

12/08/10



FITTING INSTRUCTIONS FOR

MFK605HT/A

HOLDEN V8 TO NISSAN GQ & GU 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.

Auto transmission converter information:

TB42 uses a small converter (C4) the crankshaft has 6 bolts with a 62mm PCD.

TB42E, TB45 use a large converter (J6) the crankshaft has 6 bolts with a 62mm PCD.

TB48 uses a differnt converter than the TB45 the crankshaft has 6 bolts with a 62mm PCD.

TD42 and ZD30 use a large converter (T4) the crankshaft has 7 bolts with a 91mm PCD.

The TD42T is a grey import, has a larger converter (J12) than the TD42, the crankshaft also has 7 bolts with a larger PCD.

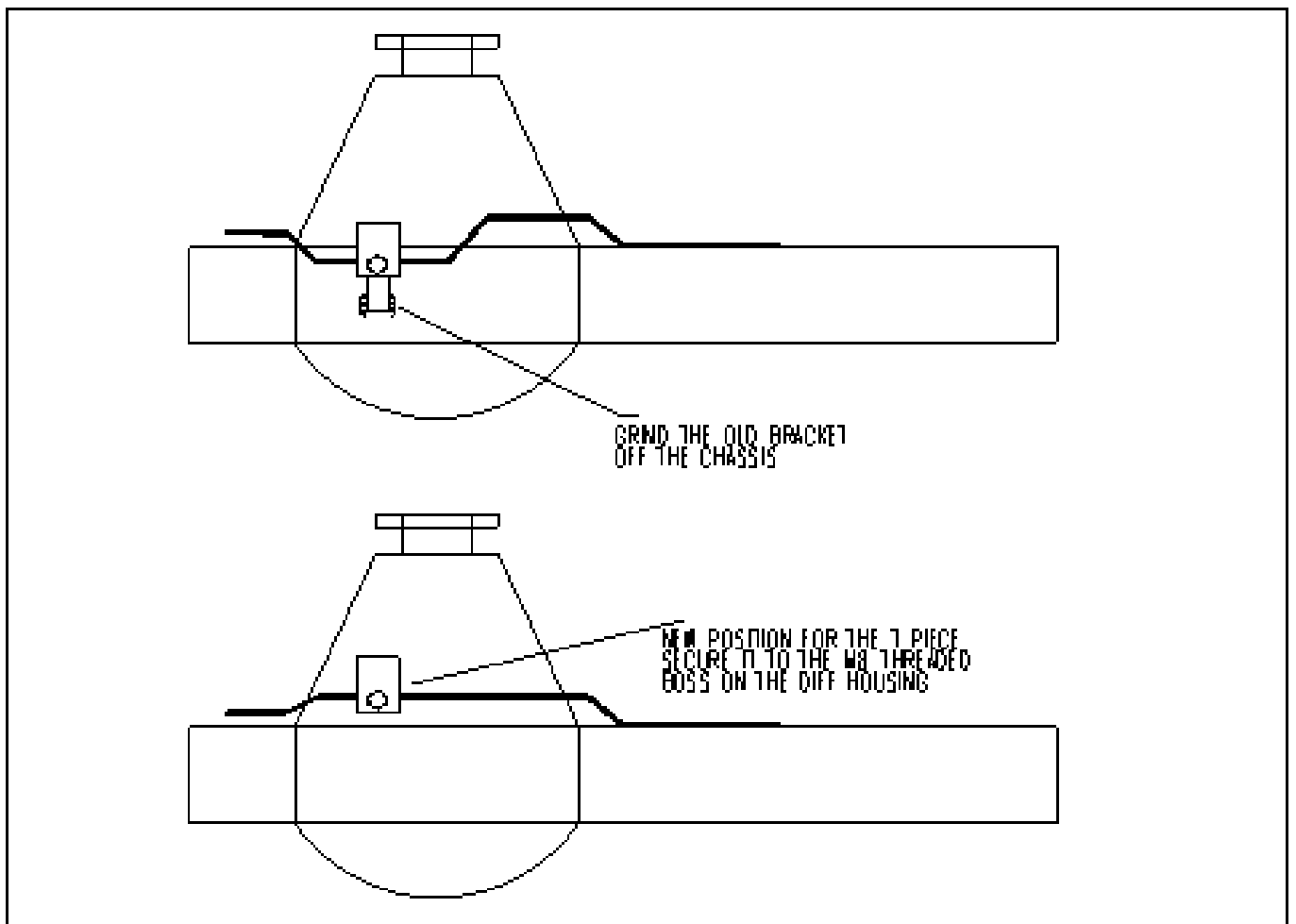
ENGINE REMOVAL

1. Remove the bonnet from the vehicle. It is advisable that you mark the position of the hinges on the bonnet in order to aid alignment when refitting the bonnet once the conversion is completed.
2. Disconnect the battery cables and remove the battery from vehicle.
3. Drain the engine oil and coolant from the engine and remove the radiator and heater hoses attached to the engine.
4. Disconnect and label all wiring attached to the engine. This will make it easier to identify wires at a later stage.
5. Remove the radiator and radiator overflow tank from engine bay.
