

**ADVANCE  
ADAPTERS  
INC.**

# CONVERSION GUIDE

**GM S-SERIES AND FULL SIZE TRUCKS**



**The Four Wheel Drive Experts!**



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This **FOURTEENTH** edition of the Advance Adapters Chevy & GMC Engine Conversion manual is an accumulation of Advance Adapter's experiences and knowledge in performing various types of conversions. The information and photos are directly related to the products offered by our company. We have put this manual together for your reference in either performing the actual conversion or trying to establish an estimate on tools required for your specific type of conversion. There are several major sections covered in this booklet along with several reprint articles that have been supplied to us through the courtesy of various magazines. The information in this guide is constantly being updated and we ask that you verify any information that may be critical to your application. We highly recommend that you acquire the individual shop manuals for your particular vehicle as support for torque, gasketing, and assembly specifications which pertain to your vehicles requirements.

**SPECIAL NOTE: Catalog Contents**

This manual has been put together with the best possible information available to us. Advance Adapters cannot accept the responsibility for vehicles and applications that are not standard. The contents of this brochure have been proofread before printing to minimize errors. We cannot be held responsible for errors overlooked. Please feel free to contact us with any suggestions or comments you may have regarding any portion of this manual. The information that you provide us could be useful in assisting other customers.

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Monday through Wednesday 8:00 a.m. to 4:30 p.m.  
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# ENGINE & BELLHOUSING INFORMATION

**CHEVY V8:** When it comes to bellhousing bolt patterns, the small & big block Chevys are the same. (This is known as the 90 degree bolt pattern). These engines use a dowel pin alignment. The stock starter bolts to the bottom of the block except on some early blocks like the 265. (*Note: These early blocks, in which the starter bolts to the bellhousing, should not be used for conversions*). The flywheel can either be 153 tooth measuring 12-3/4" in diameter, or 168 tooth measuring 14" in diameter. The 1985 & earlier flywheels are not interchangeable with the 1986 & later flywheels due to a change on the flywheel crank bolt pattern and balancing. If you are using a stock GM bellhousing, make sure you have proper clearance for the flywheel. For the proper starter, GM used two different bolt patterns on the bottom of the block. The straight bolt pattern is normally used with the 153T flywheel, and the offset or staggered starter bolt pattern is normally used with the 168T flywheel. Many Chevy blocks today offer both starter bolt patterns on the block. Some of our conversion bellhousings require a special GM starter nose cone. If your stock starter is interfering with our bellhousing, you may need to grind on the bellhousing a bit or purchase a hi-torque starter which does not have a nose cone: *GM# 1968122 - Nose Cone* (for use with a 153T flywheel). **WARNING:** Do not use one of our full conversion bellhousings with a diesel engine. The starter will not fit the bellhousing pocket on our bellhousing.



The oil pans on Chevy blocks have gone through a few changes. 1985 & earlier blocks are all the same except the dipstick access is either on the driver's side or passenger side. In 1986, GM changed their gasket design to a one piece rear main seal. The earlier style oil pans will not fit the newer blocks.

The computer controlled blocks of the '90s had oil level sensors added. The oil pans we manufacture do not have provisions for this sensor. *Caution should be used if you plan on using a newer Chevy V8 or 4.3 V6.* Vortec engines, for example, used an aluminum oil pan. This could cause problems with S10/S15 4WD conversions since clearance is an issue on the front axle. These oil pans also provided mounting holes for the stock bellhousing, but our conversion bellhousings do not offer these mounting options. On vehicles using these new blocks, you should consider retaining the stock transmission that was originally coupled to this engine. We offer a full line of transfer case adapters to couple these newer transmissions to your transfer case.

