Suzuki Samurai 6.5 Transfer Case Gear Kit, 105004-3-KIT

Kit Contents:

Gear, 26 Spline/26 Tooth	1.0
Gear, 44 Tooth	1.0
Gear, 58 Tooth/23 Tooth	1.0
Gear, 67 Tooth/ 27 Tooth	1.0
Counter Shaft	1.0
Counter Shaft Shim	2.0
Large Paper Gasket	1.0
Small Paper Gasket	1.0
Roller Bearings	2.0
Speedo O-Ring	1.0
Front Output Seal	1.0
Front Input Seal	1.0
Rear Output Seal	1.0
Kit Instructions	1.0

Suggested Tools:

- Ratchet, 12mm, 14mm, and 28mm sockets
- Air Wrench
- Needle Nose Pliers
- Hammer
- Grinder
- 3/16” Diameter Pin Punch
- Snap Ring Pliers
- 6mm Allen Wrench
- Gasket Scraper
- Flat Blade Screwdriver
- Adjustable Wrench
- Permatex® Ultra Grey® Silicon
- Axle Grease

If you have questions about installing your gears, please call us at 559-252-4950.

In these instructions, we refer to the different transfer case housing sections by name.
The photo below shows each of the housings and its name.

Step 1

Drain the oil from the transfer case. Remove the transfer case from the truck and remove the mounting rails or cross member from the case.

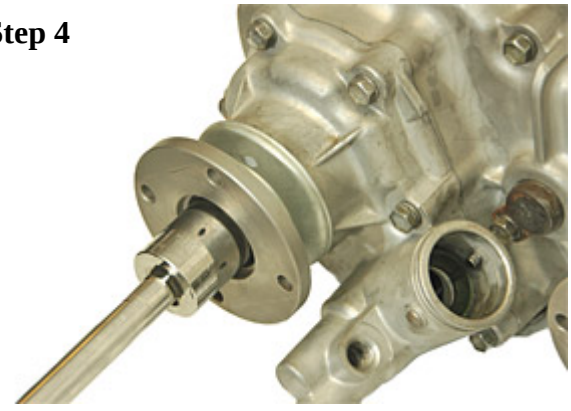
Step 2

Remove the 4wd indicator light using a 21 mm wrench.

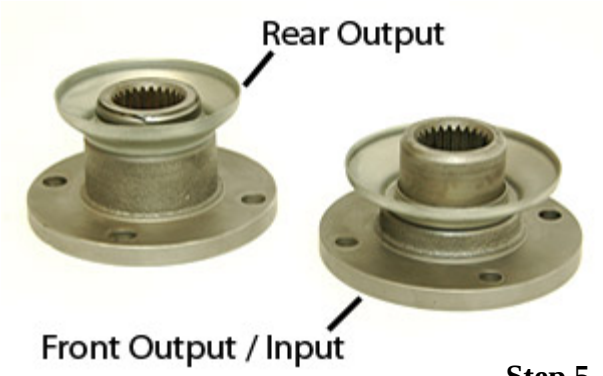
Step 3

Turn the transfer case over and collect the 4wd indicator ball as it falls out of the hole for the 4wd indicator. This steel ball is larger than the other two balls removed later.

Step 4



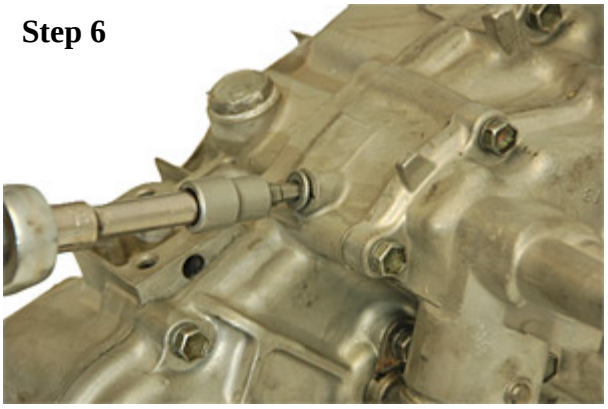
Using a 1 1/6" or 28mm socket, remove all three flange nuts and the flanges. A bearing puller may be needed to pull the flanges off.



Step 5

Notice that the rear output flange is different than the front output and input flanges.