6. If your vehicle is equipped with air conditioning, evacuate the old gas from the system and disconnect the air conditioning hoses from the compressor.
7. If your vehicle is equipped with power steering. Drain the power steering oil and disconnect the hoses attached to the power steering pump.
8. Remove the radiator from the vehicle.
9. Remove the inspection plate on the front of the automatic transmission bellhousing and remove the torque converter bolts.
10. Undo all of the engine to transmission bellhousing bolts.
11. Support the transmission using a jack stand, then remove the complete engine assembly using suitable engine lifting equipment. Do not discard the old engine yet as some parts from the original engine are still used for this conversion.

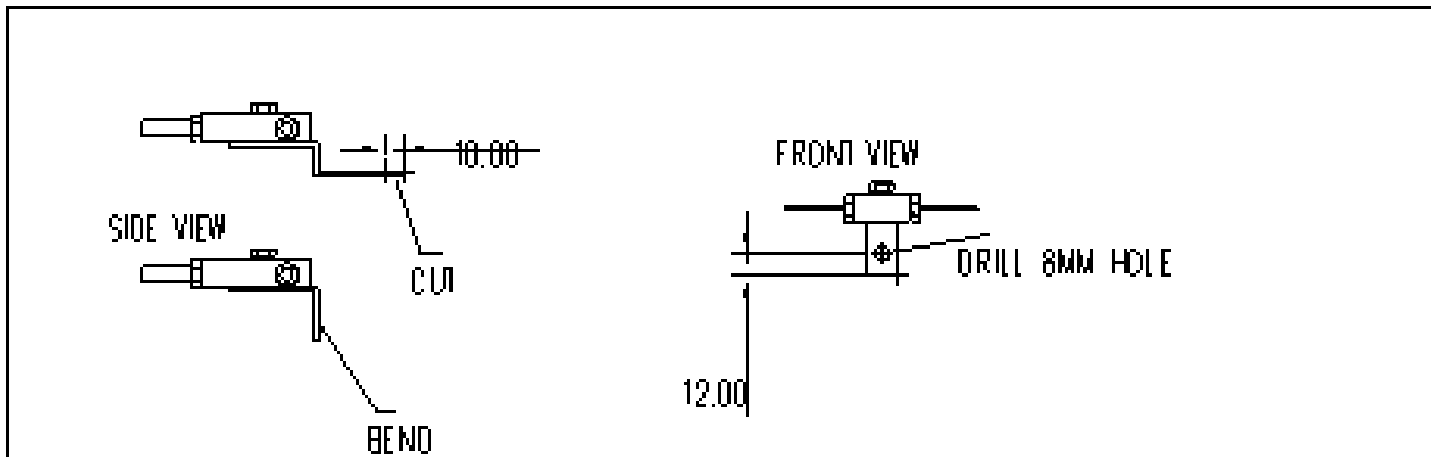
12. Remove the original chassis posts from the chassis and clean the chassis rails of any grime and paint.
13. If you plan to use a different grade fuel, as to what the original engine ran on, drain the fuel tank and fuel lines.
14. Remove the oil pressure and temperature senders from the original Nissan engine.

UNDER BONNET PREPARATION

It is necessary to relocate the brake line on the diff. This is to provide greater engine sump to differential clearance. You must also use a rear pick up type sump and pick up as fitted to the HQ Holden.



