Toyota Landcruiser Chevrolet V-8 Conversion Installation Instructions

Congratulations! You have selected the famous Downey V-8 Conversion Kit for your Toyota Landcruiser/Chevy V-8 conversion. Developed and refined to a level near perfection, it is the kit you can count on to endure the test of time.

In use in thousands of Landcruisers across the country, this is the kit that brings power, performance *and* economy to the best 4WD rig around. And now with this complete instruction book, we've made it even easier for you to make the best even better.

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Read These Instructions Carefully BEFORE Starting Installation!!

These instructions were written specifically for the installation of a Small Block Chevrolet Engine (283, 307, 327, 350, & 400 CID) into a Toyota Landcruiser, 1964 and newer, and mated with the stock 3- or 4-speed transmission.

To determine whether you have an older Landcruiser, check the inspection cover on the rear side of the transfer case. The 1964 and later models have a 6-bolt inspection cover, while the older models have a 4-bolt cover.

We are often asked about the cost of the complete conversion, but it's nearly impossible for us to determine, since you will be dependent upon the cost of parts and services specifically
available in your community. To roughly figure the cost before starting, add the cost of the kit, plus:

Small Block Chevrolet Engine - new, used, rebuilt
Additional Chevy Parts - available from your local dealer (see page 12)
Other Downey Components - headers, clutches, etc.
Exhaust System - from your local muffler shop Driveshaft Modification - from your local drive shaft shop

While the book is basically written for the FJ-40, the FJ-55 (Landcruiser Station Wagon) conversions are becoming more and more popular, so we have included several comments for those models. Briefly, some of the differences will be:

a) Side weld-in mounts must be used;
b) Headers are not available (must use stock manifolds); c) Emergency brake linkage modification is necessary;
d) Firewall modifications may or may not be necessary.

All of the instructions are numbered for simplification and should be followed in order. Again, we strongly urge you to read the book completely before starting.

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Removing Stock Engine

1. Disconnect or remove:

a. skid plate
b. drive shafts
c. grille panel
d. radiator
e. battery
f. battery carrier
g. oil pressure wire
h. temperature wire
i. throttle linkage
j. choke cable
k. smog system
1. speedometer cable
m. 4 W.D. controls
n. trans, shift linkage
o. shift lever
p. emer. brake cable*
q. slave cylinder hose
r. complete exhaust system

The emergency brake drum must be removed in order to disconnect brake cable.

2. Unbolt front and rear motor mounts.

3. Using a strong hoist, remove engine, transmission and transfer case as one assembly.

4. After engine is removed from vehicle, remove alternator, slave cylinder, temperature and oil sending units. They can be used on the Chevy engine. We do not recommend using the Toyota coil since it is not mated to the Chevy distributor. See page 12 for Chevy coil and external resistor part numbers.

5, Remove all remaining shift linkage from vehicle and transmission (column shift models only).

6. Torch or drill the stock right rear motor mount off the frame. The Chevy engine mounts to the stock front frame mounts and cushions when using Downey F-1220 (Bolt-on mount). If using Downey F-1225 (weld-on mounts), torch or drill stock front mounts off frame. FJ-55 (station wagon models) must use side weld-on mounts.

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Preparing Transmission And Transfer-Case

1. Remove the stock transmission and transfer-case from the 6 cyl. bellhousing. It is not necessary to remove the transfer- case from the transmission.

2. Remove the stock throw-out bearing guide or retainer from the front of the transmission. Some fluid will leak out so check fluid level once conversion is complete.

3. Install new oil seal into the new bearing retainer. The open side of the seal (spring showing) should be open to the transmission fluid. Install new bearing retainer onto transmission.

4. Slip the round aluminum alignment ring onto the bearing retainer and bolt down tight with provided metric allen head cap screws. On 4 speed conversions, reinstall the 3 stock lower bearing retainer bolts.

5. The metric allen head cap screws must be ground off on the edges. This is necessary since the Toyota bolt pattern, which can't be changed, conflicts with the bearing retainer opening in the bellhousing. The bellhousing will prevent these 4 bolts from loosening.

6. On 3 speed conversions, you may have to enlarge the trans- mission and adapter spacer plate mounting holes with a rat- tail file to insure clearance. The threads in the transmission lower mounting holes must be removed. Use a 1/2" drill to open up these holes. All alignment is established at the aluminum alignment ring so mounting holes can, and should be sloppy to insure adequate clearance when bolting transmission to bellhousing.