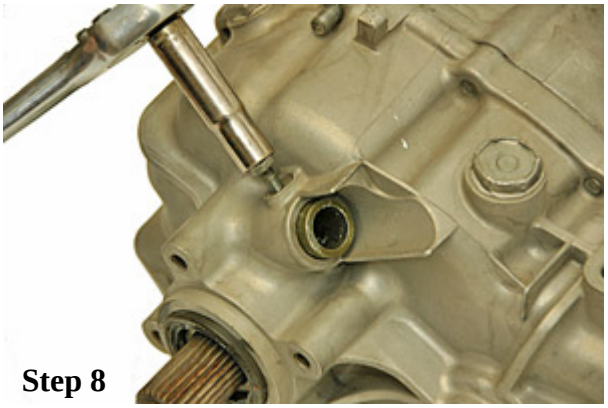
Step 6



On the bottom of the transfer case, remove the detent plug using a 6 mm allen wrench.

Step 7

Remove the detent spring using a small screwdriver or punch. Flip the case over and remove the detent ball.



Step 8

Remove the speedometer output bolt.

Step 9

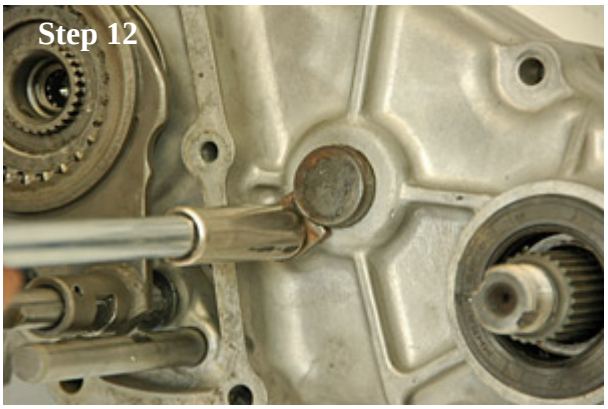
Remove the speedometer output.

Step 10

Remove the 7 bolts holding the front housing on. *Note* the position of each bolt and return each bolt to the same position when reassembling.

Step 11

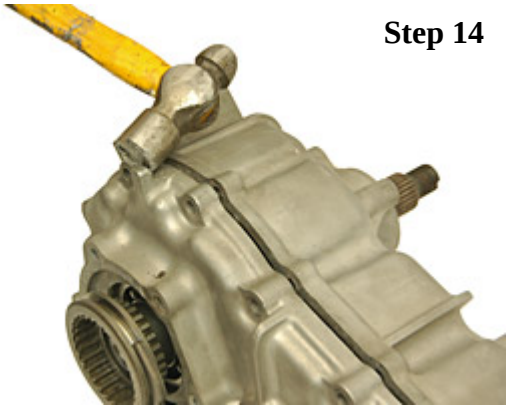
Remove the front housing.



Remove the lock tab and bolt that holds the counter shaft.

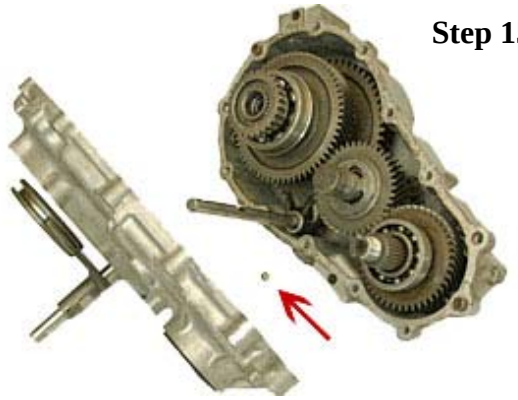
Step 13

Remove the eleven (11) bolts holding the center and rear housings together.



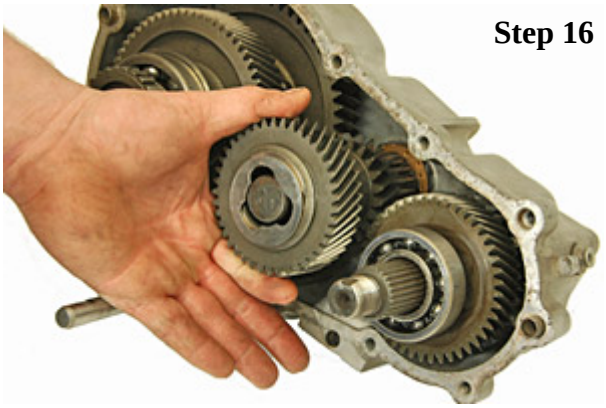
Step 14

Using a small hammer, tap the center and rear housing cases apart.