1. Remove the brake block bracket with a small grinder.



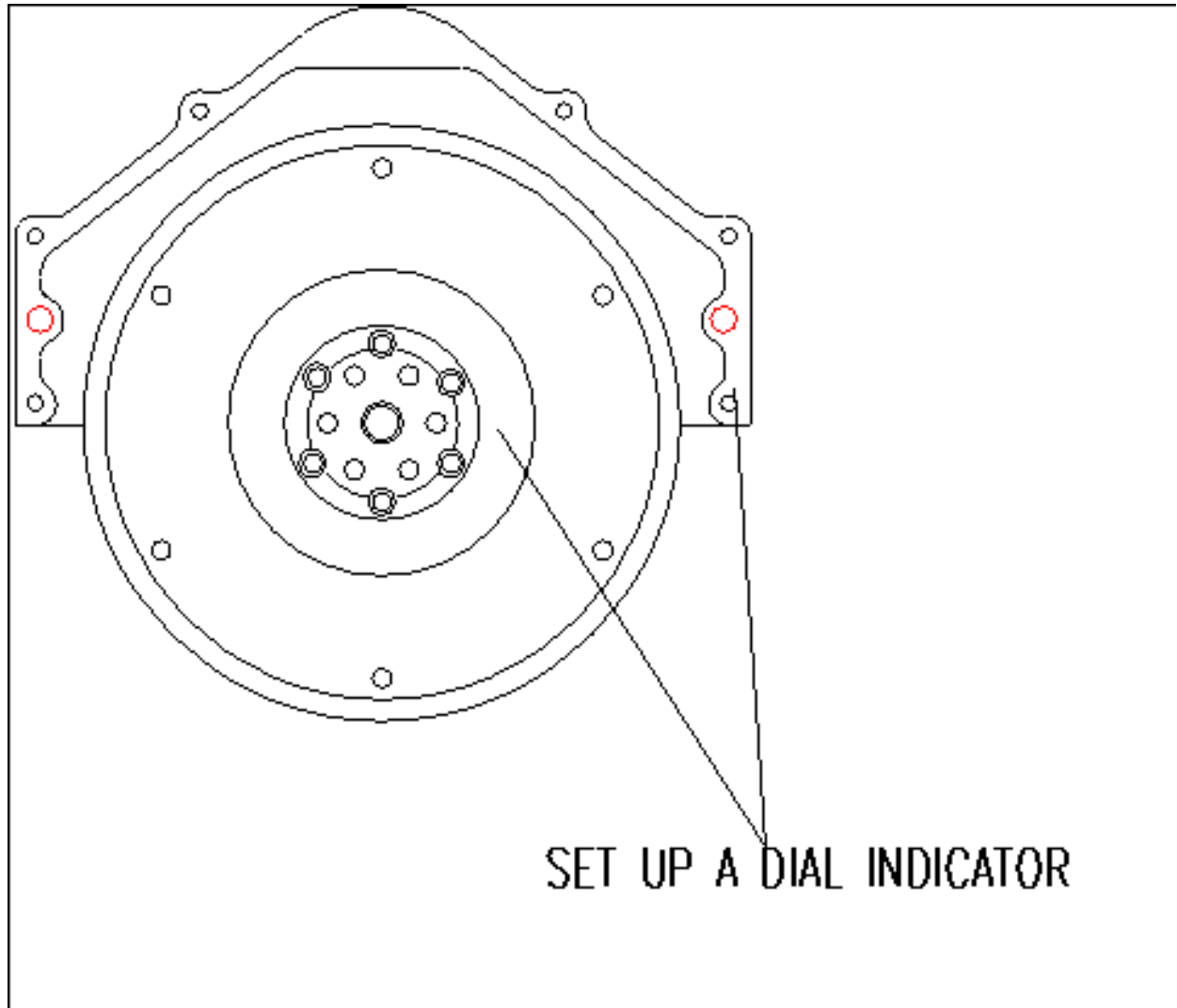
2. Cut 10mm off the original bracket. Refer to diagram
3. Bend the bracket down 90 degrees. Refer to diagram
4. Drill a 8mm hole in the bracket. Refer to diagram
5. Using a M8 X 12mm bolt, fix bracket to vacant mounting block and bend the pipes to follow closely the shape of the diff housing. Refer to diagram

