86-95 Suzuki Samurai Stage 2 / Dual Surface Replacement Complete Clutch Kit (SKU# STM-HC-2)

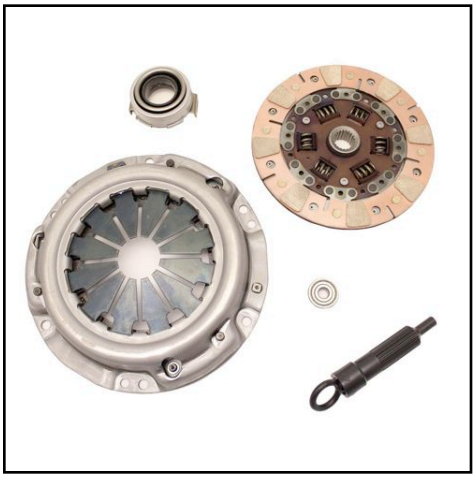
These Instructions will also work for:

SKU# STM-OECK Suzuki Samurai Stage 1 / OEM Replacement Complete Clutch Kit
SKU# STM-HC Suzuki Samurai Stage 3 / Replacement Complete Clutch Kit

These instructions also include:

SKU# SER-RMS Suzuki Samurai Rear Main Engine Seal

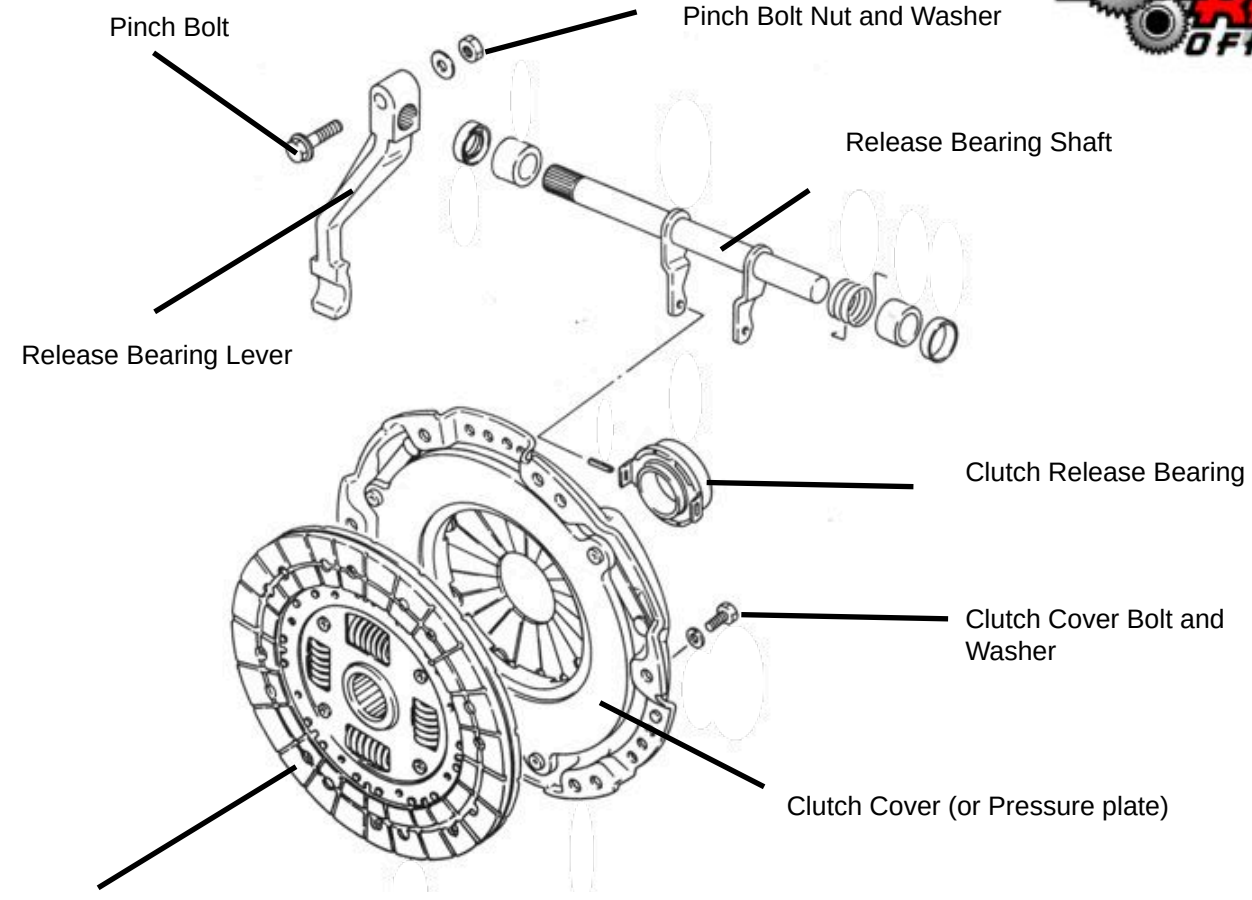
Installation Instructions

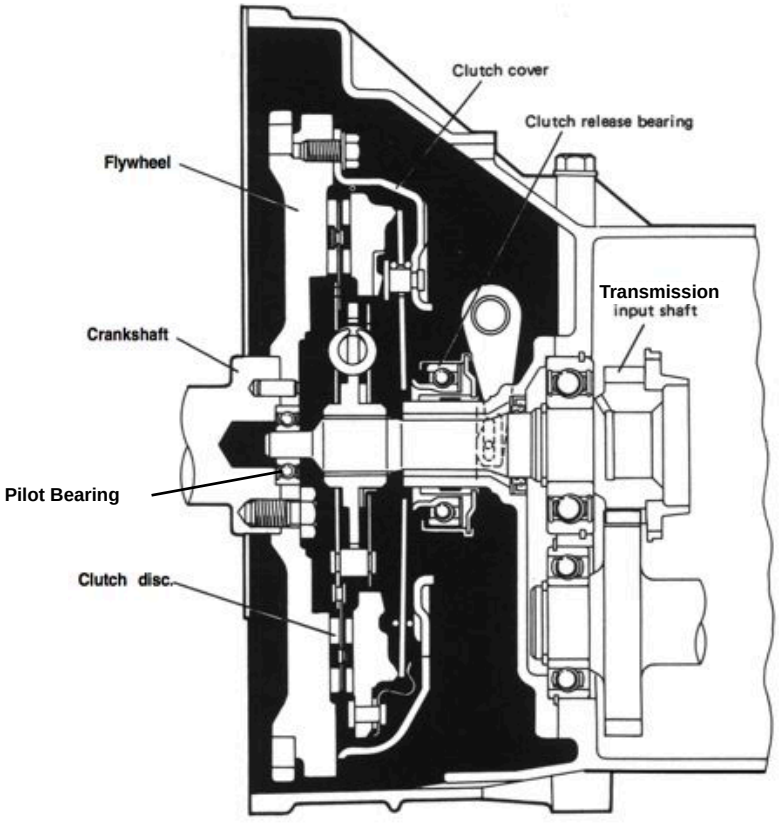


CAUTION: Safety glasses should be worn at all times when working with vehicles and related tools and equipment

Suggested Tools:

- Ball Peen Hammer
- Larger Standard Screwdriver
- Large Pry Bar
- 3/8 Drive Sockets:12,14,17 mm
- 3/8 Drive Ratchet
- Torque Wrench: Foot-Pound
- Combination Wrenches: 10,12,14,17 mm


Pinch Bolt
Pinch Bolt Nut and Washer
Release Bearing Shaft
Release Bearing Lever
Clutch Release Bearing
Clutch Cover Bolt and Washer
Clutch Cover (or Pressure plate)
Clutch Disc

