

# INSTALL INSTRUCTIONS

## TOP SHIFT CONVERSION KIT

(100119-1-K)

### KIT CONTENTS

**1 ct.**

T-Case Shift Fork



**1 ct.**

Right Hand Shift Rail



**1 ct.**

Left Hand Shift Rail



**1 ct.**

T-Case Shift Fork Tube



**2 ct.**

M5x22mm Steel Spring Pin



### RECOMMENDED TOOLS

Ratchet, 12mm, 14mm, and 30mm 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

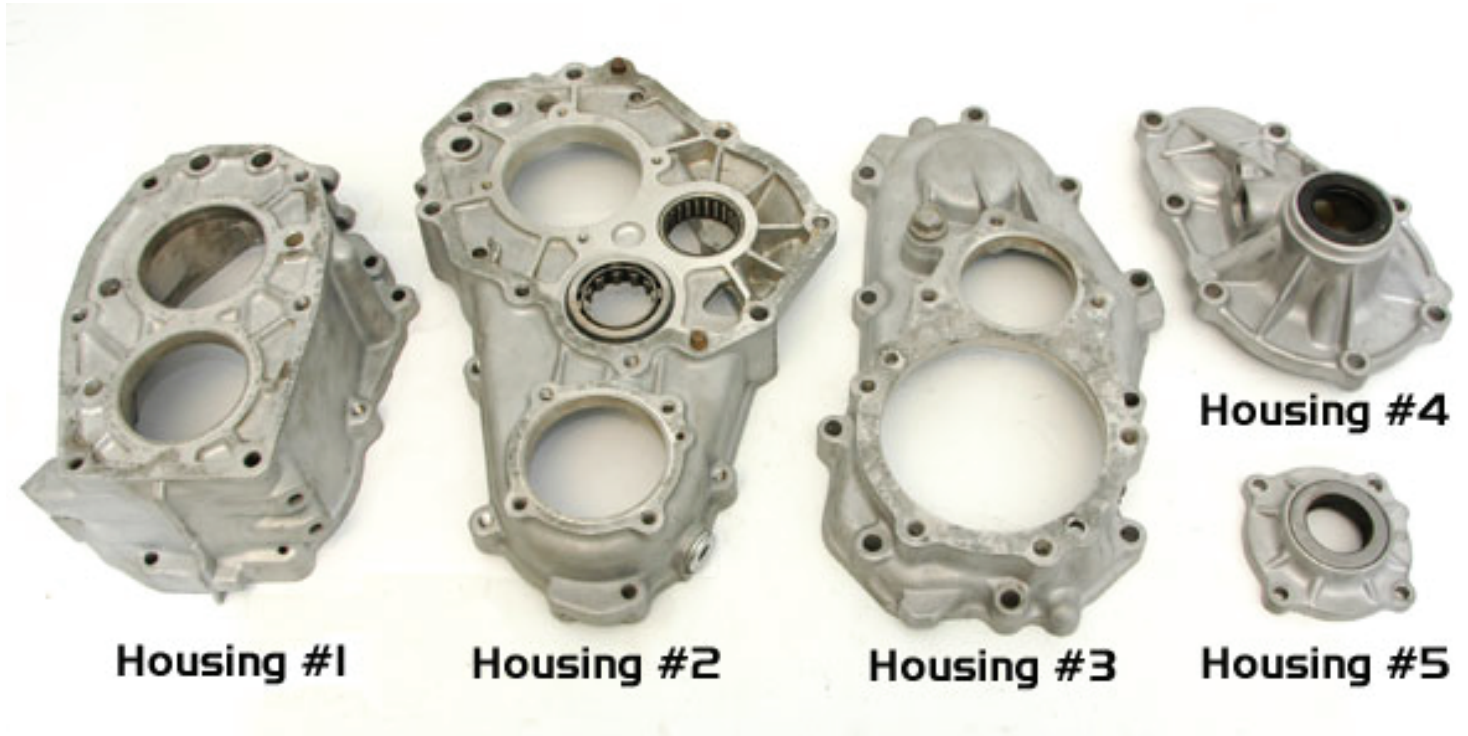
Axle Grease

Visit <http://www.trail-gear.com/ultra-grey/> to purchase Permatex Ultra Grey.