ENGINE MOUNTING POSITIONING

1. The most accurate way to determine the position of the new chassis posts is to trial fit the new engine.
2. Push the torque converter into the transmission as far as it will go. This will make the fitting of the engine to the automatic transmission easier.
2. Fit the two 9.5mm dowels (supplied in the kit) to the rear of the new adaptor housing.
3. Fit the new adaptor housing to the Nissan automatic transmission bellhousing using the original Nissan bolts and washers.
2. Make sure that your engine has the original GM engine block to rubber mounting brackets fitted. **NOTE:** The early carbie engines are fitted with 45mm high brackets, these brackets should not be used. All EFI engines are fitted with 60mm high brackets. The engine mounting kit will only suit the 60mm high brackets.
3. Loosely fit the new chassis posts to the GM rubbers. Then fit them to the engine brackets. The new chassis brackets, drivers and passenger side are identical.
4. Make sure the dowels are fitted to the rear of the GM engine. Guide the engine into place. Secure the engine to the bellhousing using the new bolts supplied.
5. Once satisfied with the engines positioning tack weld the chassis brackets to the chassis.
6. Remove the engine, then weld the front and back flanges to the chassis. **NOTE:** It may be easier to remove the engine by first removing the engine mount rubbers and block brackets.
7. Heat the top flaps on the new chassis brackets with an oxy and then tap it down to suit the profile of the chassis.
8. Complete the welding.
9. Paint the welded area.

ENGINE PREPARATION

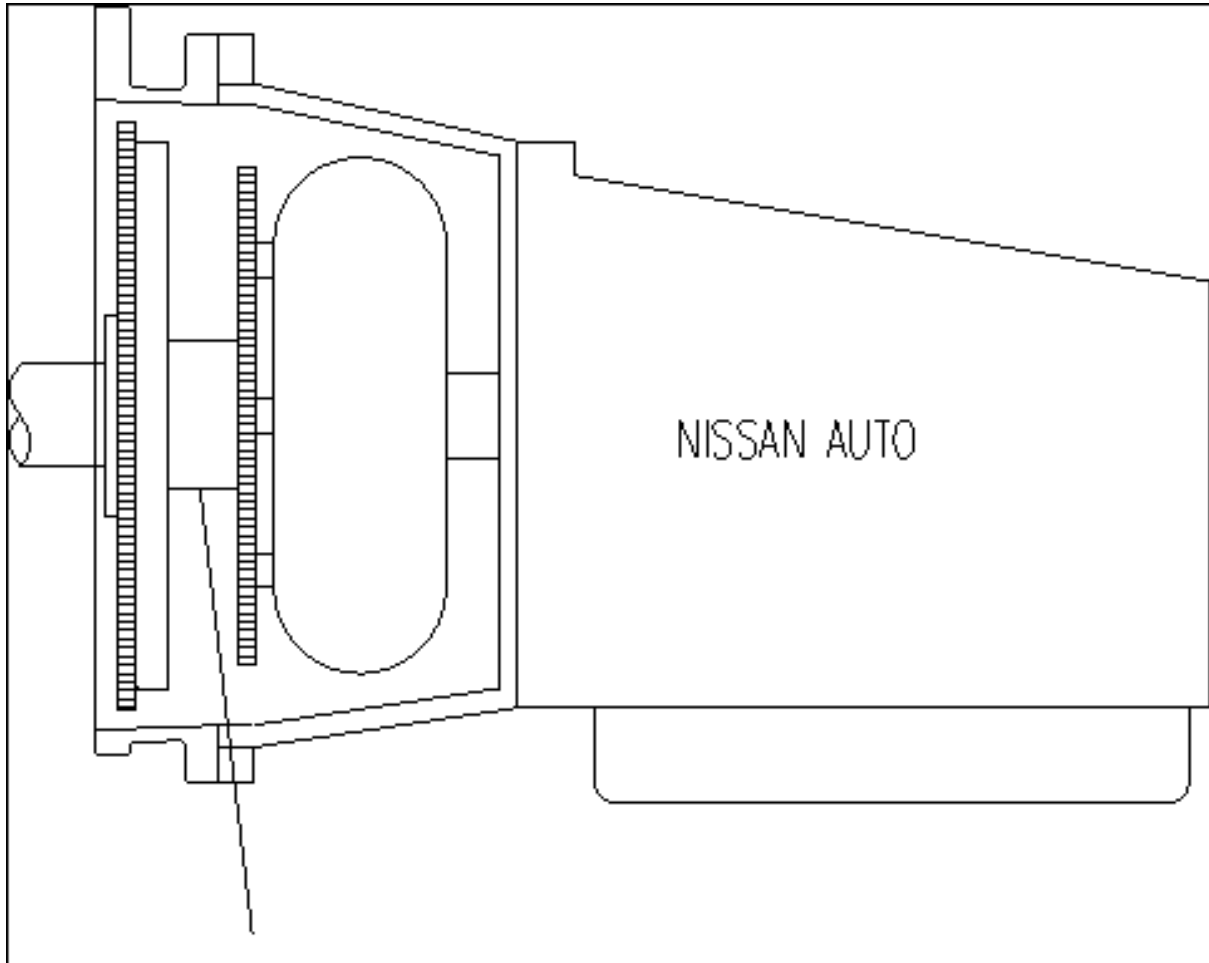
1. Fit the GM manual flywheel to the rear of the engine but do not fit the bolts. **NOTE:** It is mandatory that you use a manual flywheel instead of an automatic flexplate, as the flexplate will flex excessively when cranking the engine this will cause starter pinion or ring gear failure.
2. Fit the new crankshaft adaptor to the rear of the flywheel. Use loctite on the socket head cap screws supplied. Torque to specification 55 to 60ftlb or 75 to 80nm.