Most GM blocks used a triangular motor mount bolt pattern. Our conversion mounts all utilize this most common mounting configuration. In the late '90s, and with the introduction of the LS1 and *some of the Vortec* blocks, we've seen variations from this bolt pattern. If you plan on using a late model V6 or V8 block, please confirm that you have this triangular mounting pattern. If you're using a Vortec block, you'll need to check the block to see which mount bolt pattern you have. LS1 blocks use a square bolt pattern for the motor mount on the block. We now offer some mounts for this block. GM also changed the crank flange stickout location on the LS1 block. This crank is recessed .400" closer to the rear of the block than any other stock Chevy block. When this block is used in a conversion, the torque converter or the clutch components will need to be adjusted. **NOTE:** LT1, LT4, ZZ4, and LS1 blocks all use angle port heads which are not compatible with our headers. These blocks also require a steam release port on the radiator. The radiators we offer do not have the steam release provision.



**CHEVY 265:** If you wish to use a Chevy 265, we have found that a company called *Classic Chevy International* offers a starter adapter plate that will allow you to use this block. Their phone number is (800)456-1957.

**CHEVY 90 degree V6:** This block can either be the 3.8 (229) or 4.3 V6. These engines are identical to the Chevy V8 application with reference to bellhousing, starter, and flywheel. The oil pan has year differences like the Chevy V8, except with the 1996 & newer aluminum oil pan. **Vehicles requiring oil pan modifications should not use this newer block.** Motor mounts are also the same as the Chevy V8, with the exception of the location of the triangular bolt pattern in reference to the back of the block. The mount is approximately 4-1/2" closer to the backside of the block.

**CHEVY 60 degree V6:** This is the 2.8L V6 used in S10/S15s and Jeep Cherokees. This bellhousing bolt pattern is completely different than the 90 degree Chevy bolt pattern (see photo right). GM automatics that have this bolt pattern will not bolt to the 90 degree blocks. In 1996, GM introduced a stock engine replacement known as the 3.4L.



**BUICK V6:** Buick used two different bolt patterns like the engines listed above. The 225, 231, and 3.8L (rear wheel drive vehicle) all used the standard Buick bolt pattern for which we offer motor mounts, bellhousings, and adapters. Engine blocks like the 3.8L transverse (front wheel drive vehicle) have the same bolt pattern as the Chevy 2.8L V6. We do not offer adapters or motor mounts for the Buick aluminum 215 block.

# GM TRANSMISSION INFORMATION

## (Automatics)

This section covers stock GM transmissions, standard modifications, gear ratios and bolt patterns. The general information provided will apply to most conversions in this booklet.

**TH350:** This GM automatic was commonly found stock in vehicles from 1969 to 1981. It was used in both the 4WD pickups and 2WD car applications. These transmissions are identical except when it comes to the output shaft stickout length. The 4WD transmission used an adapter to bolt this transmission to its stock transfer case. With this adapter removed, the stock output shaft protrudes from the back of the transmission case approximately 1". On 2WD vehicles, these transmissions used 3 different tail housings. The lengths of these tail housings are 6", 9", and 12". The output shafts lengths correspond with these tailhousing lengths.



This transmission is one of the most popular choices for engine and transmission conversions due to the overall length of 21-1/2". The 1st gear ratio is 2.52:1; 2nd 1.52:1, and a 3rd gear ratio of 1:1. When converting with this transmission, we recommend that you cut the two tabs as illustrated. This allows for exhaust and firewall clearance.

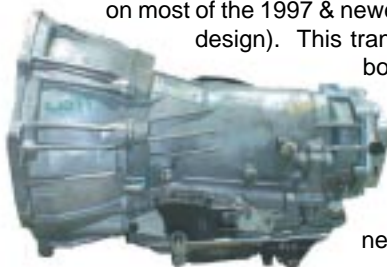
**700R:** This is the first automatic overdrive that GM produced. Introduced in 1982, this transmission is offered in two different bellhousing / case designs (60 & 90 degree bolt patterns). The internal components of these 700Rs can be interchanged if necessary. When this transmission was first introduced, it quickly developed a bad reputation for certain weaknesses. In 1987, GM resolved all of the problems that previously existed.

