



Fitting Instruction for MFK1060CDS & MFK1060CDST GM Chev Diesel to Toyota LandCruiser 1HZ and 1HDT 5 Speed Manual Transmissions

Important Information

This instruction booklet can be used standalone for the above stated conversion but we would also recommend having a workshop manual for your vehicle and for the engine/transmission you are installing to cover any factory torque / installation settings to complete the installation.

The instruction booklet describes the required modifications (if any) and installation process in order for our kit to fit and work properly. These instructions **make no assumption** on whether additional changes need to be considered or made. It is highly possible that other aspects of your vehicle and/or third party products, eg. Engine, transmission etc. will have an impact on all that is required for you to achieve your desired outcome.

Marks 4WD Adaptors do not and cannot take responsibility for knowing everything that may impact on your conversion. Before beginning any work, thoroughly work through the sequence of changes, work and potential impact of your conversion. You must ensure you completely understand all the factors that may impact on achieving your desired results.

Step 1 Engine Removal

1. Remove bonnet from vehicle.
2. Disconnect and label all the hoses and wiring attached to the old engine.
3. Remove air-conditioning compressor and power steering (if fitted).
4. Remove the complete exhaust system from vehicle.
5. Drain radiator and engine of all fluids.
6. Remove the radiator from the vehicle.
7. Support the transmission with a jack and remove the bell housing to engine bolts.
8. Undo and remove the front engine mounting rubbers and remove the engine assembly from the vehicle using suitable engine lifting equipment. Do not discard the old engine, as some parts are required for the conversion.
9. Remove the original Land Cruiser clutch and pressure plate.
10. If the new engine uses a different grade of fuel than the original engine, drain the fuel tank and fuel lines.
11. Remove the oil pressure and water temperature senders from the Toyota engine.

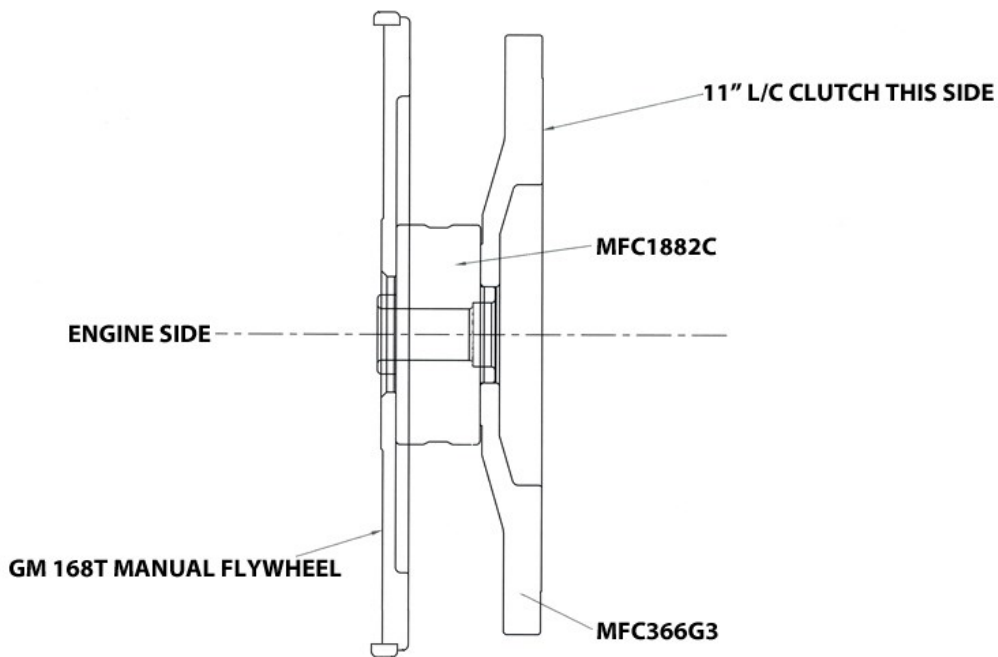
Step 2 Adaptor Kit Preparation

1. Fit the two M8 x 20 dowels (DL-M8) to the rear of the new adaptor housing.
2. Fit the adaptor housing assembly to the rear of the Chevy engine using the 5 long and 1 short SHCS supplied. Check the block thread. We have supplied both metric and imperial SHCS to suit either block thread. Make sure that the engine is fitted with the 2 locating dowels.
3. Fit the flywheel cover plate using the 3 bolts (BT-2040), 3 spring washers (SW-2065) and 3 flat washers (FW-2050).
4. Fit the starter motor to the engine using the Chevy bolts. Seal the plate around starter motor using silastic.