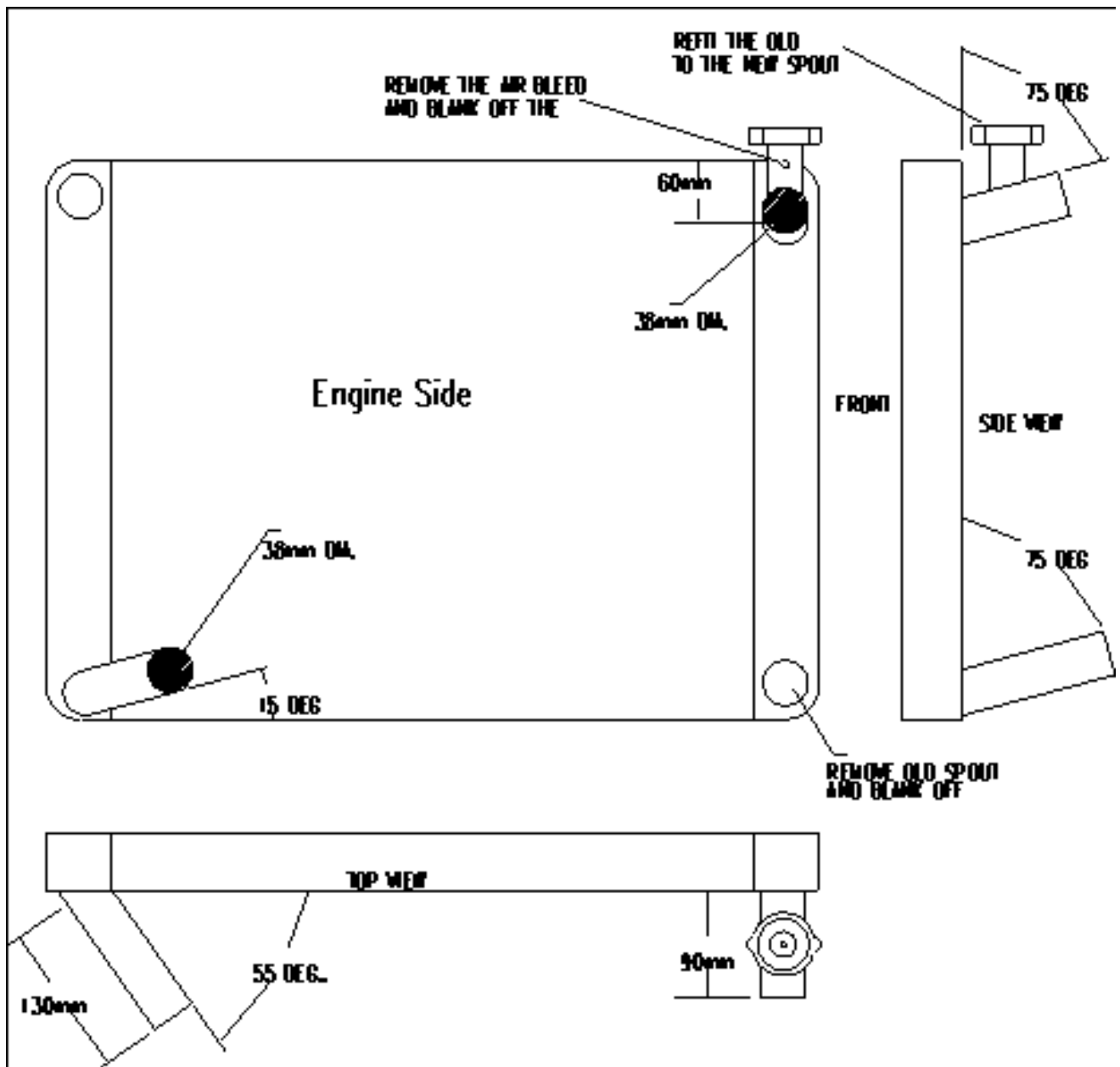
3. By using the rear block surface as an accurate reference point, check that there is no excessive run out on the rear most edge of the new crank adaptor. Excessive run out may be experienced if the GM flywheel being used has not been machined accurately. If you do have excessive, run out (more than 0.005") please call our technical department for further assistance. **Refer to diagram.**
4. Make sure that the engine has the two dowels fitted to the rear.
5. Fit the adaptor housing to the back of the engine and secure it using the bolts supplied. The 4 bolts, spring washers and flat washers are to be used on the 4 uppermost bolt holes and the two socket head cap screws are to be used on the two lower bolt holes.
6. If everything checks OK so far, bolt the original Nissan flexplate and spacer (see note below) to the rear of the new crank adaptor using loctite on the original bolts. Torque bolts to specification 70ftlb or 95nm. **NOTE:** This spacer is located behind the flexplate, between the crank and flexplate. Nissan use this spacer to locate the torque converter spigot to the crankshaft. If in doubt, refer to your Nissan workshop manual. The photos below are of the spacer with our crankshaft adaptor.