7. Before installing transmission to bellhousing, insure shift fork and T.O. bearing are properly installed. Grease the outer sliding surface of the bearing retainer.

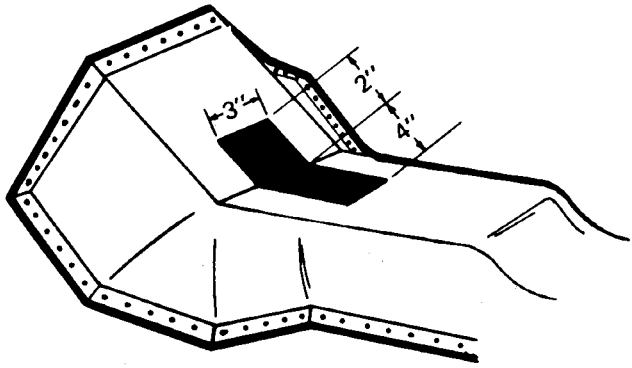
8. On 3 speed conversions, use the provided 1/2" allen head cap screws for bolting transmission top mounting holes into
Chevy bellhousing. Use the provided 2%" long cap screws and self-locking nuts for bolting transmission bottom mounting holes to bellhousing.

9. On 4 speed conversions, simply use the provided 1/2" allen
head cap screws to bolt the transmission to the adpater plate. These cap screws should go through the adapter plate but
not hit the bellhousing. A cracked bellhousing will result if the cap screws provided are too long.

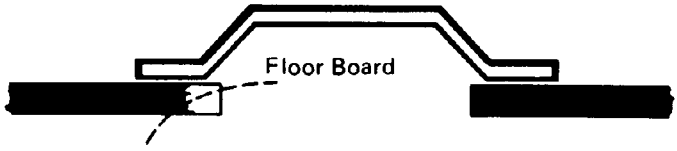
10. If yours is not already a floor shift model, now is the time to install the floor shift (F-1330), minus shift lever, onto the 3 speed transmission.

Vehicle Modifications

1. A section of transmission floor board must be removed to clear floor shift (omit on Turbo Hydra-Matic conversions). The approx. cut size is illustrated below. Cut 4" back from seam to allow for future transmission removal since the transmission must slide back before it can drop down.



2. When the stock transfer-case linkage (firewall and engine mounted) is going to be used, it may be necessary to remove a section of floor bracing under the passenger's side for linkage clearance. It can be torched out or bent in with a BIG hammer.



3. The stock 6 cyl. right hand rear motor mount must be torched or drilled away from the frame. The stock 6 cyl. front frame mounts must be removed if Downey F-1225 (weld-on mounts) are being used.

   FJ-55 owners — emergency brake linkage must be modified to protrude out of firewall approximately 3" closer to R.H. (passenger's) side of the firewall.

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Preparing The V-8

1. If you are using Chevy exhaust manifolds (headers make a much simpler installation) it is suggested that you use G.M. No. 3797901 and No. 3814970. If your production date is Sept. 1972 or newer, use manifold No. 3882879 for the left hand bank. This manifold will clear the steering gear box and you can use a matching manifold for the right hand bank. These manifolds have the proper dumping features and provide the machined surfaces for adapting and mounting the Toyota alternator. If headers are going to be used, Downey F-1640 will be required. The alternator should be installed on the left side for battery clearance on the right side.

2. Install Downey F-1235 onto exhaust manifold and F-1240 onto your Toyota alternator.

3- Install Toyota oil pressure sending unit into back of Chevy block using Downey F-1260. This adapter is necessary to prevent the sending unit from hitting or interfering with distributor cap. Use thread sealant provided.

4. Install Toyota temperature sending unit into Chevy engine using Downey F-1255. Most Chevy engines provide a location in the front section of the intake manifold or between exhaust ports on either head.

5. The stock Chevy pilot bushing is correct in size but should be checked for wear. If your engine came out of a car equipped with automatic transmission, remove the automatic fly wheel and install a new pilot bushing. G.M. No. 3752487. 6. Bolt fly wheel, G.M. No. 3998281, to the Chevy crankshaft using special Chevy bolts. This flywheel is necessary to assure proper starter engagement and allows use of an 11" clutch.