Step 15

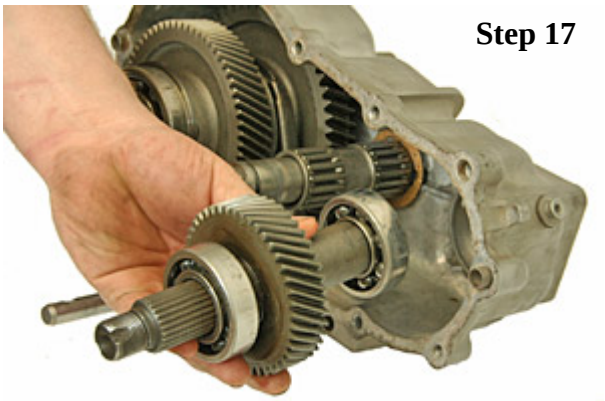
As the cases come apart, be sure to catch the steel ball. This ball will be reinstalled near the end. It may be necessary to tap lightly on the housing to dislodge the ball.



Step 16

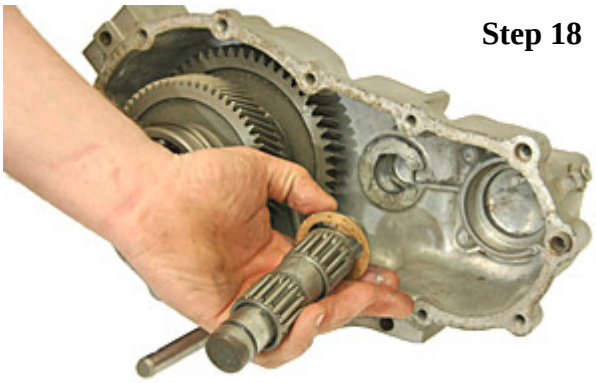
Remove the counter shaft gear and shim from the rear housing.

Step 17

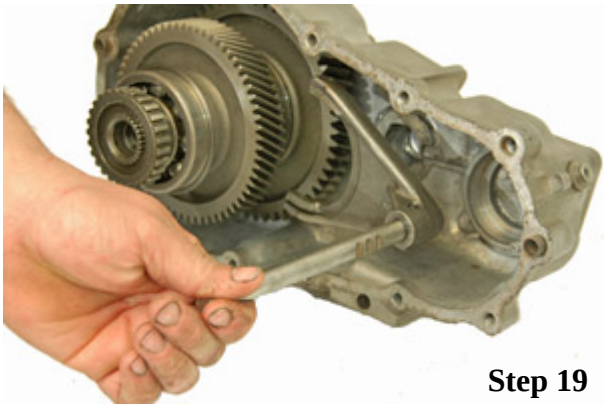


Remove the input gear and bearing assembly.

Step 18



Remove the counter shaft, bearings and shim.



Step 19

Remove the shift fork assembly as shown.

Step 20

Remove the output gear assembly from the rear housing. Hold the rear housing and press down on the housing to dislodge the output. It may be necessary to lift and drop the housing on a flat surface to get it apart.

Step 21

Remove the snap ring from the end of the output gear.

Step 22

Remove the gear as shown.

Step 23

Using a press, press the output gear through the bearing as shown.

Step 24

Remove the output bearing.

Step 25

Remove the spacer from the low output gear.

Step 26

Remove the high speed output gear.

Step 27

Remove the needle bearing assembly from the shaft.

Step 28

Remove the shift collar.

Step 29

Turn the gear assembly upside down and press the output shaft through the low speed gear.

Step 30

Remove the bearing keeper.

Step 31

Remove the bearing.

Step 32

Remove the drive gear.

Step 33

Remove the shim.

Step 34

Remove the low speed gear.

Step 35

Remove the cage bearing. Clean the cage bearings, shafts and housings.

Step 36

Reinstall the cage bearing on the output shaft.

Step 37

Install the new low speed gear onto the output shaft.

Step 38

Reinstall the spacer.

Step 39

Reinstall the drive gear.

Step 40

Using a piece of tubing, press or hammer the drive gear down onto the shaft.

Step 41

Reinstall the bearing onto the shaft.

Step 42

Press the bearing into place.

Step 43

Reinstall the collar.

Step 44

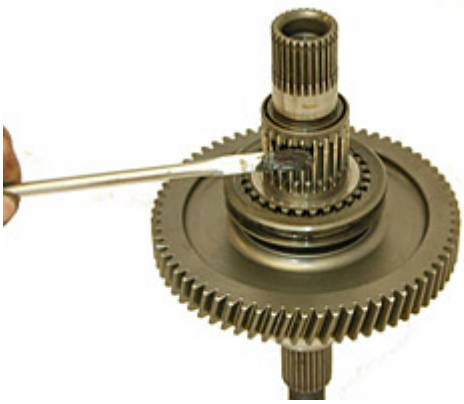
Press the collar into place.

Step 45

Flip over the output shaft to assemble the other side. Slide the shift collar into place.

Step 46

Reinstall the bearing onto the shaft.



Step 47

Apply grease to the bearing.

Step 48

Install the new high speed output gear.