ENGINE INSTALLATION



2. Lower the engine into place and line up the torque converter boss with the centre of the crank adaptor.
4. Guide the engine over the chassis posts and refit the engine mounting rubbers, brackets and bolts.
5. Tighten the bellhousing bolts.
6. Refit the original torque converter bolts and tighten to specification.
7. Fit the torque converter bolt, access cover to the adaptor housing and secure it using the two M8 bolts, spring and flat washers supplied in the kit.
8. Fit the new flywheel cover plate to the adaptor housing, secure it using the three M8 bolts and washers supplied.
9. Fit the starter motor and seal up any gaps with silastic, this will prevent any water or mud from entering the bellhousing.
10. Fit the temperature and oil pressure adaptors supplied in the kit. Now fit the senders previously removed from the Nissan engine. **NOTE 1:** Use Teflon tape or liquid Teflon. **NOTE 2:** VT V8 engines do not have a separate water temp sender for the Commodore gauge, you will need to drill and tap a 1/8" NPSF 27tpi hole into the water jacket of the intake manifold. Then the adaptor supplied can be fitted.
11. Modify radiator spouts to correspond with the new GM engine's outlets. **Refer to diagram**



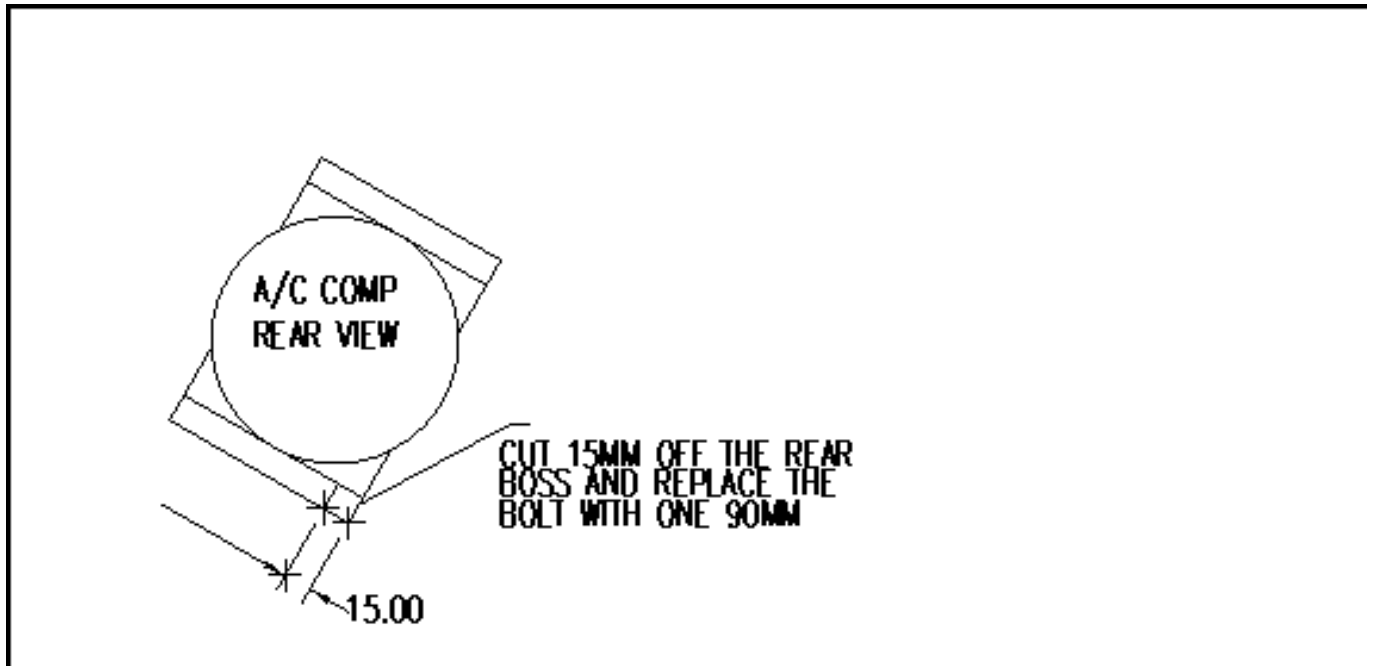
4. Refit the radiator.
5. Fit the top and bottom radiator hoses. Part Numbers: CH1385 top and CH1556 bottom.
6. Fit the heater hoses, two are required Part Number, CH1326.
7. Fit the Nissan power steering pump using the MFK627 kit.
8. Fit the air-conditioning compressor. **NOTE:** Brackets will need to be fabricated if you are using the original Nissan items.
