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 PAGE 1 OF 5 Page Rev. Date: 06-12-20  
 P/N: 50-0402

## GM 4L60E AUTOMATIC TO JEEP NEW PROCESS 231 T/C (23-SPLINES)

### KIT CONSISTS OF:

No.	Qty	Part No.	Description
1.	1	51-6800	ADAPTER CASTING (Ref: 711168)
2.	1	52-9101	700R-4 SHAFT (23-Splines)
3.	1	716071	RELUCTOR SENSOR
4.	1	716072	CLAMP ON RELUCTOR (700R SHAFT)(One piece reluctor, bolt torque 10 ft-lbs.)
5.	1	716073B	TRANSMISSION BUSHING FOR SENSOR
6.	1	716073N	JAM NUT FOR TRANS BUSHING
7.	1	716073W	WEDGE FOR JAM NUT
8.	1	716082	700R PLASTIC WASHER
9.	1	716511	O-RING
10.	1	716517	GASKET, NP208 T/C
11.	1	716729	SEAL (NAT. #456057) (ADAPTER)
12.	4	720046	10mm-1.5TH X 40mm S.H.C.S.
13.	6	723701	NUT 3/8"-16 PLATED
14.	6	723704	3/8" LOCKWASHERS
15.	6	723711	STUD BOLT 3/8"-16 x 2" LG
16.	2	723730	S.H.C.S. 3/8"-16 x 1-1/4" LG.
17.	1	715599B	ALLEN WRENCH

### OPTIONAL ITEMS:

Part No.	Description
716008	Crossmember mount

### GM 4L60 4 SPEED AUTOMATIC

When installing the new transfer case adapter, make sure that the output shaft doesn't bottom out. We have found on occasion that a transmission output shaft may be slightly longer than we have allowed for and when coupling into the transfer case. The adapter housing must be assembled between the transmission and transfer case without interference. **DO NOT FORCE THE NEW ADAPTER HOUSINGS TOGETHER.** If assistance is needed, please feel free to call us on our toll free number, (800) 350-2223.

When assembling the adapter housing to the transmission case, we have provided you with a new square type "O"-ring seal to prevent fluid leakage. This seal is a stock GM item that is used on all 4L60 installations.

All installations will require the use of a transmission cooler. The cooler can be either installed in the radiator or a remote location is acceptable. The transmission shift control can either be a Hurst floor mounted type shifter or sometimes the existing column shift can be modified on certain applications.

The bolts that hold the new adapter to the main case will require a metric thread. We have included 4 new bolts for this use.

The 4L60 works with a reluctor ring. The reluctor ring and sensor have been provided with this kit. When installing the reluctor ring on the shaft, there is a shoulder on the shaft that seats the ring in the proper location. This ring is a light press fit.

**SPECIAL NOTE:** The components packaged in this kit have been assembled and machined for specific type of conversions. Modifications to any of the components will void any possible warranty or return privileges. If you do not fully understand modifications or changes that will be required to complete your conversion, we strongly recommend that you contact our sales department for more information. This instruction sheet is only to be used for the assembly of Advance Adapter components. We recommend that a service manual pertaining to your vehicle be obtained for specific torque values, wiring diagrams and other related equipment. These manuals are normally available at automotive dealerships and parts stores.

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**NOTE: The sensor we use is GM# 15547452. If your computer harness uses a different type of plug, you may need to modify your harness. The male plug to match for 716071 is GM# 12085498.**

### **Tools & Equipment Needed:**

- \* Drill motor
- \* 1/4", 1/2", 3/4" and 7/8" drills with 3/8" or 1/2" shanks to fit drill motor
- \* RTV Blue silicone
- \* Loctite thread retainer

### **INSTRUCTIONS:**

This kit is designed to fit a 4L60E transmission. This transmission requires this reluctor and sensor to regulate the transmission shift points. Most of the adapters kits we offer for the 4L60E transmission come with a new output shaft which is a 700R shaft. The reluctor in this kit clamps over the old governor gear portion of the 700R shaft.

The transmission case must be modified to install this kit. The sensor access hole can be drilled on either side of the transmission. Before drilling, make sure you have clearance for the sensor in the location you have chosen. Make sure you have accounted for clearance on the transfer case shifter linkage, crossmember, etc. Before drilling, you need to cover the two oiling hole accessible in the rear of this transmission. Cover or plug the two hole while drilling the case to prevent aluminum chips from entering the transmission oiling system. After the drilling is complete, these holes must be uncovered for proper transmission operation.