Step 49

Reinstall the shim.

Step 50

Reinstall the bearing and press it into place.

Step 51

Install the gear as shown.

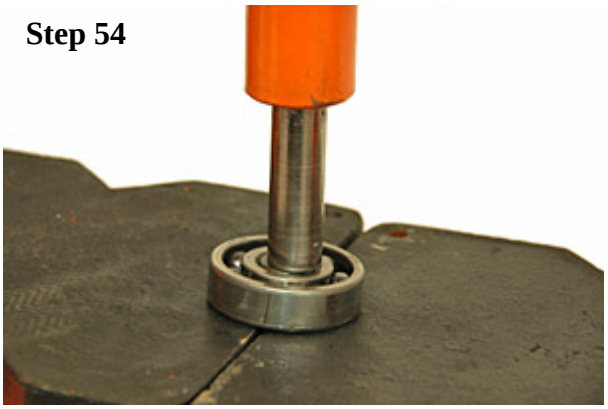
Step 52

Reinstall the snap ring.

Step 53

Using a press, remove the bearings from both ends of the input shaft.

Step 54



A socket that is smaller then the shaft size works well for pressing out the bearings. We suggest a 14mm, 3/8" drive socket.

Step 55

Once the first bearing is removed, flip the gear over to press off the second bearing.

Step 56

Strips of 1/4" plate steel work well for getting in between the input gear and the bearing on the drive flange end of the shaft.

Step 57

Discard the original input shaft. The new input shaft is shown above.

Step 58

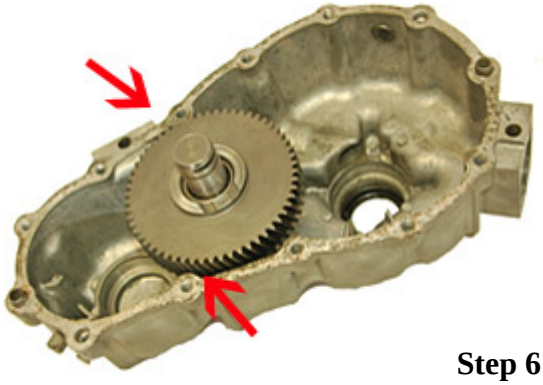
Reinstall the bearing on the end of the shaft as shown.

Step 59

Using a socket and press or hammer, press bearing into place.

Step 60

Install the bearing on the other side of the input shaft and press the bearing into place.



Step 61

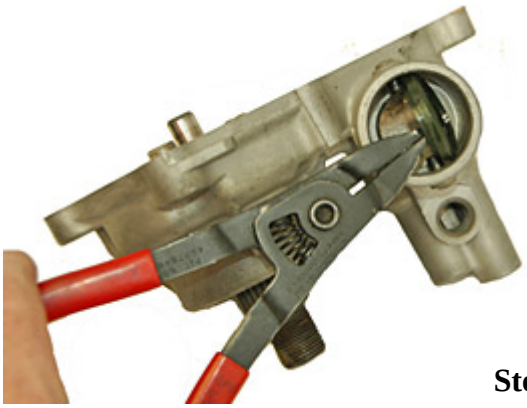
Temporarily install the new counter shaft, counter shaft gear and bearings. Look for the gear rubbing at the points above.

Step 62

Grind as needed with a Dremel® rotary tool to prevent gear interference with the case.

Step 63

Both sides of the case may need to be clearanced. Spin the gear in place to ensure that it des not grind on the case. Remove the counter shaft and gear when grinding is complete.



Step 64

Remove and inspect the shifter seat.

Step 65

Check to see that there are no cracks or missing material. If there is any sign of wear, replace the seat with a new one.

Step 66

Remove the old rear output seal from the rear housing.

Step 67

Install the new rear seal provided with the kit.

Step 68

Remove the old front input seal.

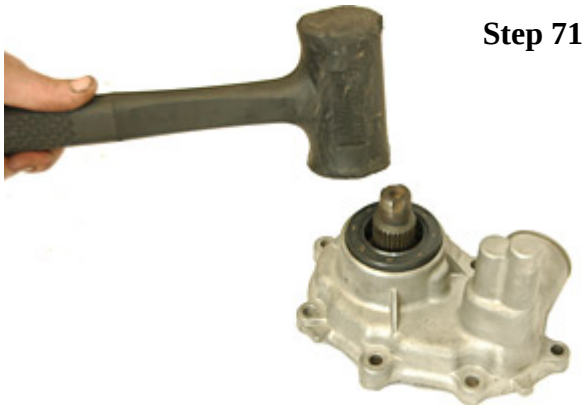
Step 69

Install the new front input seal provided with the kit.