9. When fitting the Holden EFI engine to a Nissan GQ Patrol using the GM air conditioning compressor a modification will be required to clear the front diff when the suspension is fully compressed. The mod is illustrated in the diagram below. **NOTE 1:** This conversion was undertaken using the cast aluminium GM bracket part number 92036528 manufacture date on the casting is 01/88. **NOTE 2:** Some Nissan patrols also had a steel, fabricated bracket retro fitted to the pan hard rod bracket. This bracket will need to be modified to clear the A/C compressor.

Important Notes:

1. The stall speed of a torque converter is determined by the amount of torque that is produced by the engine. Since the new engine that you intend fitting will have different torque characteristics to the original engine, 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.

NOTE: Nissan transmissions are electronically controlled. Signals from the engine are required for it to operate correctly. For example: Engine RPM, and throttle position sensor signals. The kick down cable should also be connected. For the correct adjustment of these input signals, we suggest you seek advice from your local transmission specialist.



10. Complete the wiring. If you are fitting a fuel injected Holden V8 engine with the MFK690 loom, refer to the instructions supplied.
11. Connect the tachometer interface (MFK1165) using the instructions supplied.
12. (EFI engines) Fit the air cleaner. A Commodore one can be fitted or alternately a Donaldson type can be used.
13. Complete the exhaust system.
14. Check all fluid levels and fill fuel tank with required grade of fuel.
15. Double check all-mounting bolts are tight.
16. Start the engine and check for-
 - Fuel leaks.
 - Oil leaks.
 - Water leaks.
 - Exhaust leaks.

Allow the engine to warm up and recheck above.

21. Refit the bonnet.

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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