



# GM 4L60 & E

## 2<sup>ND</sup> GEAR "SUPER HOLD" SERVO

H I G H P E R F O R M A N C E T R A N S M I S S I O N P A R T S

### 77911-03K

2nd Gear "Super Hold"  
Servo Assembly

Also available:

### 77911-03SK

Replacement Seal Kit

### 77767K

"Super Hold" 4th Gear Servo



## INSTALLATION INSTRUCTIONS

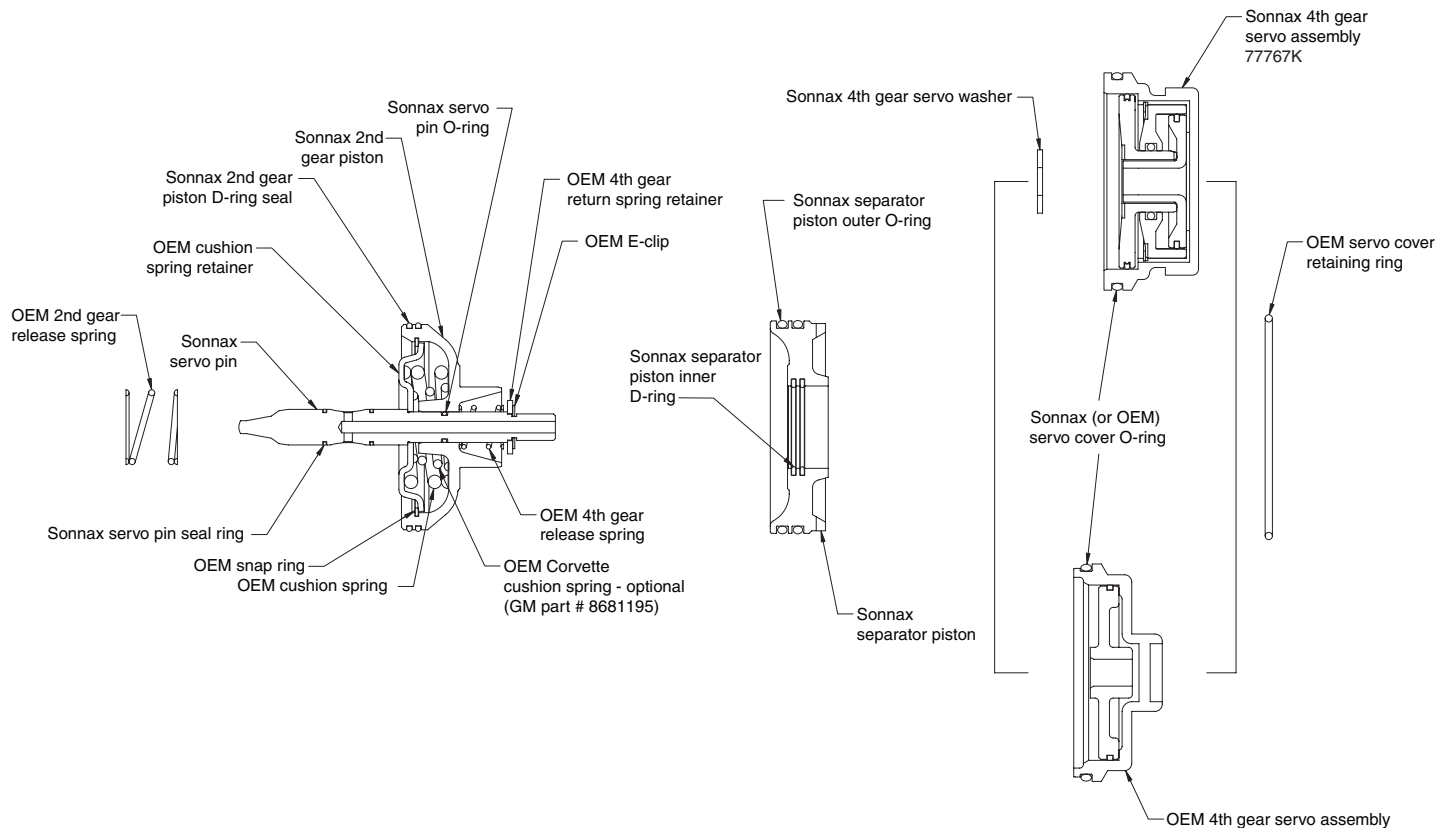


Figure 1

## TOOLS REQUIRED:

- Dial indicator or GM servo pin length checking tool # J33037
- Small flat-blade screwdriver
- Pry bar
- Assembly lube