Step 70

Remove the old front output seal.

Step 71

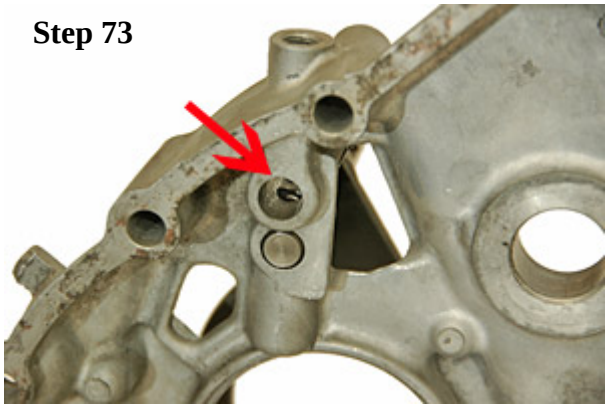


Install the new front output seal provided in the kit.

Step 72

Install the steel ball in the center housing as shown above. This is the ball that was removed in step #15.

Step 73



Adjust the shift rail until the ball drops into the slot and nearly out of view as shown.

Step 74

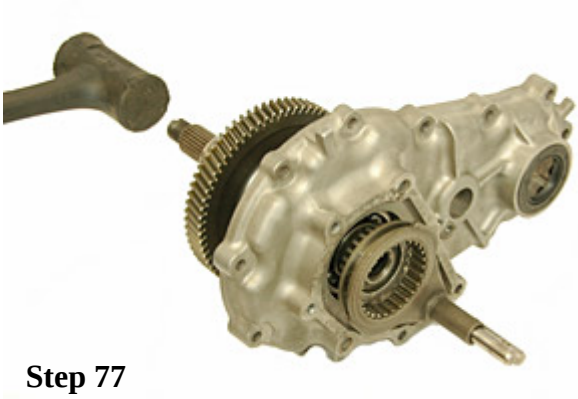
Slide the high/low shift rail onto the output gear assembly.

Step 75

Slide the gear assembly into the center housing.

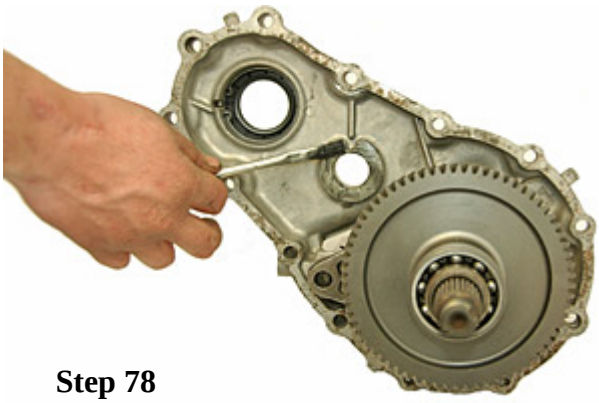
Step 76

Install the front output shift collar onto the shift fork



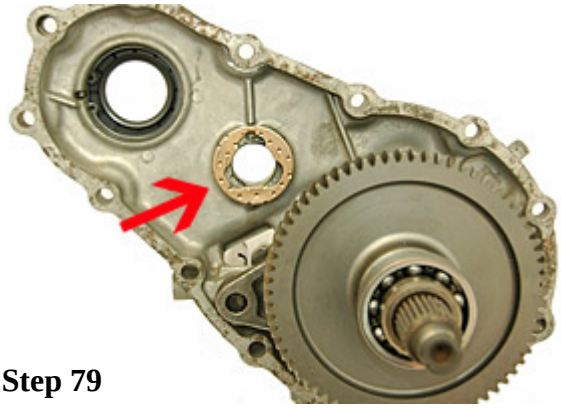
Step 77

Tap the output assembly into place using a rubber hammer.



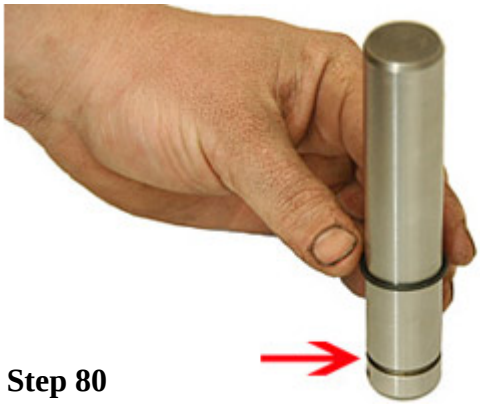
Step 78

Apply the grease to the counter shaft shim face on the center housing.