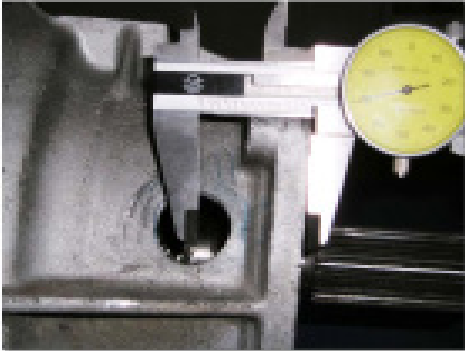
The hole for the sensor should be located 1.270" from the back side of the transmission. The 7/8" diameter hole can be above or below the transmission web (shown right). The bushing diameter should

be considered to make sure it will clear this transmission web. Once this hole location is located, drill a pilot hole with the 1/4" drill and work your way up until the 7/8" hole is obtained.



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1. After sensor hole has been drilled



2. The clamp on reluctor gets installed onto the 700R output shaft and locked into position. If a 4L60E shaft is to be used, a different set collar is needed.



3. Reluctor ring installed



4. Verify that the teeth of the reluctor can be seen through the new hole



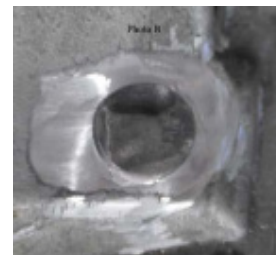
5. Tighten the 3 set screws of reluctor ring to lock it to the main output shaft. The allen wrench may need to be shortened to fit the set screws around the transmission case.



6. Test fit the bushing into the transmission housing. Make sure the bushing fits snug to the outside of the transmission. Note: You will have a small gap on the top and bottom side of this bushing, between it and the transmission.



7. Remove the bushing after test fitting and then install the new reluctor sensor.



Due to the different variations in 4L60E transmission case thicknesses you maybe be required to modify part number 716073B (see photo A shaded area) or your transmission case to obtain .010" - .012" gap (see photo B).

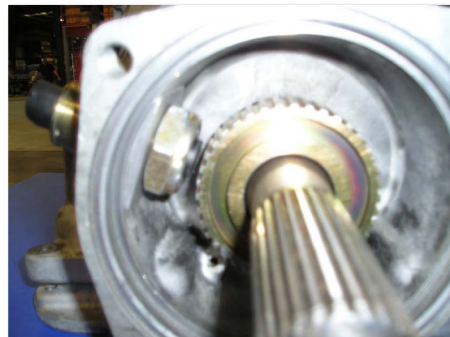
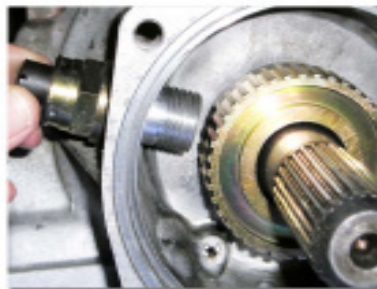


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8. You will now need to install the bushing back into the transmission housing. The bushing will require RTV Blue silicone applied to seal the bushing to the transmission. Use just enough to form a bead around the outside of the bushing.

9. With the sensor and bushing set into the transmission, slip the wedge over the bushing so that the radius portion fits the inside contour of the case. Next, put Loctite thread retainer on the nut and then install the nut onto the bushing. The bushing will need to be slightly pulled out of the transmission to fit on the nut. Be careful not to move the bushing too much because you want to keep a good seal with the silicone.



10. Tighten the nut to retain the bushing and sensor onto the transmission ( the bushing should be snug). Inspect the gap between the sensor and the reluctor ring. The gap should measure between .010"-.012".