## NOTES:

- It is important to maintain a spherical tip radius when grinding the pin. The inner hole of a 3/8" flat washer cut in half makes a good gauge for this (see Figure 3).
- To prevent case damage, do NOT reuse servo-to-case retaining ring with the flat sides (MY 2004 up to mid-April 2004, see GM Bulletin # 04-07-30-025A).
- If servo travel is insufficient, the band will not be able to fully release. Doublecheck by looking up into the case near the manual shaft while turning the output shaft. The band drum should rotate inside the band.
- To cushion the 1-2 shift and reduce the 3-2 downshift clunk, install additional cushion spring (GM part # 8681195).

## INSTRUCTIONS:

- 1) Remove the original servo assembly.
- 2) Disassemble 2nd gear servo piston, pin and cushion spring(s). Discard the OEM pin, second piston and separator piston.
- 3) Assemble the Sonnax 2nd gear servo, separator piston and pin as shown in Figure 1. Do not install any seals at this time. Make sure the 2nd gear release spring is on the pin.
- 4) Set pin travel using one of the two methods outlined below.

### METHOD 1, SET PIN TRAVEL (WITH DIAL INDICATOR):

- a. Install the 2nd gear servo assembly, 4th gear servo assembly and retaining ring into case.
- b. Set up the dial indicator as shown in Figure 2.
- c. Depress the servo cover and measure the distance the cover travels.
- d. Grind the pin tip as necessary to achieve .075-.125" of servo travel.

### METHOD 2, SET PIN TRAVEL (USING GM TOOL # J33037):

- a. When using GM tool # J33037, follow the instructions included with the tool.
- b. Grind pin tip as necessary to achieve .075-.125" of servo travel.



Figure 2

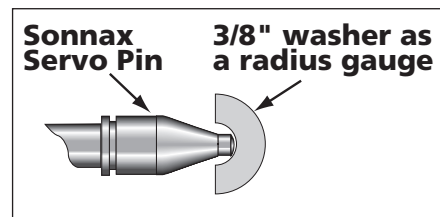


Figure 3

**WARNING:** The Sonnax 4th Gear Super Hold Servo **77767K** will reduce pin travel by .050" (see Chart 1). Therefore it is necessary to compensate when using GM tool # J33037. For example, change pins or grind pin tip to set pin length so gauge line is near the outside edge (short pin) side of the window on tool J-33037 (as if the pin was the shortest allowable). When assembled, the resulting pin travel will be .075". From this point measure the length of the pin with calipers and remove up to .050" additional material to set pin travel in the desired range of .075-.125".

<b>WHEN USING OE PIN CHECKING TOOL J-33037</b>		
(The tool gauge slot window represents about .050" in pin travel)	OEM 4th gear servo	Sonnax "Super Hold" 4th gear servo 77767K
White line at short pin side of window	.125" travel	.075" travel
White line at center of window	.100" travel	.050" travel
White line at long pin side of window	.075" travel	.025" travel

Chart 1

## FINAL ASSEMBLY

- 1) Remove and disassemble servo assembly.
- 2) Install the small o-ring onto the new pin. Lubricate the o-ring with Transjel™. Insert the servo pin into the 2nd gear servo assembly, taking care not to shear the o-ring. Install the 4th gear release spring, spring retainer and E-clip.
- 3) Install the 2 small Teflon® seals onto the servo pin.
- 4) Install the 2 large D-ring seals onto the 2nd gear servo piston.
- 5) Install the 2 large o-rings on the outside of separator piston and install smaller D-ring seals into the inside of the separator piston.
- 6) Lubricate the inner D-ring seals and install the separator piston onto the 2nd gear servo assembly.
- 7) Place 2nd gear release spring in the servo bore. Lubricate outer D-ring and o-ring seals. Install the 2nd gear servo/separator piston assembly into the case.
- 8) Install the servo cover o-ring onto the 4th servo assembly. Lubricate the cover o-ring.
- 9) Install the 4th gear servo assembly into the case.
- 10) Install the servo retaining ring (see notes on page 2).
- 11) Verify retaining ring is fully seated in case.