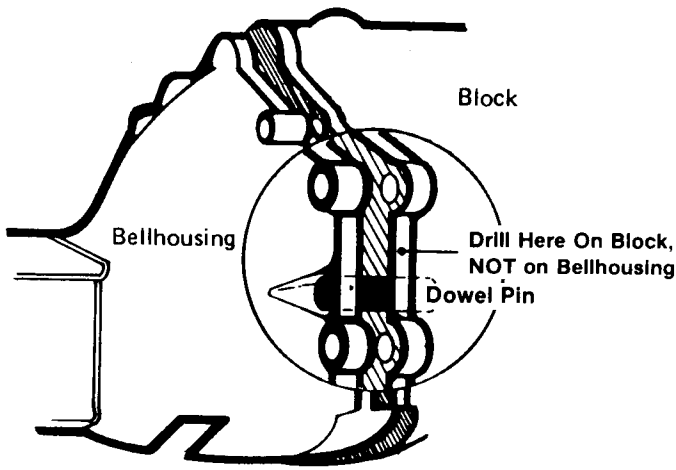
7. Install 11" pressure plate (G.M. No. 3758681) and clutch disc (G.M. No. 6259177) onto flywheel using a pilot shaft. Special Chevy bolts should again be used. There are other types of higher performance clutches that may be used (see Downey F-1275). Do not use Diaphragm style pressure plate.

8. After installing clutch assembly onto flywheel, install Chevy bellhousing (G.M. No. 3832808) onto engine making sure throw-out arm (G.M. No. 3765372) and bearing (G.M. No. 908244) are installed correctly. Inside surface of T.O. bearing should be greased.

9. If using Downey F-1220, remove stock Chevy fuel pump and push rod, install Downey F-1245 block-off plate. An electrical fuel pump must be used with F-1220. Best results are gained from electrical fuel pumps when mounted close to the tank under floor boards since electric pumps push rather than suck gas.

10. Bolt front motor mounts to front or side of Chevy engine. When using the side mounts, the longer of the two mounts goes on the right hand side.

11. The transfer-case linkage bellcrank needs to be remounted to the Chevy block (unless your model is already equipped with the 4 W.D. floor shift). The best place for this pivot point is a location on the block as illustrated below. The block must be drilled and metric tapped to accommodate the metric threads on the bellcrank. Also see Downey F-1340 to eliminate this linkage problem.



12. Install proper starter for use with bellhousing and flywheel (63-67 Chevy pickup). See bellhousing and flywheel part numbers on back page.

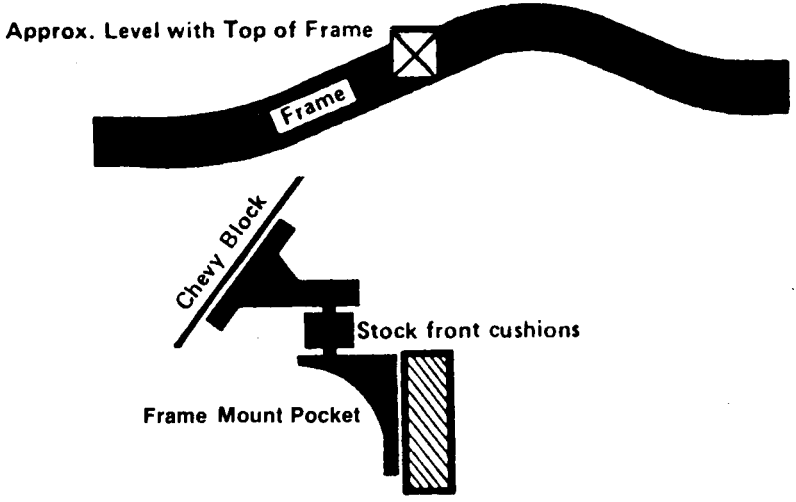
V-8 Installation

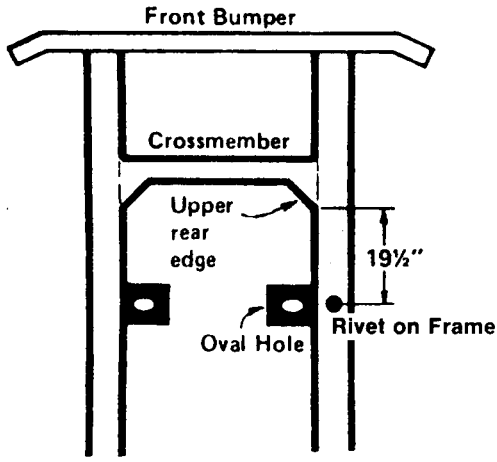
1. BOLT-ON FRONT CRADLE (F-1220)