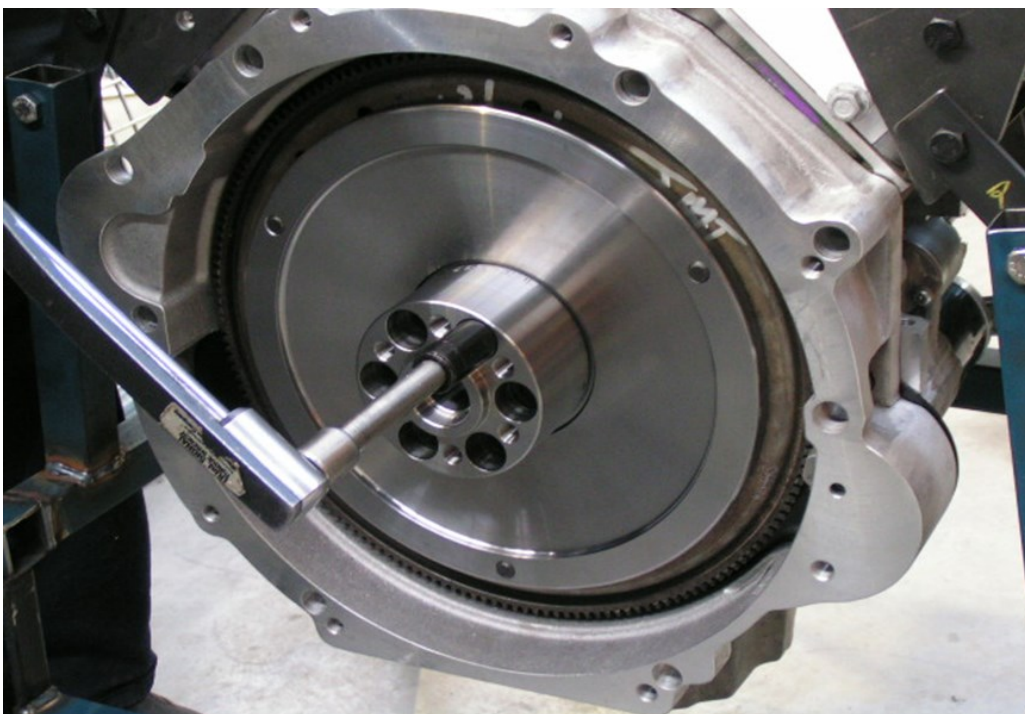
CHEVY NOTE: Due to various Chevy petrol starter motor offsets, a small portion may have to be ground off the starter locating hole in the flywheel cover plate. If the hole in the cover plate supplied is in a totally different position, then you have ordered the incorrect kit. Chevy petrol and diesel engines have different size flywheels and therefore have different starter motor offsets. Please call our sales staff for further recommendations should this problem arises. Chevy Diesel and Big Block engines will require firewall modification behind R/H cylinder head.

Step 3 Flywheel

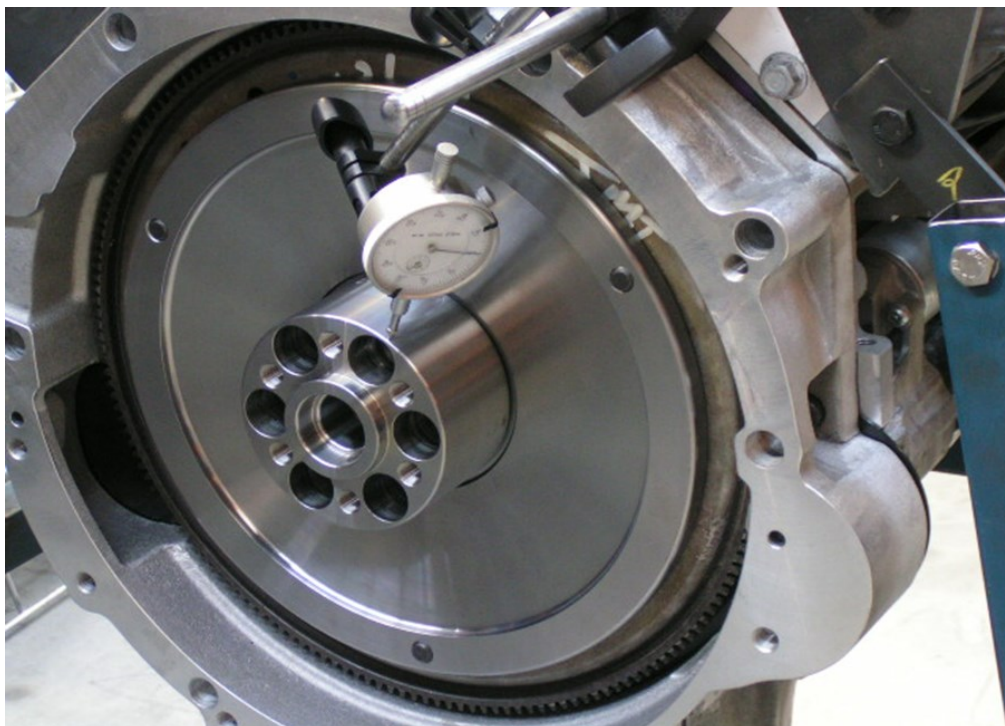
This kit is supplied with a new steel flywheel that requires you to reuse the original GM Chev Diesel manual flywheel to start the engine.



