



MFK410

CHEVY V8 TO RANGE ROVER 4 and 5-SPEED GEARBOX

Fitting Instructions

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 the bonnet from the vehicle and tie back the hinges.
2. Drain the radiator and engine of all fluids.
3. Remove the radiator from the vehicle.
4. Disconnect and label all hoses and wiring attached to the old engine.
5. Disconnect the power steering lines and air-conditioning compressor lines (if fitted).
6. If you intend replacing the exhaust, remove complete system from vehicle. Alternatively, if you intend keeping the system, remove the engine pipes only.
7. Support the transmission using a jack stand and remove the complete engine assembly using suitable engine lifting equipment. Do not discard the old engine as some parts from the are used for the conversion.
8. Remove the temperature and oil pressure senders from old engine.

Adaptor Preparation

1. Fit the GM flywheel to the GM engine using loctite on the bolts. Torque to specification. **NOTE:** It is mandatory that you use the smaller 153-tooth GM flywheel, as the larger 168-tooth flywheel will not fit inside the Original Range Rover bellhousing.
2. Fit the starter motor to the engine.

3. Fit the top adaptor plate to the engine using the socket head cap screws supplied.
NOTE: Make sure that the engine dowels are fitted.

4. Fit the Rover oil pressure using the adaptor supplied in the kit.

5. Fit the Rover water temperature sender using the adaptor supplied in the kit.

6. The HEI distributor will not fit in the vehicle without some firewall modification, check for clearance by trial fitting the engine.

7. Do not fit the spigot bush or clutch assembly at this stage. Trial fit the engine to establish where to modify the 3.5 litre V8 bellhousing to allow for starter motor clearance. **NOTE:** It may be easier to remove the bellhousing from the gearbox to perform this modification.

The lower adapter plate may be fitted to the bellhousing and the outline of the starter motor may then be scribed onto the bellhousing. Fit the starter motor to the engine and measure the distance that the nose cone protrudes from the block. Grind the bellhousing to allow the required clearance. Silastic may be used to seal between the starter motor and the hole after the engine has been installed.

8. Allow enough clearance to be able to remove the starter motor for servicing. Once the starter motor clearance is satisfactory, rotate the flywheel to establish whether the ring gear clears bellhousing. If not grind the inside of the housing to achieve the required clearance.

9. If you are using a later transmission the bottom plate will not correspond to all the cover plate holes and the outline of the bellhousing. You may choose to modify the plate or bellhousing to suit.

Installation

1. Fit the spigot bush adaptor (MFC412) into the rear of crankshaft using a suitable drift.

2. Lubricate the spigot bush (MFC411), and fit it to the spigot bush adaptor using a suitable drift.

3. Fit the clutch plate and pressure plate assembly to flywheel.

NOTE. When fitting a GM engine to a Range Rover 4/5-speed transmission a standard flat fingered GM 10.5" clutch can be used as the GM clutch has the same spline dimension as the Range Rover 4 speed transmission. Mark 4WD

Clutch Kit MCK105 .The 5 speed transmission has a 23 tooth spline . Therefore a Range Rover clutch plate must be used in conjunction with the GM pressure plate Marks 4WD **Clutch Kit MCK410**. Alternatively you can re drill the GM flywheels to accept the standard Range Rover clutch.

4. Remove the thrust bearing from the carrier.

5. Press the thrust bearing spacer onto the carrier. **NOTE:** Spacer MFC203 suits the 46-mm bearing.

6. Press the Rover thrust bearing onto the bearing spacer. **NOTE:** If the original bearing is worn replace it now.
7. Fit the thrust assembly onto the nose of the gearbox.
8. Fit the clutch fork clip to the carrier.
9. Fit the engine mounting brackets to the engine block. The larger bracket is fitted to the right side and the smaller one to the left side of the vehicle.
10. Fit the engine into the vehicle. **NOTE:** Place the vehicle in 4th gear with the transfer case in high range and raise one rear wheel off the ground. Rock the wheel backward and forward to help align the input shaft of the gearbox with the clutch pressure plate.
11. Secure the engine to the bellhousing using the original bolts and washers.
12. Raise the front of the engine to fit the mounting rubbers and secure them to the brackets using the original nuts and washers.
13. Check the clutch for correct operation. This can be done while the back wheel is still off the ground, you should be able to operate the clutch and spin the wheel by hand. If not rectify the problem now.
14. Fit the lower adaptor plate and flywheel cover plate.
15. Mount the power steering pump and air conditioning compressor, brackets will need to be fabricated if the Rover ones are to be used.
16. Modify the radiator spouts to correspond with the outlets on the GM engine. **NOTE:** 1974 to 1985 Range Rovers were fitted with a 4-row radiator, these radiator cores can be upgraded to 5-row cores. In 1986 Range Rovers were fitted with a 3-row radiator, these radiator cores can be upgraded to 4-row cores.
17. Fit the radiator to the vehicle and attach the radiator and heater hoses.
18. Complete the wiring.
19. Fit new exhaust engine pipes or a complete system.
20. Fill engine with all required fluids.
21. Start the engine and check for-
 - Fuel leaks.
 - Oil leaks.
 - Water leaks.

Exhaust leaks.

22. Allow to warm up and recheck the above.

23. Refit the bonnet.

24. Test drive the vehicle and re check for any leaks.

The components supplied in the kit are designed for specific type conversions. Modifications to any components without the written consent from Marks 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!

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