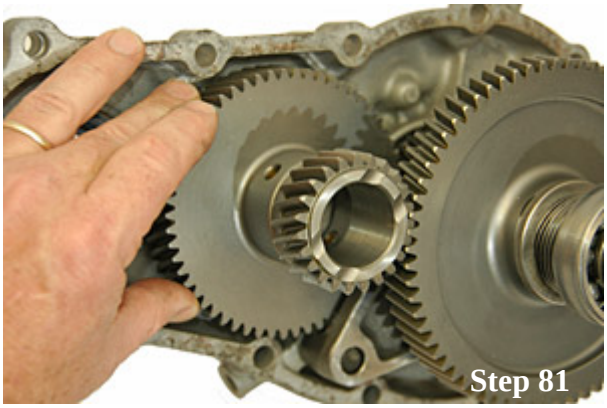
Step 79

Apply the new shim provided in the kit. *Note* the position of the tab in the shim. Make sure the tab fits into the notch in the housing.



Step 80

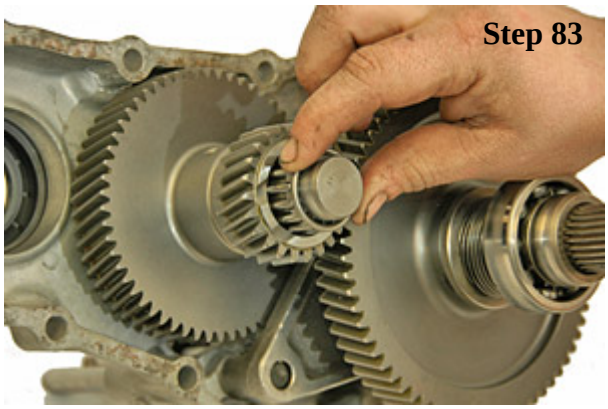
Replace the rubber seal on the counter shaft. The rubber seal should rest in the groove cut into the shaft.



Place the counter shaft gear onto the shim.

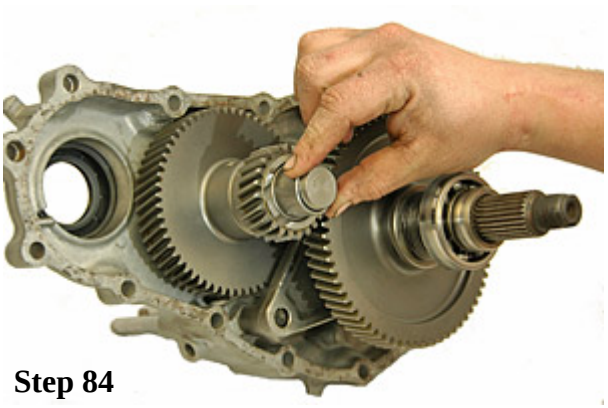
Step 82

Slide the counter shaft through the counter shaft gear and shim.



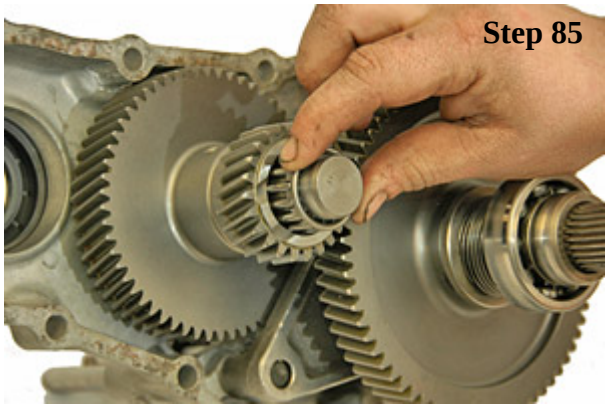
Step 83

Apply grease to the new counter shaft bearing provided and slide it into the center of the counter shaft gear.



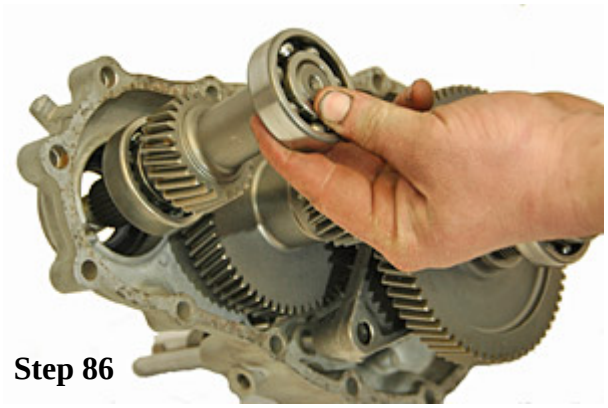
Step 84

Slide the bearing spacer into place as shown.



Step 85

Apply the grease to the second new counter shaft bearing provided and slide it into the center of the counter shaft gear.