With the complete drive train assembled (less drive shafts) you are now ready for engine positioning. Using the hoist, find a good balance point on the engine. Lift the assembly into vehicle. The engine location will be determined by the stock front motor mounts already on frame when using the bolt-on cradle. The cradle will determine the height and depth of the assembly into the compartment. Simply bolt front cradle to engine and stock front cushion mounts. The stock front cushions are attached to the frame mounting brackets in an adjustable slot. The cushions can be adjusted inward or outward as per your leveling requirements.

2. WELD-ON FRONT MOUNTS (F-1225)

Position center of frame bracket onto frame approximately 19½" behind top edge of front crossmember. Weld frame portion of front mounts to frame so that edge of mount is approx. even with top edge of frame. With side mounts bolted to engine and frame mounts welded to frame, install stock front cushions and completely bolt mounts together. FJ-55 owners: Position engine as close to the firewall as possible to prevent or reduce the amount of necessary driveline modifications.

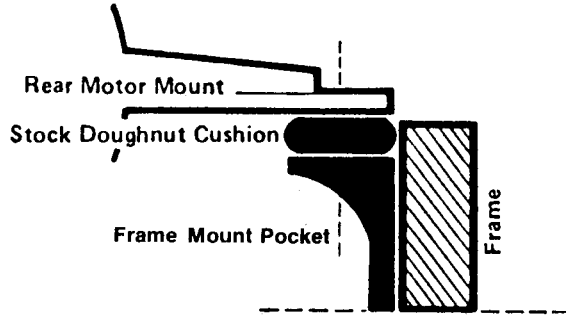




3. Remove transfer-case rear inspection cover (6 bolts). Bolt on rear motor mount with a new gasket on each side. The inspection cover is reinstalled on the back side of the rear mount. Silicone adhesive offers the best gasket sealant for this mount.

4. With the front motor mounts bolted to the frame, you can determine where to weld or drill and bolt the rear mount side pockets onto the frame. The bottom of the pockets should be level with the bottom of the frame. If you cannot position them this way due to slight frame twist, make sure frame pockets are straight across from each other and level with each other. These pockets must be welded to the frame on 4 speed models since the pockets location will be directly over a round frame hole.

   FJ-55 Owners — You may require additional spacers between pockets and frame since your frames are further apart than FJ-40 frame rails.



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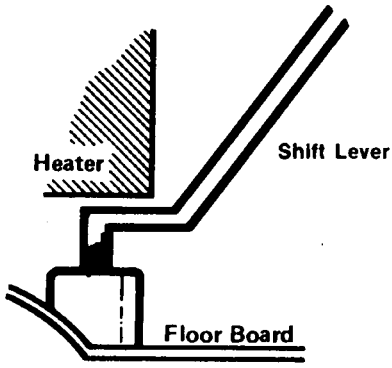
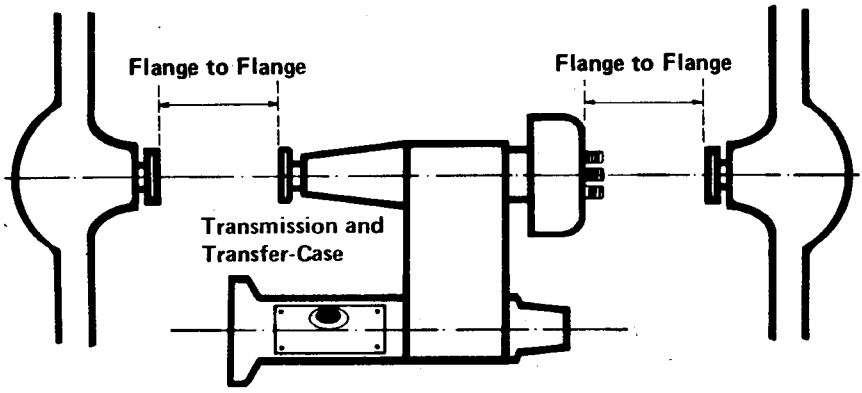
5. With pockets bolted or welded to frame, use provided bolts and your stock rear doughnut mounts, complete rear motor mount bolt-up. You may have to cut slight notches in the rear motor mount to clear PTO winch linkage on the left side or Hone-O-Drive linkage on the right side.
6. With the complete assembly bolted down, you can now install the slave cylinder using Downey F-1250 bracket. You may have to shorten slave cylinder push rod, normal.
7. Install transmission shift lever. The lever will need to be modified before installation. Heat and bend the lever at 90 degrees pointing straight back. After the lever clears the heater, bend upward to desired position.