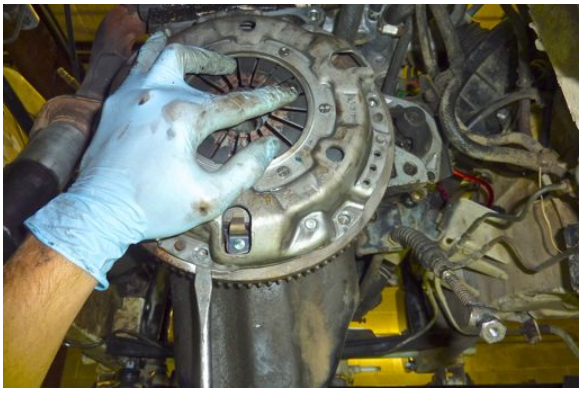

Clutch cover
Clutch release bearing
Flywheel
Transmission input shaft
Crankshaft
Pilot Bearing
Clutch disc

Notice:

These instructions begin with the assumption that the transmission has already been removed. If you need instructions for removing the transmission we invite you go use our Transmission Removal Instructions found on our website. Complete Steps 1 through 39. After completing Step 39, start with Step 1 in these instructions.

Step 1

Remove the (6) clutch cover bolts using a 12 mm socket.



Step 2

While supporting the clutch disc with your middle finger and clutch cover with your hand, pry the clutch cover from the flywheel locating pins using a large standard screwdriver.

Caution: Be sure the clutch disc does not fall out on your toe.

Step 3

Set the clutch cover and clutch disc aside.

Tech Tip

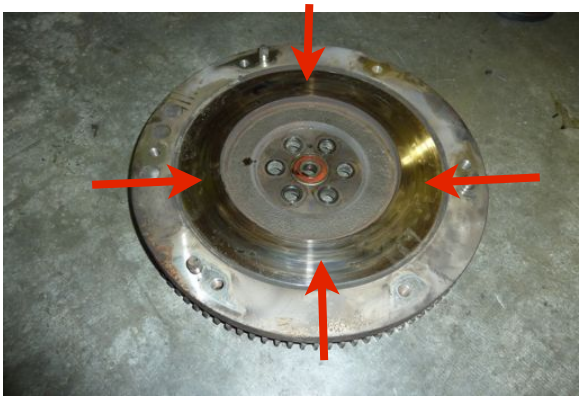
Even if the flywheel machined surface looks good (free from scoring, grooving or hot spots) we strongly recommend machining or replacing the flywheel anytime a new clutch is installed.

Step 4

Remove the flywheel bolts using a 17mm socket.

Step 5

Remove the flywheel.



Step 6

Inspect the flywheel machined surface for cracks, or blue (hot) spots. Blue spots and minor cracks can usually be machined out. If in doubt about wether or nut to reuse the flywheel, any reputable machine shop can advise you.

Step 7

Inspect for tooth wear on the starter ring. If wear is excessive it is best to replace the flywheel.

Note: These teeth are okay to use again, but if they were much worse we'd recommend replacing the flywheel.