### AIR TEST SERVO:

1) When air checking during overhaul (and pump removed), check for leaks of 3rd clutch oil at the OE 3rd accumulator check ball capsule (No. 2 in Figure 4).

2) No. 1 in Figure 4 is orifice to spray lube oil onto 2-4 band. Some leakage here is normal.

**WARNING:** If using Sonnax "Super Hold" 4th Gear Servo Assembly, do not air test 4th apply unless band and drum are in place, otherwise 4th apply seals may come out of position.



Figure 4

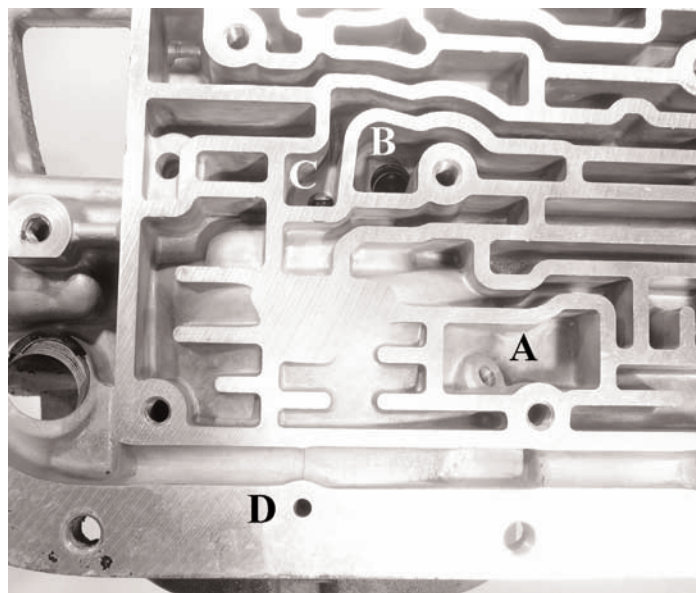


Figure 5 (4L60-E)

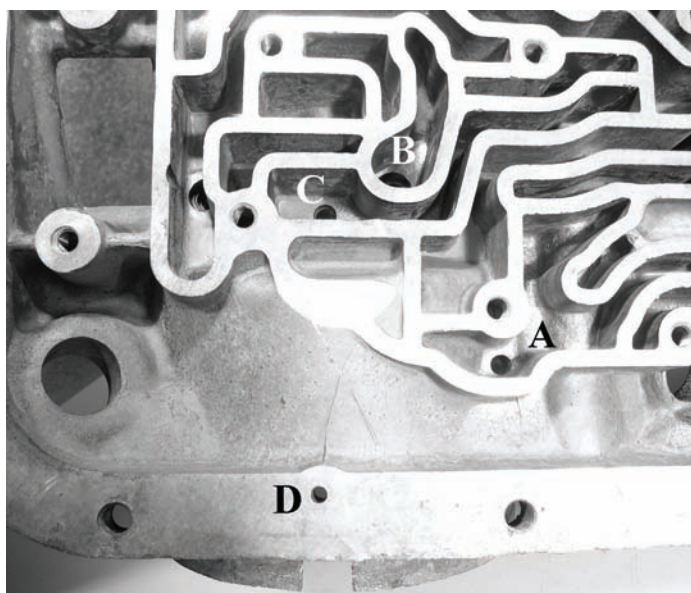


Figure 6 (700-R4)

A= 2nd Feed

B= 3rd Accumulator

C= 4th Feed

D= Exhaust