



# 461-868 Uncaged Layshaft Bearing Kit

## Installation Instructions

### MGA, MGB—(E)GB74719 Standard, GB74528 O/D

440 Rutherford St. Goleta, CA 93117  
1-800-667-7872 • FAX 805-692-2525 • [www.MossMotors.com](http://www.MossMotors.com)

Read and understand these instructions before beginning the installation. Figures may vary slightly from actual components.

#### Notes:

While working with uncaged needle bearings, it is helpful to work over a tray with a clean rag laid flat in the bottom. This will help keep any roller bearings from disappearing on you.

Do not use white lithium grease as it does not dissolve in transmission oil. You can purchase transmission assembly grease. However, simple axle grease is oil soluble and works great.

Keep all parts clean and use lint free rags. Very small pieces of dirt or other contaminants in will stop the bearings from turning and cause damage to the lay gear, bearings and lay gear shaft.

#### Tools required:

- 5/8" socket
- 6" extension
- Dead blow hammer
- Small flat screwdriver
- Oil soluble grease (axle grease)
- Long nose pliers
- Lint free rags
- Tray (such as disposable cookie tray)

- 1) Install the spacer tube into the layshaft from the big end. It is a tight fit so use plenty of axle grease. You must push the tube down far enough that it is just past the third circlip groove. Use a 5/8" socket, 6" extension and a dead blow hammer to push the spacer tube down into place. Figure 1.



Figure 1



## Installation Instructions

- 2) Once the spacer tube is just past the third circlip groove (from the big end), install a circlip in the third groove. Start by pushing the circlip in the end of the layshaft perpendicular to the bore. Use needle nose pliers to keep pushing the circlip past the first and second circlip grooves. Do not attempt to flatten the circlip out in the bore until it is well past the second circlip and approaching the third. Once the clip is nearing the third groove, you can use the pliers to turn the clip. Use the socket and an extension to push the clip home into its groove. You will hear it click into the groove. Figure 2.



**Figure 2**



- 3) Working from the small end of the layshaft, use the socket, extension and dead blow to push the spacer tube against the circlip you just installed in the third circlip groove. Figure 3.



**Figure 3**

- 4) Open one of the bearing packages and remove one of the shims. You will notice the shim has a chamfer on one side. This chamfer is to help ease installation of the shim into the layshaft but it can go in either way and it will not affect the bearings function. Working from the small end, install one shim against the spacer tube. Figure 4.



**Figure 4**

- 5) Generously lube the bore of the layshaft with axle grease. Begin installing the needle bearings into the layshaft. Use a lot of grease as it helps keep the rollers in place. Install all 20 rollers. You can use your finger to act like a shaft and spin the bearings back and forth to help straighten them out. Once all of the rollers have been installed, they should stay in place, provided you used enough grease. Figure 5.



**Figure 5**





- 6) Install the other shim from the first bearing package. It should be sitting against the rollers and the low enough that the circlip groove is exposed. Figure 6.



**Figure 6**

- 7) Install the circlip in to the groove. Use a small flat screw driver to check if the bearings are all there. There should be a small amount of play in between a couple of rollers when trying to insert the screw driver, but not enough to fit another roller. Figure 7.



**Figure 7**



If you cannot install the circlip because the groove is not uncovered enough, you must remove the shims and rollers. Use the socket, extension and dead blow to push distance tube down against the circlip. You can then reassemble the shims and rollers as described in the previous steps.

Once the circlip is in place, temporarily install the layshaft in the lay gear and bearing. The shaft should go in easily and turn smoothly and easily. If there is any binding or roughness, there is probably dirt in the bearing assembly. The bearing must be disassembled, cleaned and reassembled before continuing.

Hint: you can leave the layshaft in place and work with the lay gear on its side for extra insurance. There is no way for the rollers to fall out if the layshaft is in place.