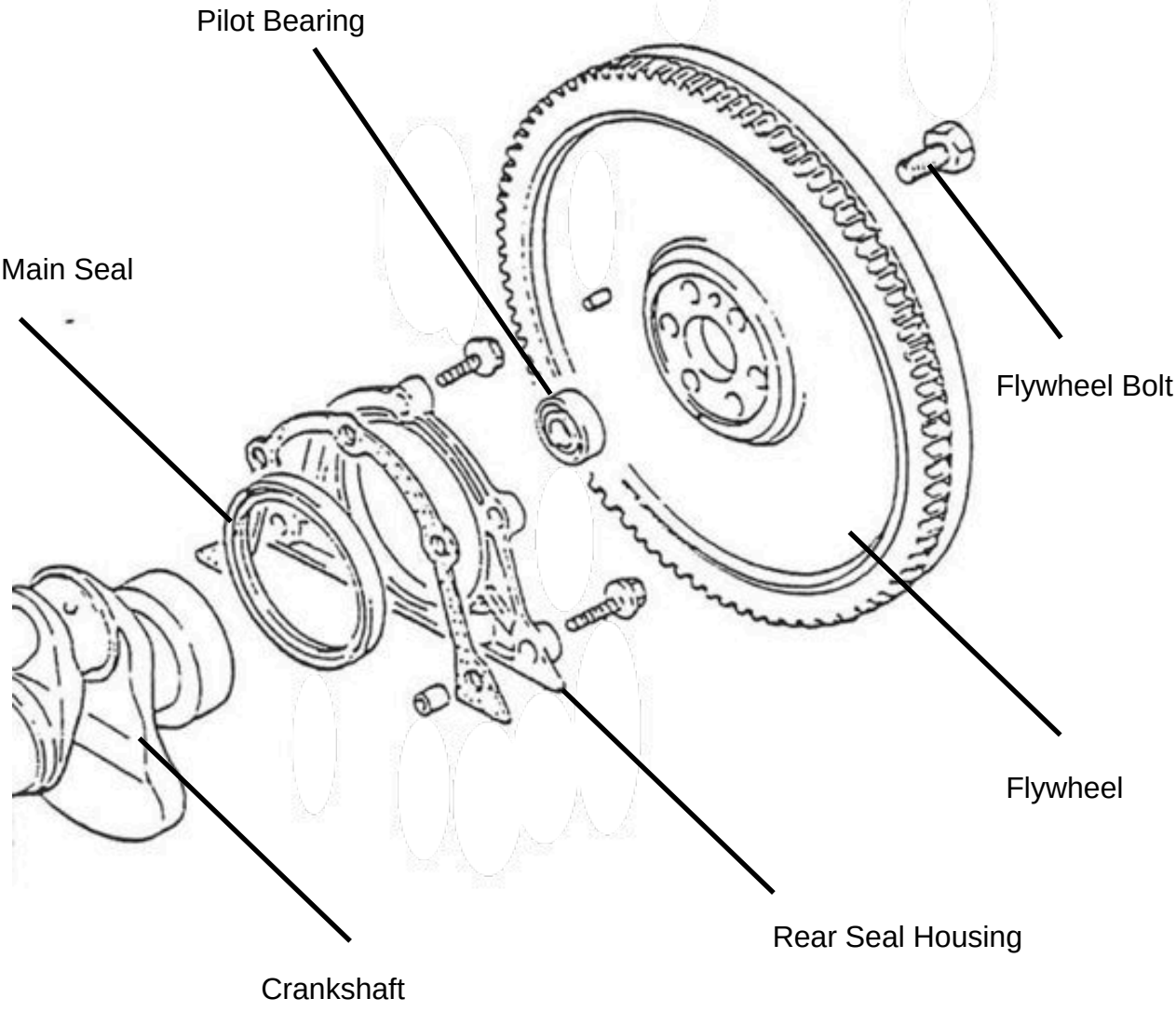
Step 8

If you are having your old flywheel machined, drive out the old pilot bearing using a socket that is a little smaller than the outside diameter of the bearing.

Tech Tip

If you are having the old flywheel machined send it out to the machine shop now.

Rear Main Seal and Related Parts



Notice: If you are not replacing the rear main seal, skip ahead to **Step 15**

Step 9

Using a seal hook, hook the seal and pull it out.

Caution: Do not gouge or mar the seal cavity or the crankshaft.

Step 9 Continued

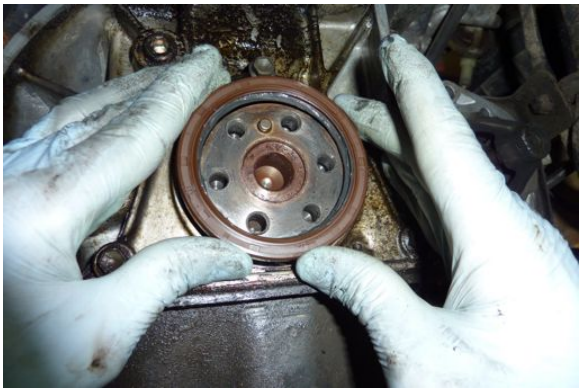
This shows the seal removed.