# INSTALL INSTRUCTIONS (CONT'D.)

## HOUSINGS

In these instructions we refer to different transfer case housing sections by number. The pictures below show each of the housings and its number.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 1

Remove 30mm rear output flange nut and slide the flange off the output splines.



## STEP 2

Remove speedometer sender bolt.



## STEP 3

Remove speedometer sender.



## STEP 4

Remove the 7 bolts holding housing #4. Pull off the housing and remove.



## STEP 5

Using snap ring pliers, remove outer snap ring from the 4wd idler shaft bearing.



## STEP 6

Remove the 10 bolts holding housing #3 and slide the housing out.



# INSTALL INSTRUCTIONS (CONT'D.)

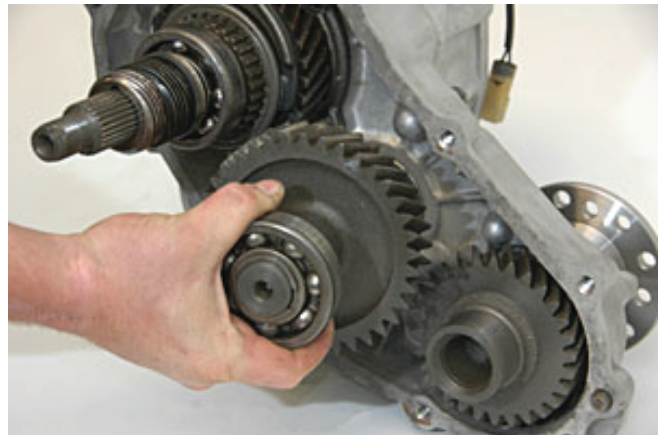
## STEP 7

Remove 2 oil galleys by gently pulling them straight out.



## STEP 8

Remove the front output idler gear.



## STEP 9

Remove speedometer drive gear.



## STEP 10

Remove oil pump gear and lock ball.



## STEP 11

Remove 63/28N bearing from rear main shaft.



## STEP 12

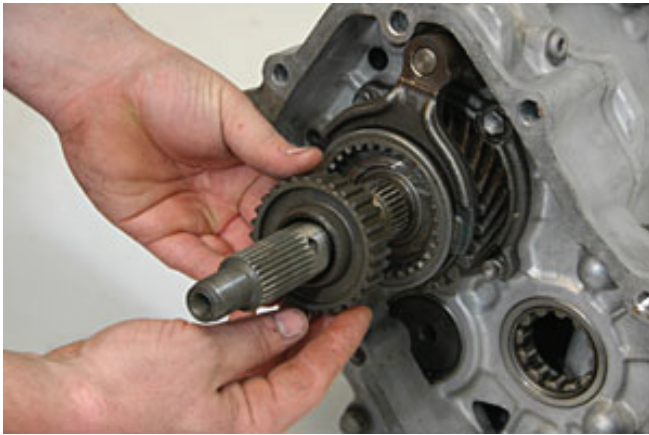
Shift into 2wd high. Remove 2wd/4wd shift fork roll pin with 3/16" pin punch.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 13

Remove 2wd/4wd shift hub.



## STEP 14

Remove 2wd/4wd shift collar & fork.



## STEP 15

Slide off front output gear from output shaft.



## STEP 16

Remove pair of cage bearings from output shaft.



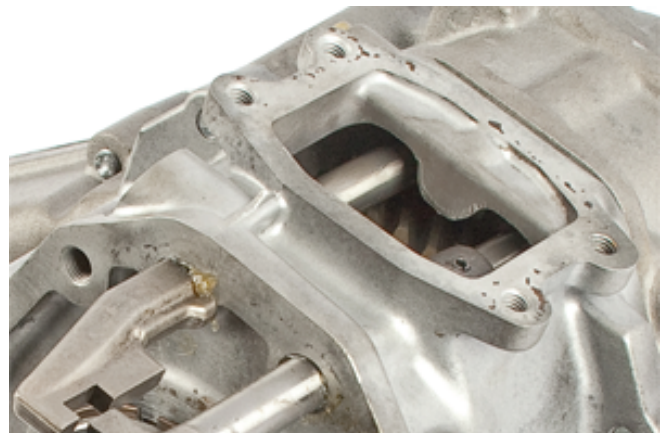
## STEP 17

Remove thrust washer & locking ball.



