

20/07/07



FITTING INSTRUCTIONS FOR

MFK560C/A, MFK560CD/A & MFK560H/A

GM V8 ENGINES TO STANDARD LAND CRUISER AUTOMATIC TRANSMISSION

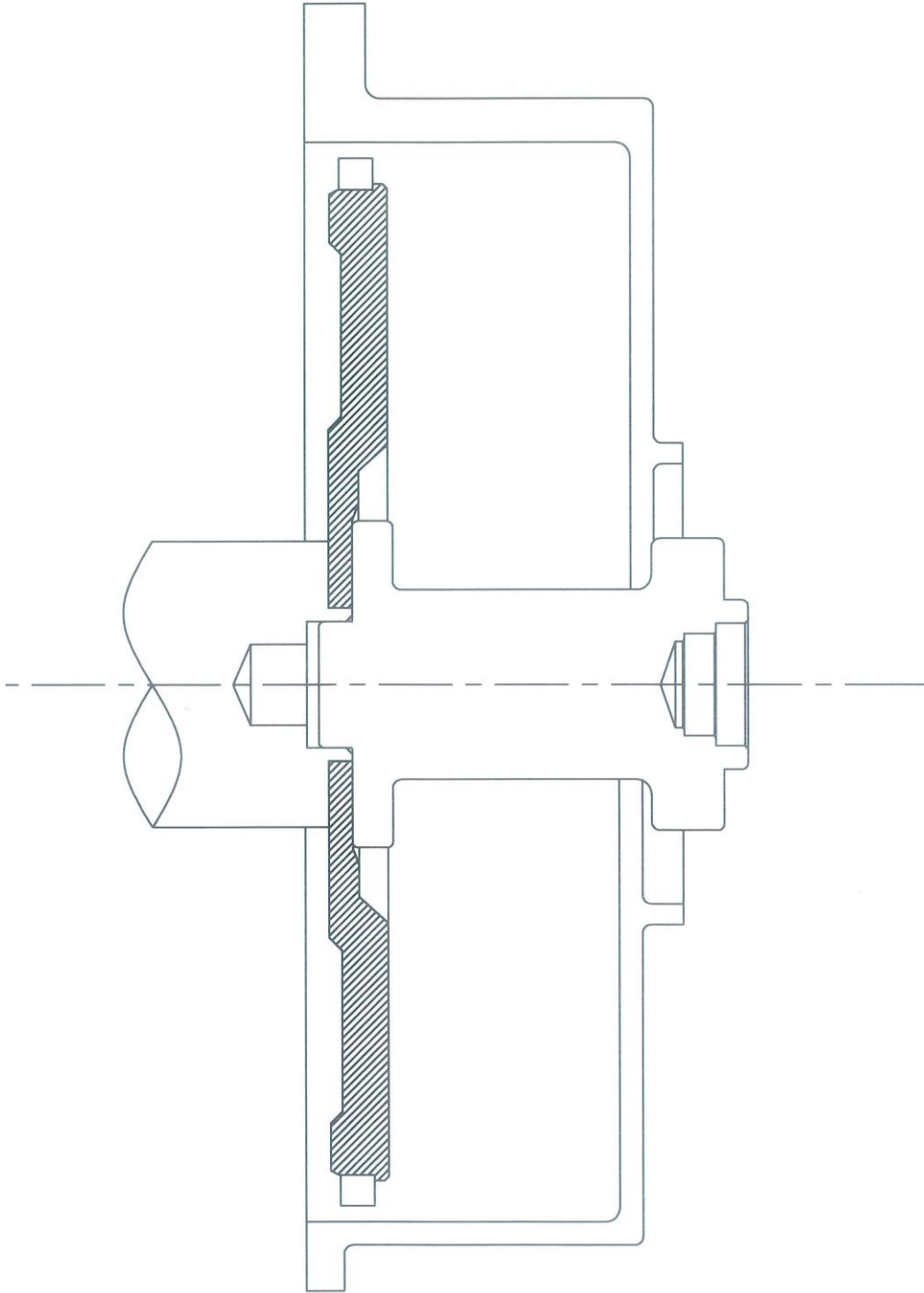
Thank you for purchasing a product manufactured by Marks 4WD Adaptors. The following instructions are intended as a guide. We recommend that you purchase a service manual pertaining to your vehicle for specific torque values, wiring diagrams and other related information.

Engine Removal

1. Remove bonnet from vehicle and tie back hinges.
2. Drain engine and radiator of all fluids. If the new engine being fitted uses a different grade of fuel, drain fuel tank and lines of all existing fuel.
3. Disconnect and label all the hoses and wiring attached to the old engine.
4. Disconnect power steering lines (if fitted).
5. Remove air-conditioning compressor and lines (if fitted).
6. Remove radiator from vehicle.
7. Remove complete exhaust system from vehicle.
8. Support the original transmission using a jack stand and remove the complete engine assembly using suitable engine lifting equipment. Do not discard old engine as some parts from the original engine are still used for this conversion.
9. Remove temperature and oil pressure sender from old engine.
10. Remove sandwich housing from old engine. This housing bolts between the automatic transmission bellhousing face and the engine block.

Engine Preparation

1. Fit the GM flywheel to the rear of the GM engine but do not fit the bolts. It is mandatory that you use a flywheel instead of a flexplate as the flexplate will flex excessively when cranking the engine.



NOTE : Check the spigot diameter of the torque converter and remove or add the adaptor ring in our crank adaptor to suit your automatic.

