

# ADVANCE ADAPTERS INC.

P.O. Box 247, 4320 Aerotech Center Way  
Paso Robles, CA 93447

Telephone: (800) 350-2223 Fax: (805) 238-4201

## P/N: 50-6805

New Item: (10/04)

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Page Rev. Date: 08-16-10

## GM 4WD TH350 AUTO TO JEEP NP231 TRANSFER CASE (27-SPLINES) 1995 & UP

### KIT CONSISTS OF:

No.	Qty	Part No.	Description
1.	1	51-6800	ADAPTER CASTING (Ref: 711168)
2.	1	716203	1995 & UP 27 SPLINE INPUT
3.	1	*716325A	NEEDLEBEARING
4.	1	716511	O-RING
5.	1	716517	GASKET, NP208 T/C
6.	1	716729	SEAL (NAT. #456057) (ADAPTER)
7.	1	716760	NP231 INPUT SEAL
8.	3	723704	3/8" LOCKWASHERS
9.	1	723721	3/8"-16 x 1" H.H.C.S.
10.	4	723729	S.H.C.S. 3/8"-16 x 1-3/4" LG.
11.	2	723730	S.H.C.S. 3/8-16 x 1-1/4" LG.
12.	1	JP001	JEEP INSTRUCTION MANUAL

\* INSTALLED AT ADVANCE ADAPTERS

### OPTIONAL ITEMS:

Part No.	Description
716008	Crossmember mount

**NOTE:** This kit will not work with a Tera low 4:1 NP231 kit.

### GM TH350 AUTOMATIC

The General Motors TH350 has a case length of 21-1/2", and is available in two different engine-to-transmission bolt patterns. The case is available with a Chevy bolt pattern that has the top two holes 8-1/4" apart or in a Buick bolt pattern that has the top two holes 7" apart. The rear side of the transmission case should have a square bolt pattern that uses 4 bolts. There are several various lengths of output shafts that the TH350 transmissions have been furnished with. This kit is designed around the 4WD version having an approximate output shaft stickout of 1". The rear transmission support is located in the main case just forward of the tailhousing connection. This can be used for supporting this crossmember on some installations, but most of our kits provide support on the new adapter housing.

When installing the new transfer case adapter, make sure that the transfer case input sleeve and the output shaft do not 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, we find a small amount of interference. The adapter housing and shaft must be assembled to the back of the transmission without interference. **DO NOT FORCE THE NEW TAILHOUSING ONTO THE TRANSMISSION.** If assistance is needed, please feel free to call us on our toll free number, **1-800 350-2223**.

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 O-ring seal is a stock GM item that is used on all TH350 installations.

This adapter can be used on either Jeep Wranglers 1995 & newer or Jeep Cherokees 1995 & newer. The only difference is the transfer case shifter linkage. The adapter is 1-1/2" thick and will provide an overall transmission assembly length of 23". On this conversions, you can anticipate driveshaft modifications.

**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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Jeep Wranglers 1995-96 will require shifter bracket P/N 715523, Some applications will the purchase of a stock Jeep bracket, AA P/N 715545. This is the most universal for YJ Wranglers. TJ conversions will need bracket P/N 715542 to locate the complete linkage to the transmission and transfer case assembly.

### THINGS TO CONSIDER BEFORE YOU BEGIN:

1. Medium strength thread locker is recommended on all threaded fasteners.
2. A sealant such as RTV (like the OEM sealant) is needed and is available from your local Jeep/Dodge dealer. P/N 82300234.

### INSTRUCTIONS:

This new input gear will only fit the NP231 transfer cases. The installation of the gear will require the complete disassembly of your NP231 transfer case. Since the transfer case has to be completely disassembled, this is also a good time to install a short output shaft kit (fixed yoke kit) if you have not done so already.

If you've never disassembled a New Process transfer case, here are a couple of points to keep in mind that will make the installation much easier:

1. Keep all bolts, nuts, washers, etc. separated into groups as you remove them. Make sure you keep them in a labeled container that indicates what part of the transfer case they came from.
2. Keep all small parts in separate containers and label as to location and origin.
3. Make sure you have plenty of time and have a clean, spacious area to perform the installation.

Remove the front yoke nut with a 1-1/8" socket using an impact wrench. Remove the rear case bolts. A 10mm 12 pt. socket is needed for the spline head bolt and a 15mm socket for the remaining bolts. **NOTE:** The two black oxide finished bolts are located at the case dowel positions and require a washer under them. Start to remove the rear case from the front case by inserting pry bars at the cast-in locations **ONLY!** Pry apart evenly to break the sealer bead along the case mating surfaces. The front output shaft and chain should be retained with the rear portion of the case.



On the front side of the transfer case, you'll need to remove the 4 bolts that retain the aluminum bearing retainer. Once this is removed, you'll find a snap ring that retains the input gear to the cases' input bearing. This snap ring must be removed so that the input gear can be removed from the inside.