## STEP 18

Unbolt and remove remove shifter base or block off-plate depending on model.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 19

Remove 4wd light switch.



## STEP 20

Using an Allen wrench, remove detent plugs from both sides of case. Rotate case on it's side, and tap case lightly to allow spring and ball to fall out.



## STEP 21

Remove 2 bolts holding housing #1 on the passenger side of case.



## STEP 22

Remove last 2 remaining bolts holding housing #1 on the driver side of case.



## STEP 23

Remove 2WD/4WD shift rail.



## STEP 24

Remove snap ring from input shaft bearing.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 25

Remove snap ring from idler shaft bearing



## STEP 26

Using a pin punch, drive out roll pin from hi/lo shift rail.



## STEP 27

Remove hi/lo shift rail.



## STEP 28

Slide housing #1 forward and remove. Retrieve two shift fork roll pins from bottom of housing.



## STEP 29

Remove input gear.



## STEP 30

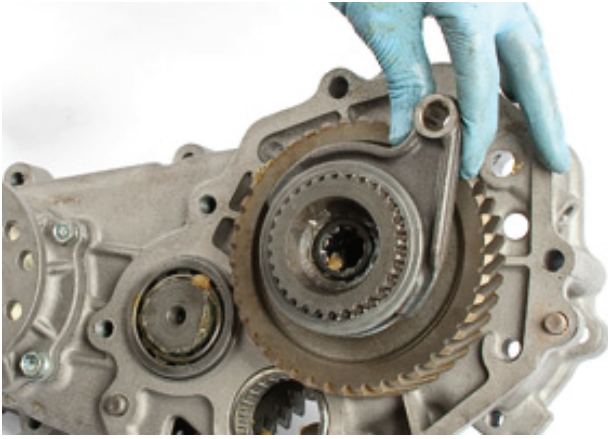
Remove counter shaft gear.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 31

Remove hi/lo shift fork and shift collar.



## STEP 32

Turn transfer case upside down and remove shift fork interlock pin from detent plug hole.



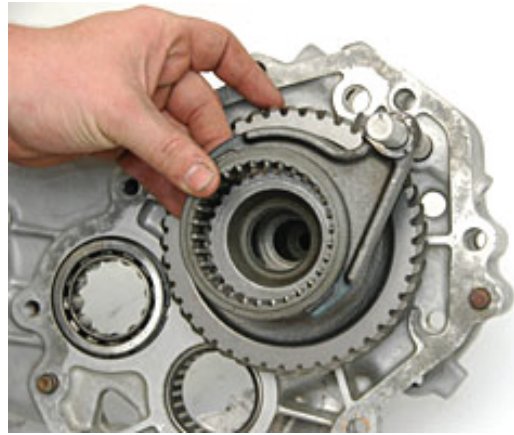
## STEP 33

Insert roll pin into low range shift fork. Shaft can go in two ways, install as shown above. Notice position of notches on shift rail during assembly.



## STEP 34

Place the clutch sleeve into the shift fork and slide fork in to place.



## STEP 35

Install counter shaft gear/bearing assembly as shown.



## STEP 36

Install input gear/bearing assembly in to main shaft.





# INSTALL INSTRUCTIONS (CONT'D.)

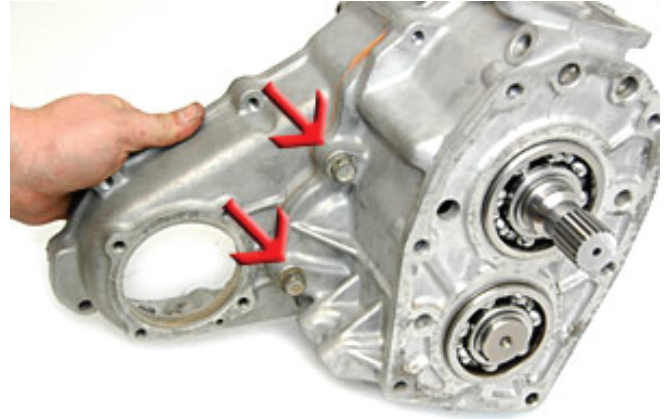
## STEP 37

Apply Ultra Gray (recommended) or place the new gasket on to housing section #2.