Step 86

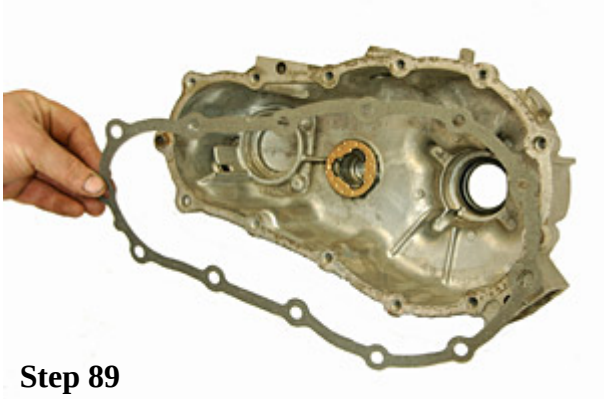
Slide the input gear assembly into place.

Step 87

Apply grease in the counter shaft hole in the rear housing.

Step 88

Place the new counter shaft shim over the hole in the rear housing. *Note* the position of the tab on the shim. Make sure the tab fits into the notch in the housing as shown.



Step 89

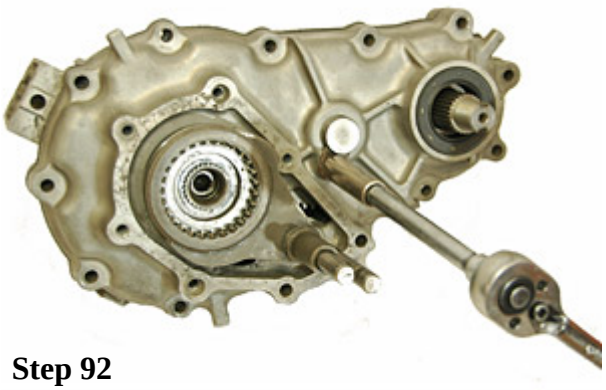
Apply Permatex® Ultra Grey® Silicon to both sides of the gasket and lay the gasket over the rear housing.

Step 90

Slide the rear housing on top of the center housing section. Make sure not to pinch or damage the gasket. The counter shaft must fit into the center of the shim.

Step 91

Tap the center and rear housings together with a rubber hammer.

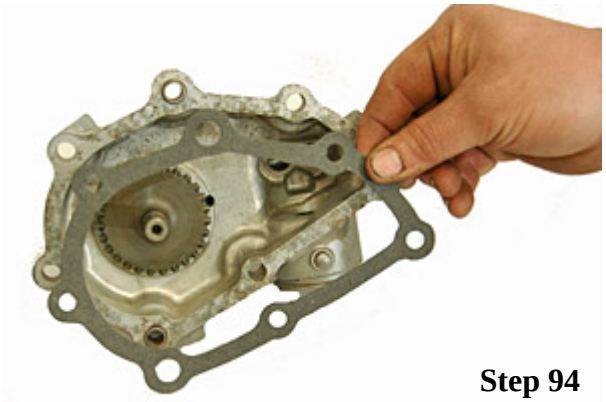


Step 92

Turn the counter shaft with pliers so that the lock tab slot lines up with the tab hole. Install the lock tab and bolt.

Step 93

Install the eleven (11) bolts that hold the center and rear sections together. **Note:** Be sure to install the bolts in the same places they were removed from. Not all of the bolts are the same size.

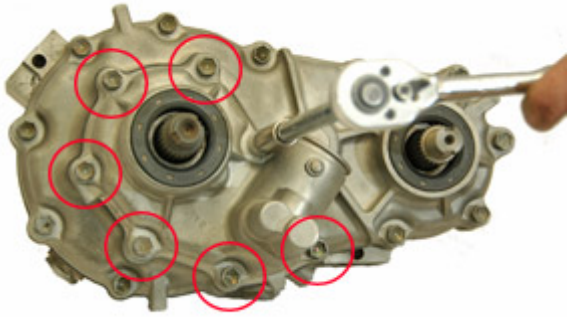


Step 94

Apply Permatex® Ultra Grey® Silicon to both sides of the front housing gasket. Place the gasket over the front housing.

Step 95

Install the front housing section onto the center housing.



Step 96

Install the 7 bolts holding the front housing. **Note:** Be sure to install the bolts in the same places as they were removed from. Not all of the bolts are the same size.

Step 97

Install the front **output** flange. Install the flange nut and re-stake the nut into position.

