
116 to be elongated. Ideally, the seal and the housing should float freely on the crank, in effect, centering  
117 themselves. The four seal housing screws cannot touch the *sides* of the holes in the housing. If they do,  
118 the housing and the seal will be offset, and that may result cause a leak.  
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### **Moss Motors, Ltd.**

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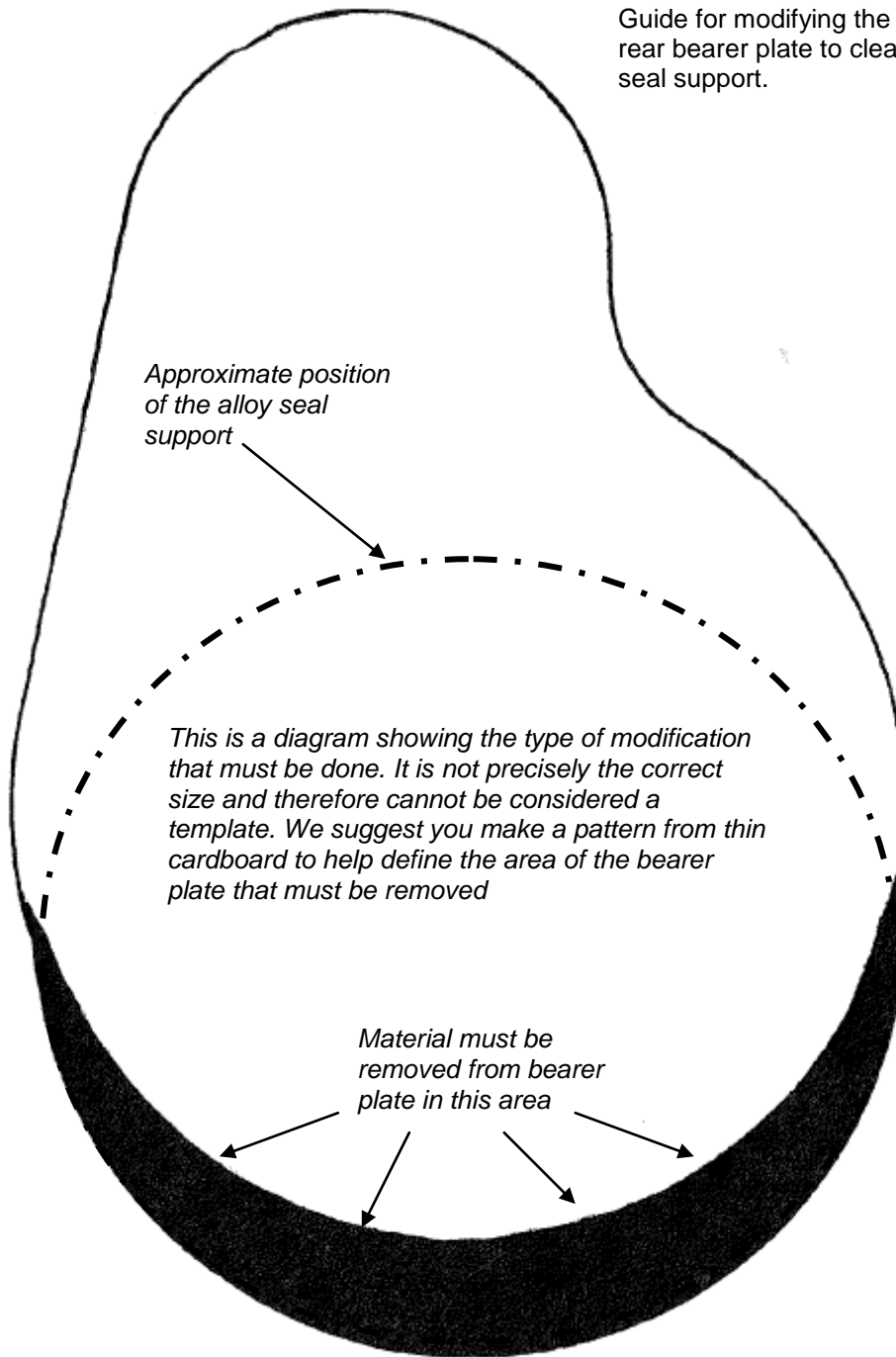
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Guide for modifying the rear bearer plate to clear seal support.



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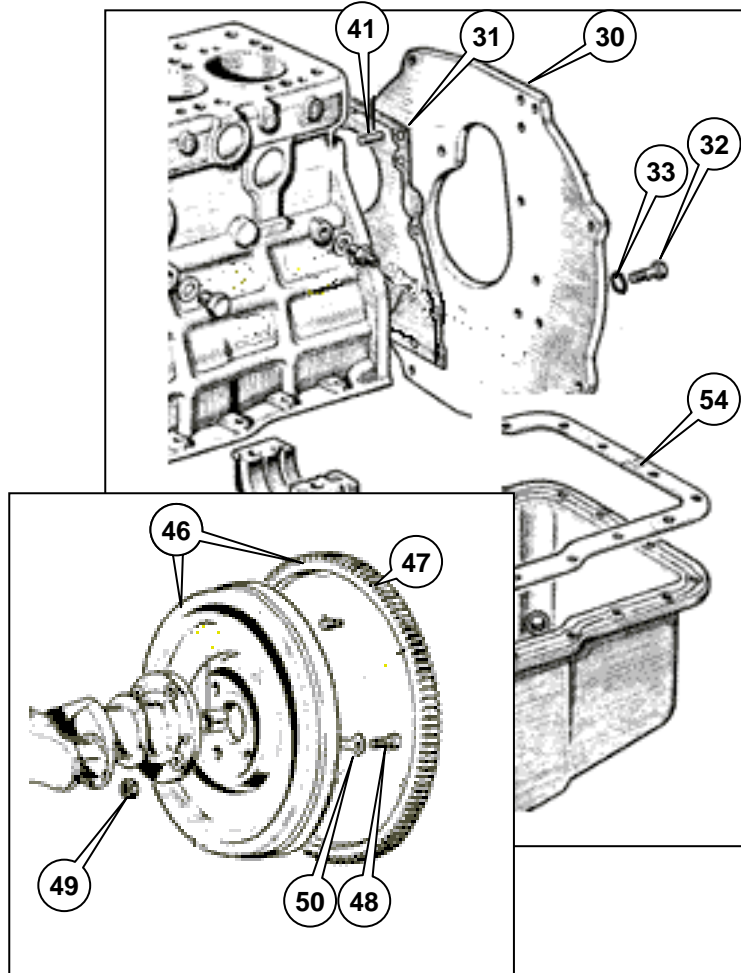
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### Additional Parts to Consider

ILL#	Moss #	Description	Qty	OE #	Application
30	NLS	Rear Bearer Plate	1		
31	NLS	Gasket, rear bearer plate	1		
		<i>We suggest 522-025, Conversion Gasket Set</i>	1		
32	NLS	Bolt, bearer plate to block	11	AEC478	
33	324-045	Washer, shakeproof	11		
41	325-080	Dowel, bearer plate to block	2	AEC2037	29F/H101 to H4878, 29FF/H101 to H149
	NLS	Dowel, bearer plate to block	3	AEA420	29F/H4879 on, 29FF/H160 on
46	NLS	Flywheel and Ring Gear Assembly	1		
47	021-635	Ring Gear	1		
48	322-190	Bolt, flywheel to crank	4		
49	310-960	Special tubular nut for flywheel bolts	4		
50	031-209	Locktab, flywheel bolts	2		
54	525-003	Gasket set, oil sump	1		

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