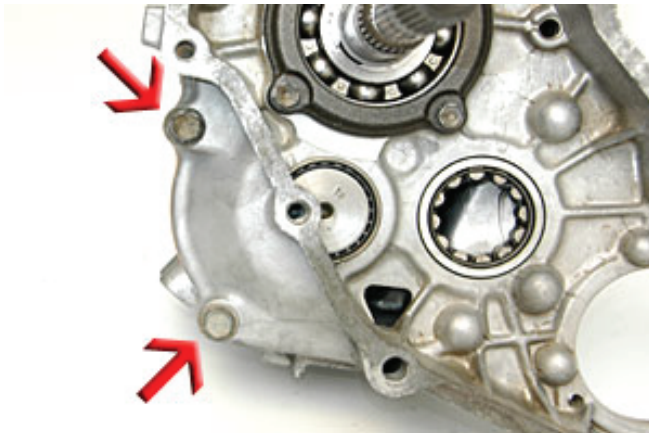
## STEP 38

Slide housing #1 in to place and install bolts as shown. Using a rubber hammer, apply gentle pressure to seat housing.



## STEP 39

Turn the transfer case around and install two more bolts on the other side.



## STEP 40

Install the outer snap ring on input gear bearing.



## STEP 41

Install the outer snap ring on countershaft bearing.



## STEP 42

Insert interlock pin in to the driver side detent hole. If installing a twin stick shifter skip this step. Turn the case on it's side to assist in getting pin to drop in to place.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 43

Make sure the interlock pin is all the way into position. Here the end of the pin can still be seen through the shift fork hole. Adjust position of shift fork until the pin can go all the way out of view.



## STEP 44

Install shift rail and shift block.



## STEP 45

Using a 3/16" pin punch to drive high low shift fork pin in to place.



## STEP 46

Apply grease to ball hole on main shaft.



## STEP 47

Place ball in to ball hole on main shaft.



## STEP 48

Align thrust washer with lock ball and slide in to place over the ball. Grease to face of thrush washer once in place.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 49

Grease to inside and outside of output shaft cage bearings. Slide bearings in to position on main shaft



## STEP 50

Install front output drive gear on to main shaft.



## STEP 51

Grease the outer face of front output drive gear.



## STEP 52

Slide clutch hub in to place on the main shaft.



## STEP 53

Place clutch sleeve in to the shift fork. Slide shift fork and clutch sleeve in to case.



## STEP 54

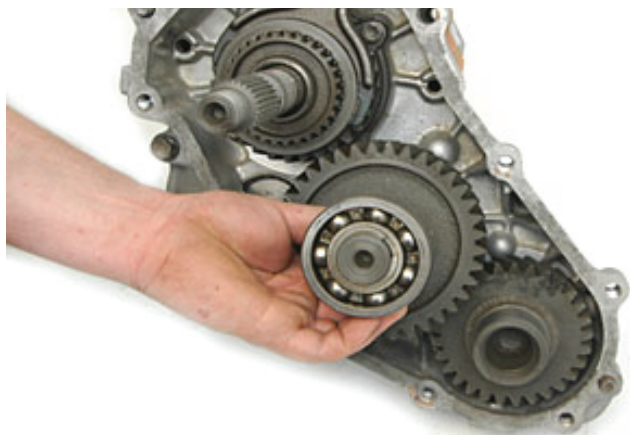
Using a 3/16" pin punch, drive shift fork roll pin down until it is flush with the fork.



# INSTALL INSTRUCTIONS (CONT'D.)

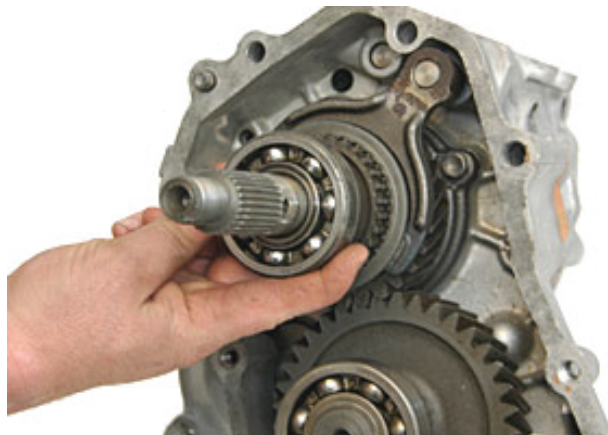
## STEP 55

Reinstall front drive idler gear.