Fit the GM Chev Diesel manual flywheel to the engine, then the crank adaptor and secure it with the 6 socket head cap screws supplied. NOTE: PLEASE CHECK! the crank depth to make sure that the socket head cap screws do not bottom out). GM engines were fitted with various rear main seal types, the flywheel to crankshaft bolts/ socket head cap screws can touch in some applications. To prevent this a flat washer could be used under the head of the bolt. Use loctite on all crankshaft/flywheel bolts.



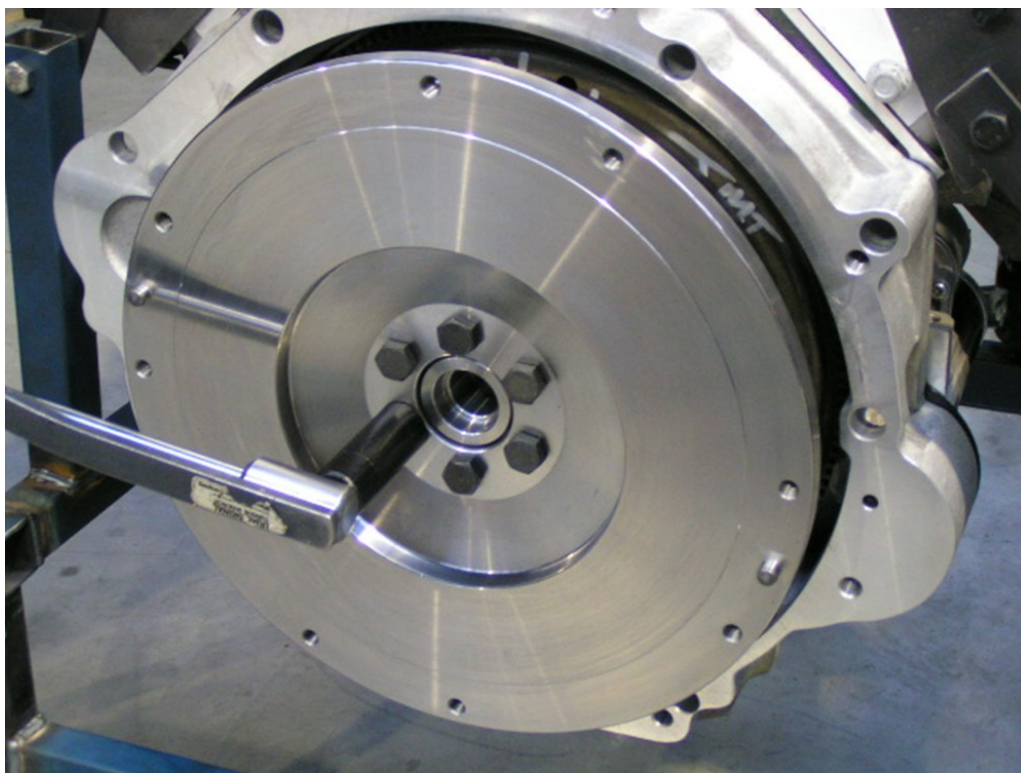
Using a dial indicator check that the crank adaptor runout is less than .05+- 0.2mm. If the runout exceeds this amount remove the crank adaptor and flywheel assembly. Check for and remove any burrs on the flywheel or crank adaptor and try again.



Fit the correct spigot bearing into the crank adaptor using a suitable drift. NOTE: 1HZ 78/79/100 series vehicles are fitted with an R151 gearbox, this R151 gearbox has a 21 tooth spline with a 12mm spigot diameter. If you have this gearbox you must fit the MFC1508 spigot adaptor in the flywheel and then fit the 6001 bearing.