8. With the transfer-case linkage bellcrank in its new position on the Chevy block, you can install the link from the bellcrank to the transfer-case. The rod will require some modifications (omit this step if Kit F-1340 is being used or if your model already has the 4 W.D. floor shift).
9. You can now measure from flange to flange to determine your new drive shaft lengths. Many machine shops or drive shaft shops are equipped to modify both shafts at a reasonable cost.

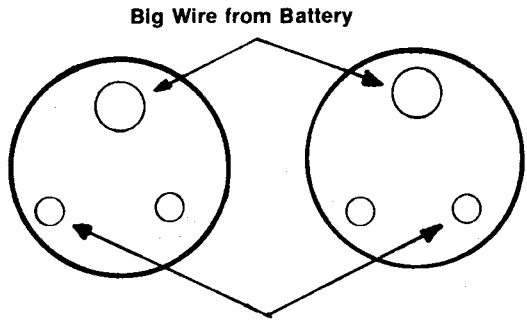


10. Your engine is now in and bolted down. The rest is up to you as far as exhaust system, battery mounting, accelerator hook-up (G-1525 bolts to any flat surface at firewall), fan and pulley selection, etc. These are things that vary extensively from conversion to conversion so we could not offer solutions. We do recommend you remount your radiator back closer to the fan and downward so that the fan blade clears lower radiator hose. The best new location for your battery is immediately behind the right front head lamp.

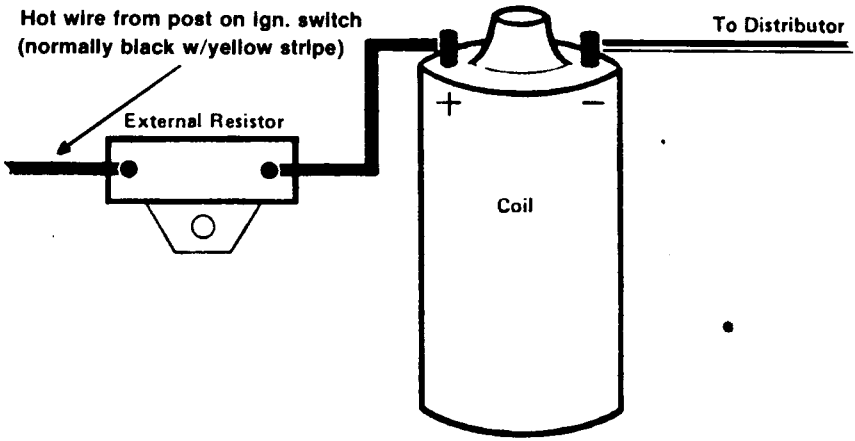
Wiring Hints

1. Starter on Toyota solenoid is furthest from engine block. On Chevy solenoid it will be opposite, closest post to engine block.

Toyota Starter Solenoid **Chevy Starter Solenoid**



2. Use Chevy coil (No 1115202), splice external resistor (No. 1957152) into wire feeding into coil.



Chevy Parts Required

External Resistor	G.M. No. 1957154
Chevy Coil	G.M. No. 1115202
Pilot Bushing	G.M. No. 3752487
Flywheel (63-67 Chevy Pick-up)	G.M. No. 3998281
Chevy Pressure Plate	G.M. No. 3758681 }
Chevy Clutch Disc	G.M. No. 6259177 } or F-1275 *
Throw-out Bearing (must be exact)	G.M. No. 908244 }
Shift Fork	G.M. No. 3765372 or F-1270
Bellhousing (63-67 Chevy Pick-up)	G.M. No. 3832808 or F-1265
Pivot Ball for Bellhousing	G.M. No. 3725240

* F-1275 Clutch Ass'y from Downey is rated 400 lbs. heavier than the stock Chevy unit for even better drivetrain performance.