## STEP 56

Install output shaft rear support bearing.



## STEP 57 (OPTIONAL)

Using a screwdriver, remove and replace oil pump seal inside the oil pump drive gear.



## STEP 58

Slide oil pump drive gear onto main shaft until it seats on bearing.



## STEP 59

Apply grease to ball hole. Place ball into hole.



## STEP 60

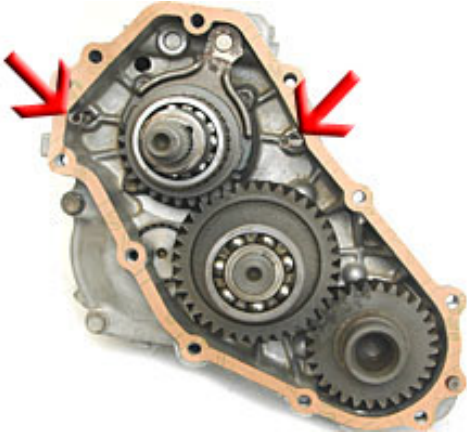
Align notch in speedometer drive gear with ball on main shaft. Slide speedometer drive gear onto main shaft.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 61

Apply Ultra Gray (recommended) or place new gasket on to the back of housing #2. Reinstall oil delivery tubes at arrows.



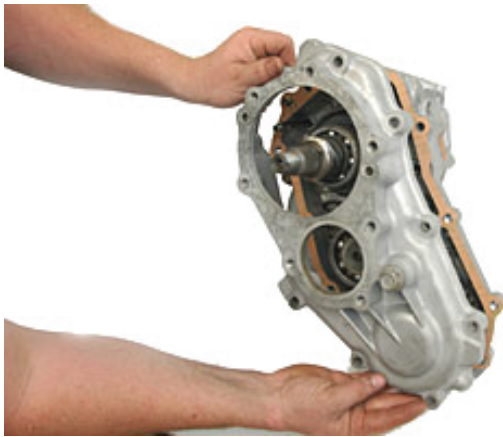
## STEP 62

Apply grease to cage bearing in back of housing #3.



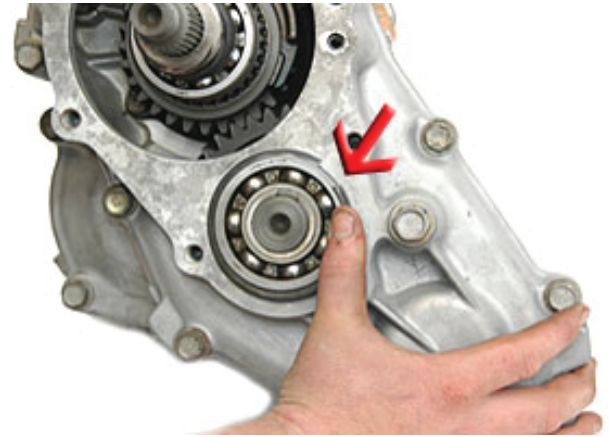
## STEP 63

Install housing #3 on to the back of housing #2. Align oil transfer tubes with slots in the back of housing #3. Install 10 bolts into cover #3. Torque to 30 ft/lbs.



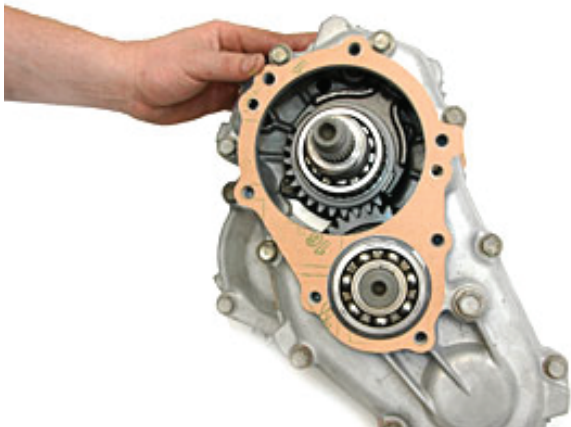
## STEP 64

Install outer snap ring on idler bearing.