Step 10

Clean the crankshaft and the seal cavity with a rag.

Step 11

Lube the seal surface that rides against the crankshaft with a light film of bearing grease or engine oil to protect the seal on initial engine start-up.



Step 12

Orient the seal such that the girdle spring is facing toward the engine and position it over the crankshaft.

Step 13

Once the seal is positioned properly and started on the crankshaft, tap it into place using the flat side of a socket all the way around.

Step 14

Be sure the seal is flush with the rear seal housing all the way around.

Tech Tip

We will be installing a new flywheel. Whether it is a new flywheel or the old (machined) flywheel, the installation procedure is the same.

Step 15

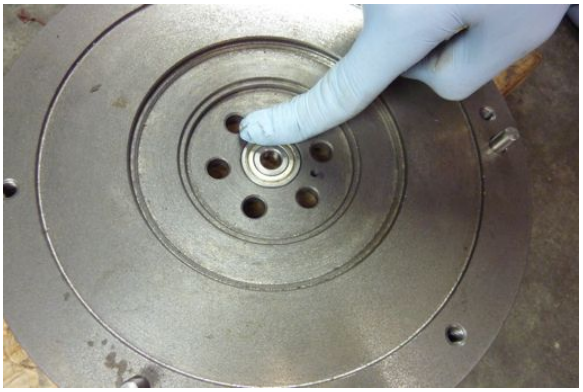
Place the flywheel on a block of wood with the machined (or clutch disc) side up.

Step 16

Position the new pilot bearing in the center hole.

Step 17

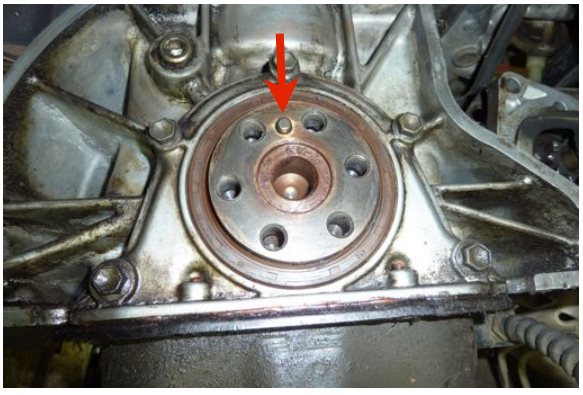
Using a socket that is a little larger than the pilot bearing, tap the bearing into the center hole of the flywheel.



Step 18

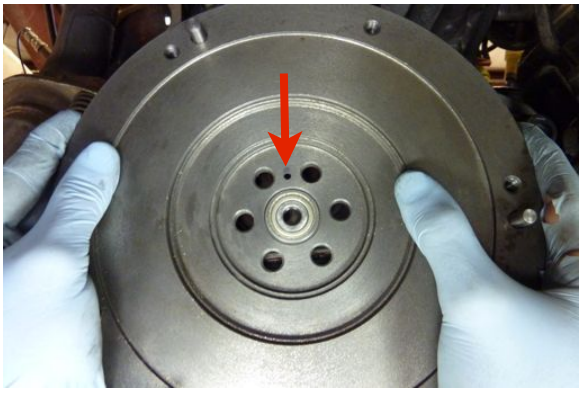
The bearing should be flush with the flywheel.

Installing the Flywheel



Step 19

Note the position of the locating pin in the crankshaft.