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On the inside of the transfer case, you'll now be able to remove the planetary assembly. Set the assembly on a work bench and locate the snap ring that retains the input gear into the planetary housing. Remove the snap ring and lift the input gear out of the planetary housing.



Once the input gear is removed, you'll find a thrust washer that must be reinstalled onto the new 27 spline input. When comparing the two input gears, they should look the same except for the internal splines. If you find a difference between the two. The NP231 transfer case used two styles of front input bearings. The early transfer case used a wide bearing and the later model used a narrow bearing. This new input gear is designed for only the early style case. New Process changed the bearing and gear pitch design in 1995. The center photo below show a later model input compared to an early.



Once you have verified that you have the same style input gear, install the gear into the planetary, install the snap ring. Re-install the planetary assembly into the case and secure the input to the bearing with the front snap ring. **Note:** The only part you should have left out of the case is the old input gear. During reassembly, make sure the oil return hole matches the front retainer hole.

### TH350 ASSEMBLY PROCEDURES:

1. Before assembling verify that the transmission has a 27 spline output shaft and the stickout is approximately 1" .
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.**
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 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. The stock studs and nuts from the transfer case can be reused 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.

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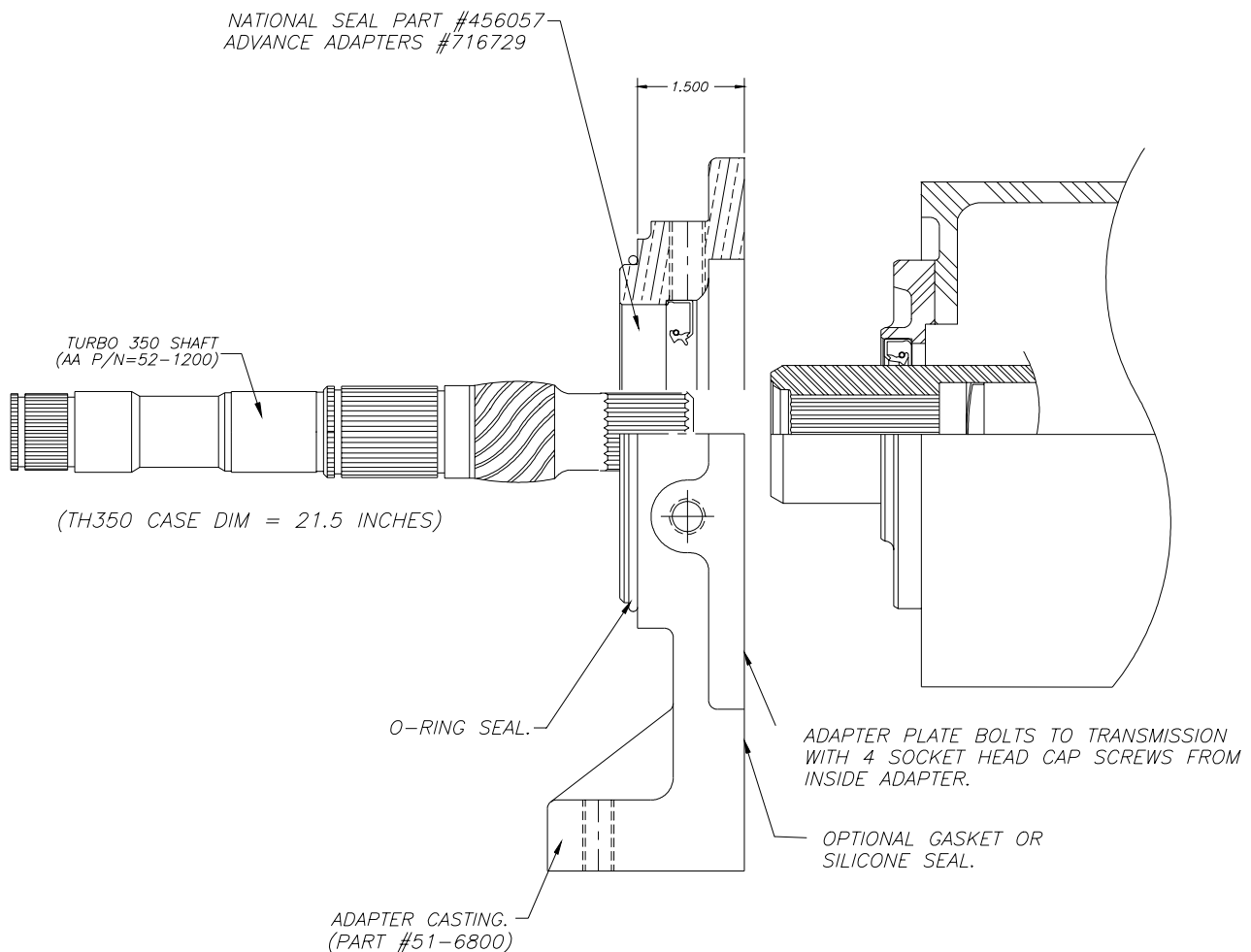
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