## STEP 65

Apply Ultra Gray (recommended) or place new paper gasket on to back of housing #3.



## STEP 66

Remove old output seal on housing #4. Install new seal and apply grease to inner lip.



# INSTALL INSTRUCTIONS (CONT'D.)

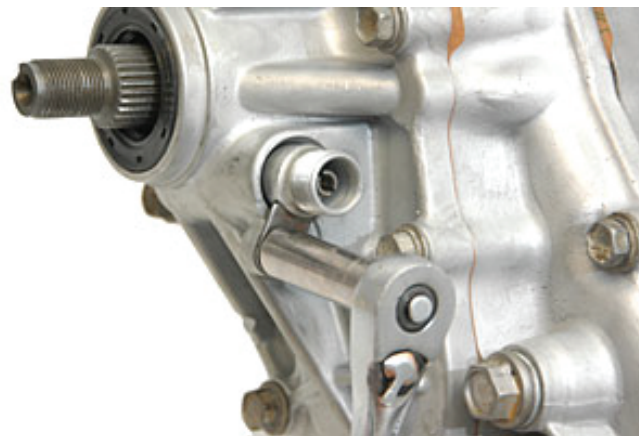
## STEP 67

Install housing #4 on to the back of housing #3.  
Install 7 bolts into housing #4. Torque to 30 ft/lbs.



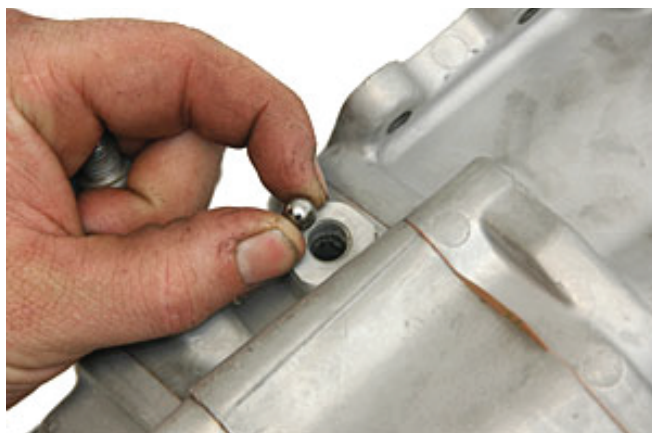
## STEP 68

Slide speedometer sender into housing #4. Install speedometer lock tab and bolt, torque to 10 ft/lbs.



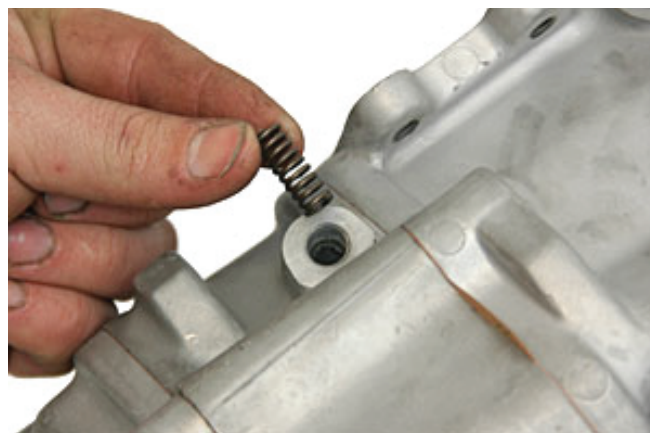
## STEP 69

Rotate case so it is on it's side. drop in one detent ball.



## STEP 70

Next drop in one detent spring.



## STEP 71

Apply a small amount of silicon to the threads of the detent plug and install. Flip case over on to the other side and install the ball, spring and plug as above.



## STEP 72

Install 4wd shift light switch into housing #1.



# INSTALL INSTRUCTIONS (CONT'D.)

## STEP 73

Apply ultra gray Silicon to the inside splines of both flanges. Slide flanges in to place on t-case.



## STEP 74

Install the main shaft nuts and washers. Tighten each nut to 90 ft/lbs. Using punch, stake nuts into the main shaft 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.