2. Fit the new crankshaft adaptor and GM flywheel to the crankshaft, secure them using the bolts supplied in the kit. Use loctite on the bolts and torque to specification.
3. By using the rear block surface as an accurate reference point, check that there is no excessive run out on the rear most edge of the new crank adaptor. Excessive run out may be experienced if the GM flywheel being used has not been machined accurately. If you do have excessive run out (more than 0.005") please call our technical department for further assistance. Refer to diagram 1.
4. Trial fit the original sandwich housing to the new adaptor housing. The original sandwich housing may need to be ground down in one spot so as to allow it to bolt flush with the new adaptor housing. Using the original bolts and dowels mate the new adaptor housing to the sandwich housing. Make a new window hole on the new adaptor housing using the original sandwich plate as a template.
5. Bolt the adaptor housing assembly to the rear of the GM engine.
6. Adapt the oil and temperature senders from the original engine into the GM engine using the oil and temperature sender adaptors supplied.

Engine Mount Positioning

The new engine mount location would need to be worked out. The most accurate way to position the engine mounts is to trial fit the new engine to the transmission.

1. Grind the original 6 cylinder chassis mounts off the chassis as they are no longer required.
2. Remove the torque converter from the original transmission. This will allow for the engine to be trial fitted easily.
3. Bolt the GM rubbers to the GM block. Loosely fit the new chassis mounts to the engine mount rubbers. The smaller mount is to be placed on the passenger side of the vehicle.
4. Guide the engine into position and bolt the automatic transmission to the rear.
5. Lower the engine onto the chassis. If all looks OK then tack weld the engine mount posts to the chassis.
6. Remove the bolts that hold the chassis mount rubbers to the new chassis posts.
7. Remove engine and adaptor assembly and complete the welding. Before welding the top shoulder of the new chassis mounts it is recommended that you heat the top shoulder of the mount with an oxy and fold down with the profile of the chassis rail.

8. Paint the new welded area.

Final Fitting

1. Refit torque converter to automatic transmission. Take great care when fitting the torque converter so as to not damage the front seal. Using calipers and a straight edge, measure from the installed surface of the torque converter to the front surface of the transmission housing. The correct distance should be 16.5mm for the 3F engine. If you have a different dimension check that the torque converter is installed properly.

NOTE: Check the spigot diameter of the torque converter fitted to your vehicle. If necessary fit the spigot adaptor ring supplied in the kit.

2. Fit the crankshaft dowel to the rear of the crank adaptor. Bolt the original Toyota flexplate and spacers to the rear of the new crankshaft adaptor using loctite on the bolts supplied. Torque bolts to specification. **NOTE:** The holes in the early model 3F flexplate and spacers will need to be drilled out to 7/16" or 11mm.

3. Guide engine into place and carefully align torque converter spigot with rear of crankshaft adaptor. Bolt the automatic transmission to the new adaptor assembly.

4. Refit original torque converter bolts and torque to specification. Fit the new cover plate to the bellhousing using the bolts and washers supplied.

5. Tighten engine mounts and all accessories.

6. Mount power steering pump and air conditioning compressor. Brackets will need to be fabricated if you are using the original items. Alternatively the GM accessories can be used with the standard GM brackets. New hoses will need to be fabricated to connect to the GM components.

7. Modify radiator spouts to correspond with GM engine outlets. Fit radiator to vehicle and attach radiator and heater hoses.

8. Fill engine with all required fluids.

9. Complete exhaust system.

10. Start engine and check for-
fuel leaks.
oil leaks.
water leaks.
exhaust leaks.

Allow to warm up and recheck above.

II. Refit bonnet.

IMPORTANT NOTES

A. The new adaptor housing supplied has been primarily designed to mate the GM engine to the standard manual transmission bellhousing. In order to access the torque converter to flex plate bolts it will be necessary to modify the housing in two areas.

1. A new hole will need to be made in the new adaptor housing on the rear. The exact positioning of this new hole can be obtained by placing the original sandwich housing on the rear of the new adaptor housing. This hole is required to allow the fitting and tightening of the torque converter to flexplate bolts.

2. A new hole will need to be made in the side of the adaptor housing to allow the torque converter bolts to be started and tightened using a small size 3/8 drive ratchet and socket. This hole needs only to be the size of a match box and is to be made on the passenger side of the housing. A small tin cover plate will need to be fabricated and fastened to the side of the housing using self tapping screws.

Provided that the holes made in the new housing are not excessive and do not pose any future structural problems the warranty will not be void. Should you need advice before modifying the housing please feel free to contact one of our sales staff.

B. The stall speed of a torque converter is determined by the amount of torque that is produced by the engine down low. Since the new engine that you intend fitting has different torque characteristics to the original engine being replaced, it is recommended that you rework the torque converter to compliment the new engine being fitted. We suggest that you contact your local automatic transmission specialist for further advice.

The components supplied in the kit are designed for specific type conversions. Modifications to any components without the written consent from Mark's 4WD Adaptors will void any possible warranty or return privileges. Should you have any further questions that are not covered in the instruction sheet, please contact our sales department for assistance.

Remember an inexpensive phone call can save a costly mistake!

Proudly Manufactured by:

Marks 4WD Adaptors

1-3 Ventura Place, Dandenong south, Vic. 3175

Tel: (03) 9702 7366, Fax: (03) 9702 7566,

E-Mail: marks4wd@ozemail.com.au

Catalogue: <http://www.marks4wd.com/>