Fit the flywheel to the crank adaptor and secure it using the bolts supplied in the kit. Use loctite on all crankshaft/flywheel bolts.



Make sure the dowels are fitted to the flywheel, they are required for correct clutch location. 3 for 1HZ and 2 for 1HDT

Step 4 Clutch Kit

Fit the Toyota clutch and pressure plate to the new flywheel using a suitable clutch-aligning tool, secure it using the original Toyota bolts.

NOTE 1: If the clutch is worn replace it along with the thrust bearing. **NOTE 2:** When using weld on chassis posts it may be easier to fit the clutch after the engine chassis brackets have been welded to the chassis.

NOTE 2: Remove the Toyota starter motor stud protruding from the front of the bell housing.

NOTE 3: The 70 series models (with weld in mounts) have a brake pipe bracket located on the driver side chassis rail, this bracket is secured with a captive nut in the top of the chassis. Remove the pipe bracket and re-drill the new chassis bracket to allow the brake pipe bracket to be re-fitted after the new engine mount is welded.

Lift the engine into the engine bay using suitable lifting gear. Align the gearbox input shaft spline with the clutch spline by jacking one of the rear wheels off the ground. Put the gearbox in 4th gear and the transfer case in HI range. Rock the wheel backward and forward while pushing the engine back to the bell housing face.

Secure the adaptor to the bell housing using the original Toyota bolts.

While the rear wheel is in the air check the clutch operation. If all is well proceed, if not rectify the problem.

Step 4 Engine Mounts - Bolt in

1. Fit the left-hand engine bracket (MFC1062, the smaller of the two) to the engine mount rubber and fit the original washer and nut. Do not tighten the nut at this stage.
2. Fit the right hand engine bracket (MFC1063, the larger of the two) to the engine mount rubber and fit the original washer and nut. Do not tighten the nut at this stage.
3. Lift the engine as high as it will go and locate the left hand mounting rubber stud through the chassis bracket.
4. Locate the right hand mounting rubber stud through the chassis bracket.
5. Lower the engine slightly and fit the bolts (MFC1101), flat washers (MFC052) and spring washers (MFC196) through the engine brackets and into the engine block.

When you have all of the 3/8"UNC bolts fitted, lower the engine down onto the chassis brackets and tighten all of the engine bracket to block bolts.

6. Tighten the top engine mounting rubber nuts.
7. Fit the bottom engine mounting rubber washers and nuts and tighten them.

Engine Mounts - Weld in

1. Fit the new engine mounting rubbers to the block using the bolts and washers supplied.
2. Fit the new chassis brackets to the engine mounting rubbers using the washers and nuts supplied. **NOTE:** The longer bracket (MFC672/681) to the RHS and the (MFC671/680) to the LHS.
3. Lower the engine so that the top flange plate sits on top of the chassis rails. **NOTE:** The top flange will not sit flat on the chassis.
4. Tack weld the brackets to the side of the chassis and remove the engine.
5. Complete the welding of the bracket to the side of the chassis.
6. Using an oxy acetylene torch heat the top flange plate until its cherry red. Then shape it to the chassis rail using a hammer.
7. Complete the welding and allow them to cool.
8. Paint the chassis and brackets.

Step 5 Engine Completion

Fit the Toyota oil pressure sender using the adaptor supplied.

Fit the water temperature sender using the adaptor supplied. **NOTE:** Use Teflon tape or liquid Teflon.

Fit heater and radiator hoses.

Connect the power steering pump hoses and reservoir if required.

Connect the air conditioning compressor hoses and re-gas if required.

Connect the alternator wiring.

Complete all other wiring.

Fit the tachometer interface if required.

Complete the exhaust system.

Check all fluid levels.

Double check, all of the mounting bolts are tight.

Start the engine and check for-

Fuel leaks.

Oil leaks.

Water leaks.

Exhaust leaks.

Allow the engine to warm up and recheck the above.

Refit the bonnet.

Terms and Conditions

Thank you for purchasing this product manufactured by Marks 4WD Adaptors. Components supplied in this kit are designed and machined for a specific conversion only as outlined in this guide. Modifications to or substitution for any of the components without the written consent of Marks 4WD Adaptors will void any possible warranty or return privileges.

The following instructions are intended as a guide and only for Marks 4WD Adaptors kits. If you do not fully understand the steps, modifications or changes required to complete the tasks, contact our sales department for more information.

We recommend that you purchase a service manual pertaining to your vehicle you are fitting for specific torque values, wiring diagrams and other related information.

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