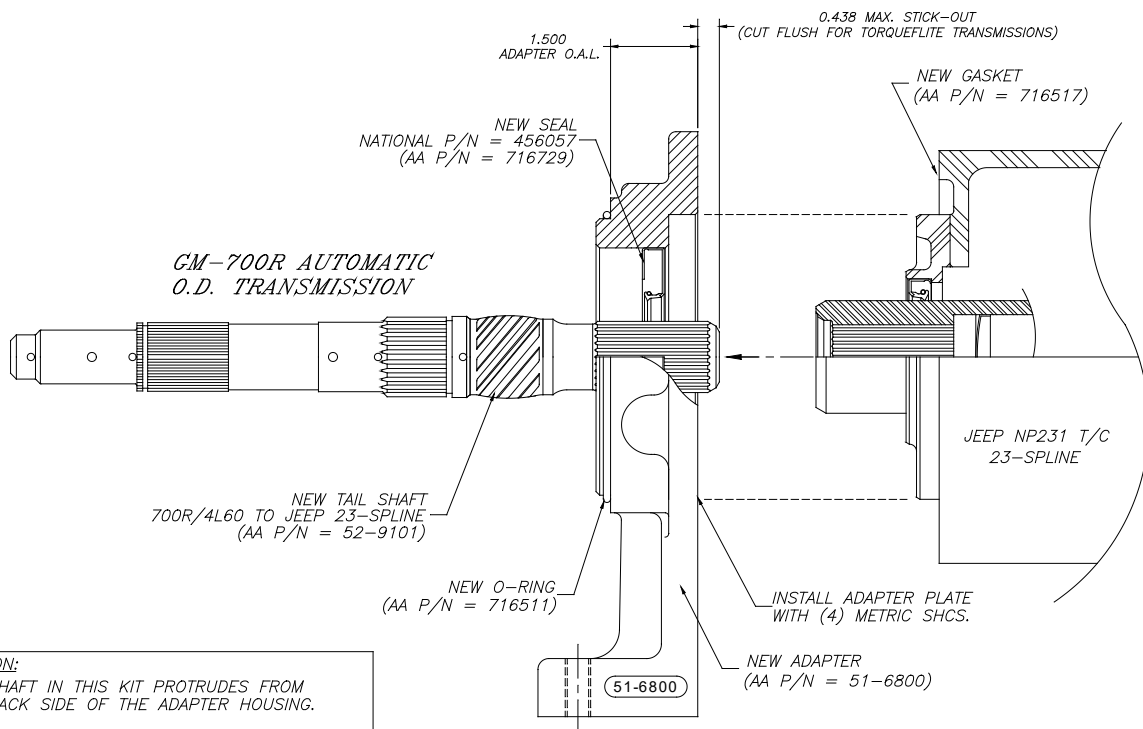
### ASSEMBLY PROCEDURES:

1. The output shaft provided by Advance Adapters should be installed by a an experienced transmission tech.
2. Trial fit the adapter on the transmission. Check to see that the casting seats flush to the transmission case.
3. Trial fit the transfer case to the adapter and transmission. Check for spline engagement, and shaft depth into the input coupler of the transfer case.
4. If the transfer case does not mate flush against the casting, **DO NOT DRAW IT TOGETHER WITH THE FASTENERS. SEVERE DAMAGE WILL OCCUR.** This is **not** normally found when replacing an AX15 manual transmission. If interference is detected, the output shaft must be shortened to a flush stickout with reference to the casting. **Automatic Torqueflite 999 applications, where the factory output shaft does not protrude beyond the stock adapter, will need shaft modifications.** Cutting the shaft will require a cut off disc to cut the outer edges and a hacksaw to cut through the center. If you are unsure about cutting, please call Advance Adapters toll free at 1-800 350-2223.

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5. Press the seal into the casting with the open side toward the transmission.
6. Install the rubber o-ring on the transmission side of the adapter. A thin bead of silicone should be applied as a sealant.
7. The four 10mm X 40mm Socket Head Cap Screws are then used to secure the casting to the transmission.
8. Two rotations are provided on the casting. Choose the rotation that best suits your application.
9. Studs and nuts are provided for securing the transfer case.
10. Two of the positions on the rotation will require removal of two studs from the transfer case and substitution by the two 3/8"-16 x 1-1/4" Socket Head Cap Screws. This is due to lack of wrench clearance around the casting.
11. Use silicone sealant on both sides of the transfer case gasket. Use Loctite on all bolts.



**CAUTION:**

THE SHAFT IN THIS KIT PROTRUDES FROM THE BACK SIDE OF THE ADAPTER HOUSING.

IF YOUR ORIGINAL JEEP TRANSMISSION SHAFT WAS FLUSH AT THE TRANSMISSION AND TRANSFER CASE MATING SURFACES, YOU WILL NEED TO TRIM THE NEW TAILSHAFT TO THE SAME PROFILE AS THE TRANSMISSION YOU ARE REPLACING.

IF YOU FAIL TO MAKE THE NECESSARY SHAFT ADJUSTMENT A PRE-LOADED BEARING CONDITION WILL EXIST CAUSING SEVERE DAMAGE TO BOTH THE TRANSMISSION AND TRANSFER CASE.

**NOTES:**

1. Before assembling the new transmission shaft into your 4L60E, you must verify the spline size of the new shaft and the input gear of the new process transfer case.
2. Be sure that the adapter shaft and T/C input gear do not bottom out prior to the adapter meeting flush with the transmission. Some models may require the output shaft to be shortened.
3. The adapter has provisions for a new seal NAT #456057, the outside diameter is 3.75" and the inside diameter is 1.937". The seal must be installed with the open side towards the transmission.

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