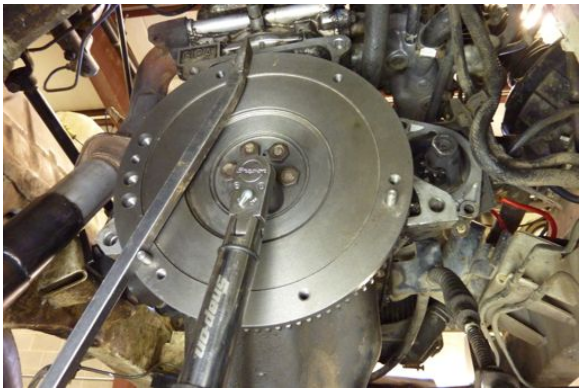


Step 20

Orient the locating hole of the flywheel so it aligns with the locating pin in the crankshaft.

Step 21

Install the (6) flywheel bolts.

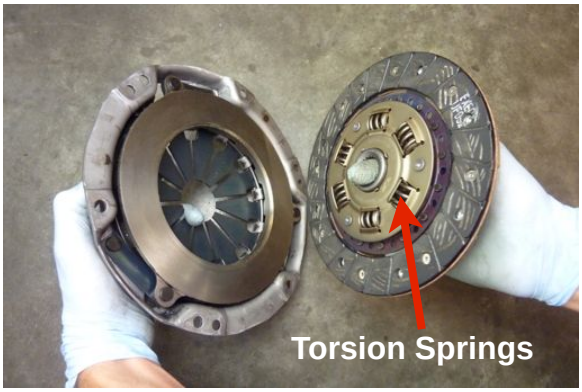


Step 22

Lock the flywheel using a pry bar and torque the bolts 41.5 - 47 ft. lbs.

Step 23

Clean the machined surface with brake cleaner and a cloth.



Step 24

Place the clutch disc and clutch cover together as shown.

Note: Insure that the torsion springs go toward the clutch cover.

Step 25

While holding the clutch disc and the clutch cover together with your forefinger, position the clutch cover on the flywheel locating pins.

Step 26

Start all 6 bolts and snug them just tight enough to hold the clutch disc in place but loose enough that it can be moved if needed.

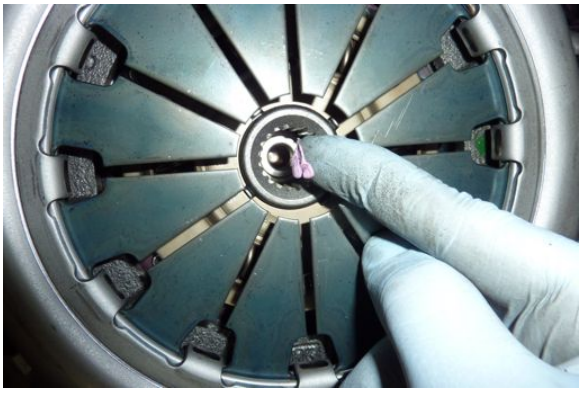
Step 27

The clutch disc must be perfectly centered on the pilot bearing. To accomplish this, insert the supplied clutch disc alignment tool, through the center hole of the clutch cover.

Step 28

Continue pushing the alignment tool inward until it has engaged the clutch disc as well as the pilot bearing.

Note: If the clutch disc will not move enough to allow for this tool to be installed, loosen off on the clutch cover mounting bolts.



Step 30

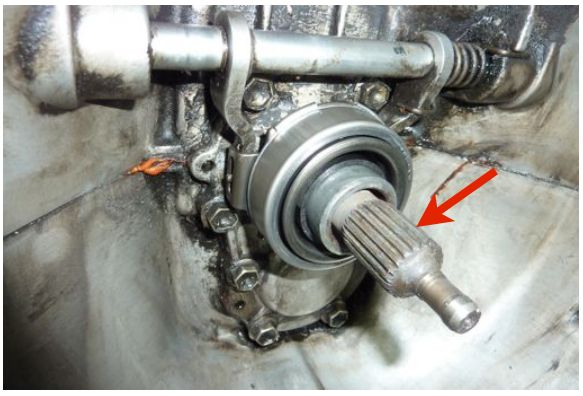
Remove the clutch alignment tool and apply a small amount of the supplied grease in the splines as shown here.