Step 98

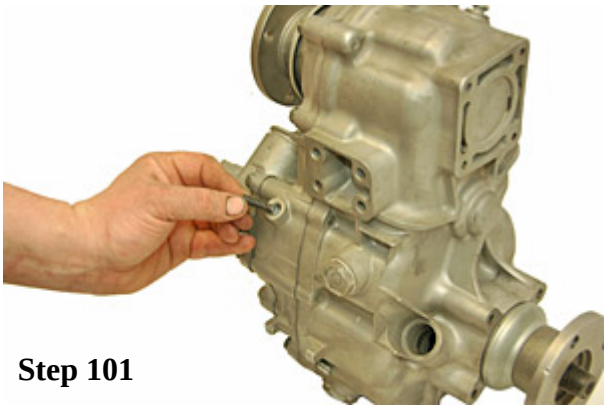
Install the **input** flange. Install the flange nut and re-stake the nut into position.

Step 99

Install the rear output flange. *Note* that the rear output flange is the tall flange and is different than the other two flanges. Install the flange nut and re-stake the nut into position.

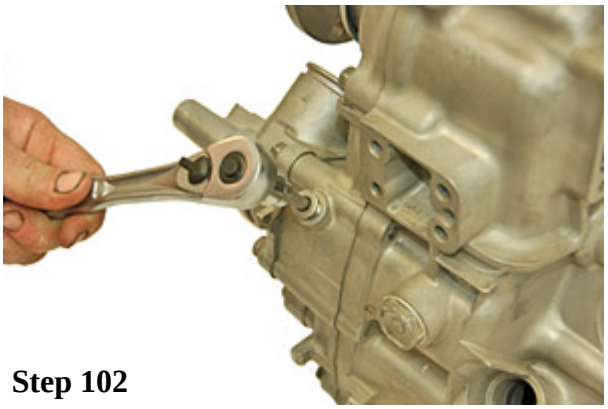
Step 100

Reinstall the steel ball in the bottom of the case.



Step 101

Install the spring into the bottom of the case.



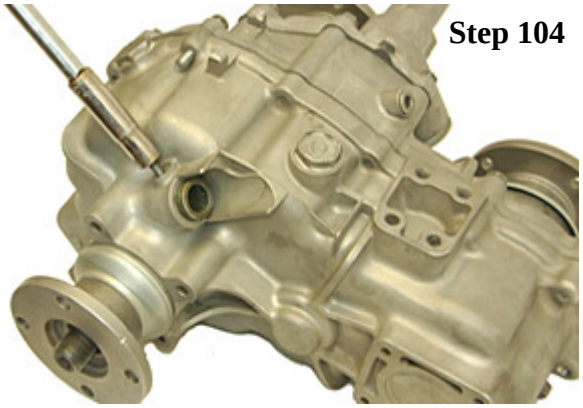
Step 102

Install the detent plug into the bottom of the case.

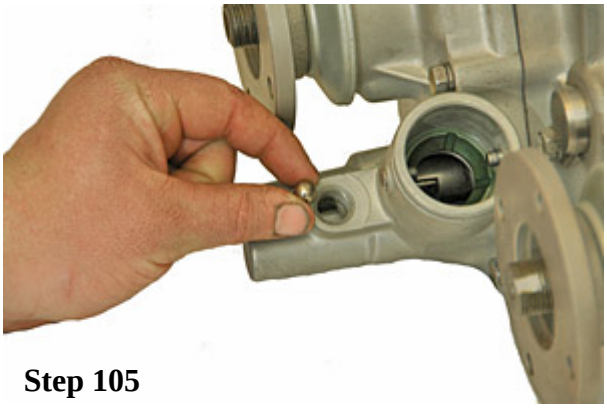
Step 103

Install the speedometer drive unit.

Step 104



Install the speedometer drive bolt.



Step 105

Install the 4wd indicator ball (removed in step #3) as shown.

Step 106

Install the 4wd indicator switch as shown.

Transfer Case Oil:

After installing the transfer case, remove the rear fill plug and fill with 80/90W GL5 gear oil. Once oil starts leaking out of the fill hole, the transfer case is full. The transfer case oil level should be checked after 10 miles of driving and topped off as necessary. Conventional or synthetic oil may be used.

Transfer Case Oil Service Recommendations:

After any major internal work to the transfer case, we recommend that the oil be changed after the first 1,000 miles or after the first trail ride (which ever comes first) to remove debris suspended in the oil. After the initial change, the oil should be changed once each year or every 10,000 miles whichever comes first. The fluid level in the case should also be checked each time the engine oil is changed. The fluid level should be checked after a roll-over as it is possible for fluid to leak out of the transfer case when the truck is on its side or is inverted.

These instructions are designed as a general installation guide. Installation of many Trail-Gear 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 559-252-4950 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 Trail-Gear Inc 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.