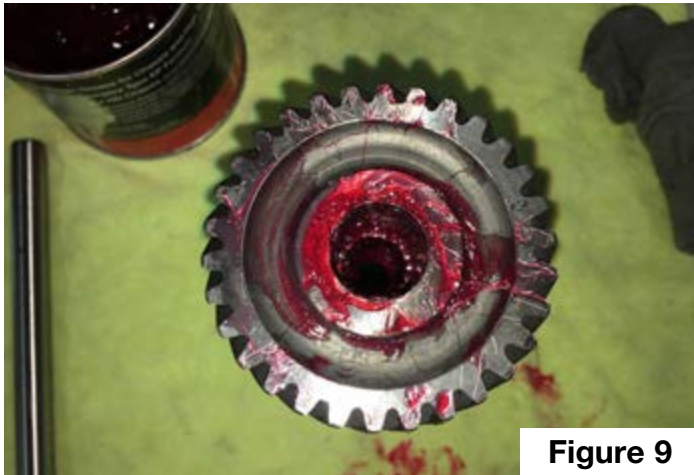
- 8) Open the bearing pack. Working from the big end, install a shim up against the circlip in the third groove. Figure 8.



**Figure 8**

## Installation Instructions

- 9) Thoroughly lube the inside of the layshaft. Install all 20 rollers from the pack up against the shim. Use the small flat screwdriver once again to ensure all the bearings are in place. Figure 9.



**Figure 9**

- 10) Install the remaining shim from the second bearing pack. Smear a bit of axle grease over the last shim and bearings just to keep them in place. Figure 10.



**Figure 10**

- 11) Install the third circlip in the groove just above the shim in the second bearing pack. Again, install the layshaft, this time through both bearings. Just as before, any roughness or difficulty indicates problem and it needs to be addressed before moving on. Figure 11.



**Figure 11**

- 12) Open the last bearing pack. Install a shim against the circlip. Figure 12.



**Figure 12**

- 13) Thoroughly lube the inside of the layshaft. Install all 20 rollers from the pack up against the shim. Use the small flat screwdriver once again to ensure all the bearings are in place. Figure 13.



**Figure 13**

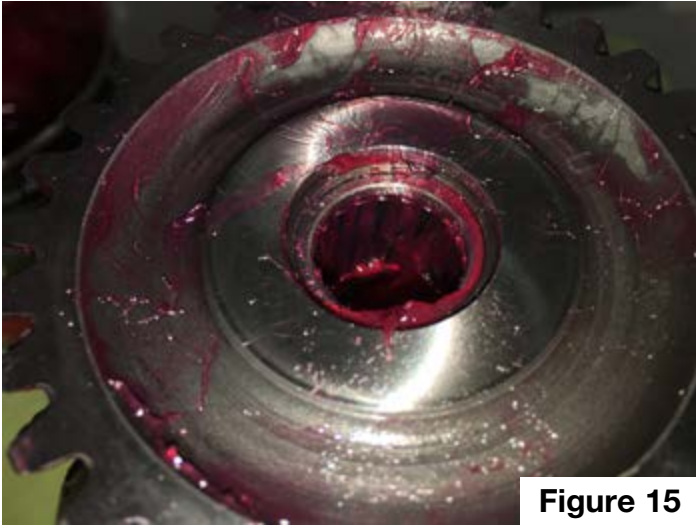
- 14) Install the second shim from the bearing pack. Figure 14.



**Figure 14**



- 15) Install the final circlip in the groove near the big end of the gear. Figure 15.



**Figure 15**

- 16) Once again check your work with the layshaft. If it can be installed easily and rolls without roughness, the assembly is ready to be installed in the transmission. Figure 16.



**Figure 16**

## Installation Instructions



### Bill Of Materials

#### 461-868

Item No.	Description	Quantity
128-225	BEARING, 20 NEEDLE ROLLERS	3
326-190	CIRCLIP, LAYSHAFT	4
461-580	TUBE, LAYSHAFT BEARING SPACER	1

*Although every effort has been made to ensure the accuracy and clarity of this information, any suggestions that you may have that will improve the information (especially detailed installation notes and photos) are welcome. These instructions were developed and written by Moss Technical Support. If you have any questions or difficulties with your installation of this product, telephone 800-667-7872 between 7:00 a.m. and 4:00 p.m., Pacific Time for assistance.*

#### Moss Motors, Ltd.

440 Rutherford Street, Goleta, California 93117  
In the US & Canada Toll Free (800) 667-7872  
LOCAL (805) 681-3400 FAX (805) 692-2510



#### Moss Europe Ltd.

Hampton Farm Industrial Estate  
Hampton Road West, Hanworth Middlesex, TW13 6DB  
In the UK: 020-8867-2020 FAX: 020-8867-2030