Step 29

Once the clutch alignment tool has been properly installed, tighten the clutch cover bolts in an increasingly tighter criss-cross pattern until 13.5 to 20 ft. lbs. has been reached.

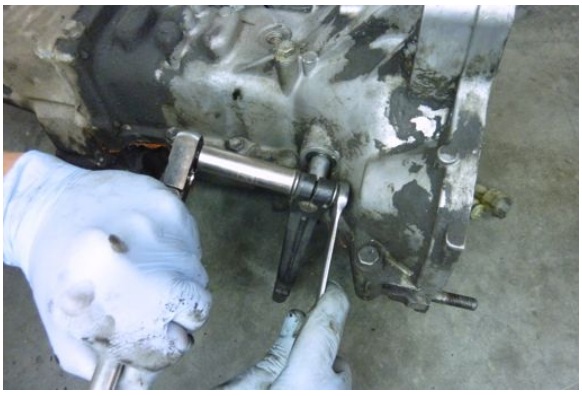
Note: The flywheel can be held from turning by using a large standard screwdriver as shown here.

Caution: Never tighten the clutch cover bolts unevenly. Clutch cover warpage or damage could result.



Step 31

Inspect the transmission input shaft splines for wear or damage. If the shaft has signs of wear the shaft should be replaced.



Step 32

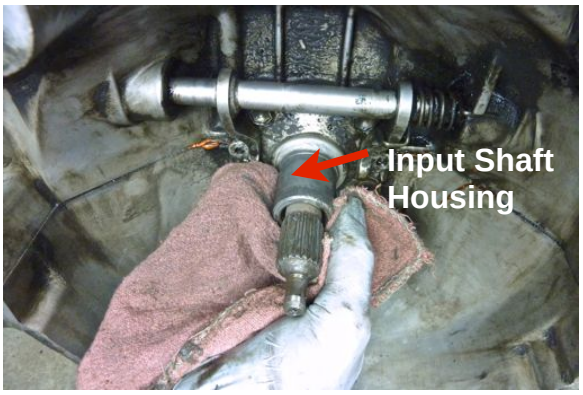
Remove the clutch release lever by holding the bolt with a 12 mm box end wrench and loosening the nut using 12 mm socket.

Step 33

Remove the clutch release lever.

Step 34

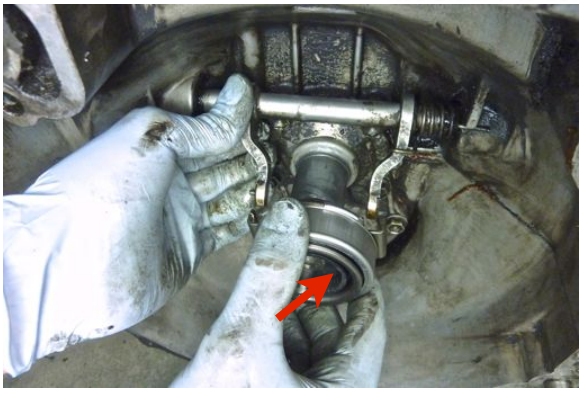
Rotate the release shaft toward you and remove the clutch release bearing.



Step 35

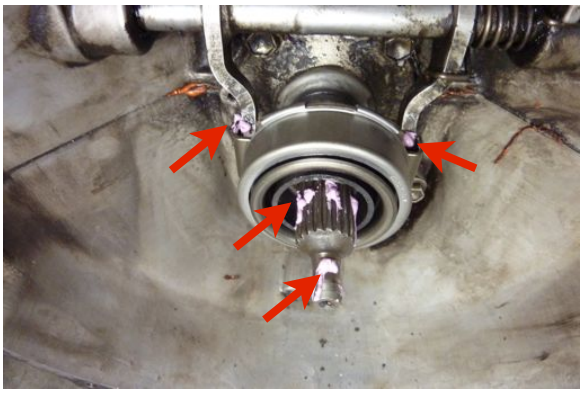
Clean the input shaft housing and inspect for wear. The housing should be replaced if it has grooves, cracks or any uneven surfaces.

Click HERE to see a replacement part.



Step 36

Install the release bearing. The new bearing comes pre-lubed in the area indicated by the arrow. If for some reason it is not lubricated, you are to apply some grease.



Step 37

Apply grease in the areas shown by the arrows.

Tech Tip

We recommend using Permatex Ceramic Extreme Brake Parts Lubricant or equivalent. Click HERE to see what is available from Low Range Off-Road.

Step 38

Reinstall the clutch release lever.

Note: Be sure to align the punch marks on the shaft with the punch marks on the lever. (**See Figure A on the next page**)

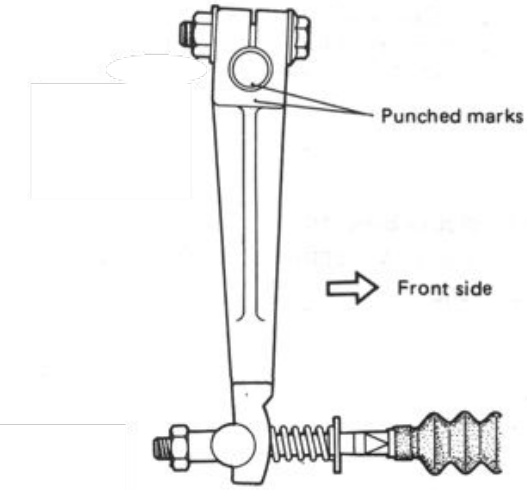
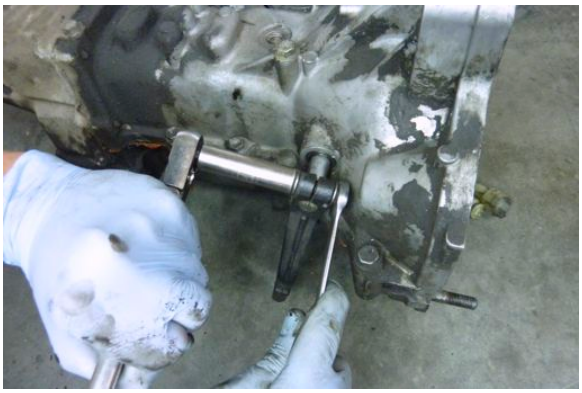


Figure A



Step 39

Tighten the pinch bolt and nut to 7.5 to 11.5 ft. lbs.

Notice:

Now we refer you back to the Transmission Installation Instructions Step # 50.

As always, If you experience any difficulty during the installation of this product please contact Low Range Off-Road Technical Support at 801-805-6644 M-F 8am-5pm MST. Thank you for purchasing from Low Range Off-Road.

These instructions are designed as a general installation guide. Installation of many Low Range Off-Road products require specialized skills such as metal fabrication, welding and mechanical trouble shooting. If you have any questions or are unsure about how to proceed, please contact our shop at 801-805-6644 or seek help from a competent fabricator. Using fabrication tools such as welders, torches and grinders can cause serious bodily harm and death. Please operate equipment carefully and observe proper safety procedures.

Rock crawling and off-road driving are inherently dangerous activities. Some modifications will adversely affect the on-road handling characteristics of your vehicle. All products sold by Low Range Off-Road are sold for off road use only. Any other use or application is the responsibility of the purchaser and/or user. Some modifications and installation of certain aftermarket parts may under certain circumstances void your original dealer warranty. Modification of your vehicle may create dangerous conditions, which could cause roll-overs resulting in serious bodily injury or death. Buyers and users of these products hereby expressly assume all risks associated with any such modifications and use.