In the 1990s, the name of the 700R transmission changed to **4L60**. These transmissions are ideal for many conversions because of the 30% overdrive. The overall length of this transmission is 23-3/8". It has a 1st gear ratio of 3.06:1; 2nd 1.62:1, and 3rd gear ratio of 1:1.

When converting using this transmission, we recommend that you cut the two tabs as illustrated above right. This will allow for exhaust and firewall clearance. (Note: We offer a 700R lockup bypass kit, [Part No. 24-700R](#)).



**4L60E:** This transmission is identical to the 700R/4L60 except that it is an electronically controlled transmission. GM manufactures this transmission in two versions. Both these transmissions use a reluctor ring connected to the GM engine computer for proper shifting points. The first version is a mirror image of the 700R, but it requires a reluctor ring. The second version is found on most of the 1997 & newer vehicles. The case and bellhousing are no longer cast together (now a removable bellhousing design). This transmission no longer has the square bolt pattern on the output side, but is equipped with a hex bolt pattern similar to a TH400. This transmission is 21-7/8" long, and is used in both 2WD & 4WD vehicles. We manufacture an adapter plate that bolts to the output side of this transmission, giving it both the reluctor pickup and the same overall length as the 700R. A new output shaft is normally required when adapting to these transmissions. When bolted to a Generation III block, this newer style 4L60E used a metric style torque converter.



This transmission is 21-7/8" long, and is used in both 2WD & 4WD vehicles. We manufacture an adapter plate that bolts to the output side of this transmission, giving it both the reluctor pickup and the same overall length as the 700R. A new output shaft is normally required when adapting to these transmissions. When bolted to a Generation III block, this newer style 4L60E used a metric style torque converter.



**TH400:** This transmission is known as the heavy duty version of the TH350. We manufacture a full line of adapters to utilize this transmission. The O.A.L. is 24-1/4" long. The 1st gear ratio transmission is ideal for Full size vehicles because of its strength; however, caution should be used when converting this transmission into short wheel base vehicles because of the overall length. The 4WD output shafts are all 32 spline; however, we have seen a couple different lengths. To the best of our knowledge, the 1.5" stickout past the rear case was found coupled to the NP208, NP241, and the circular NP205. The 4.5" was coupled to the NP205 figure eight pattern T/C.



**4L80E:** This transmission is similar to the TH400 except that it is electronically controlled and has an overdrive. This transmission does not use a reluctor ring like the 4L60E. The sensor on this transmission is internally located. The tailhousing bolt pattern is the same as the TH400, but indexed with a different diameter. There are several lengths of the stock transmission output shaft. We utilize only two lengths in our adapter kit. You may be required to purchase a new output shaft. The 1st gear ratio is 2.482; 2nd 1.482; 3rd 1.1, and a 4th gear ratio of .75.

# GM TRANSMISSION INFORMATION

## (Manuals)

GM manual transmissions can be classified into two groups. They are either Car or Truck style transmissions. The car style transmissions used in GM vehicles usually have a higher 1st gear. They are considered light duty compared to a truck tranny but strong enough to handle V8 horsepower. The truck style transmissions normally have a lower 1st gear (non-synchronized). These transmissions are built to withstand extreme 4WD conditions.

**SM420 (Truck style):** The overall length is 10-1/2". It has the lowest 1st gear available of 7.05:1; 2nd 3.57:1; 3rd 1.7:1, and a 4th gear ratio of 1:1. The transmission was used in GM trucks 1947 to 1968, and has a 10 spline output shaft. As the years progress, it is getting harder to find this transmission and parts.



**SM465 (Truck style):** Used from 1968 to 1988, this transmission replaced the SM420. It has an overall length of 12". The 1st gear ratio is 6.58:1; 2nd 3.58:1; 3rd 1.57:1, and 4th gear ratio of 1:1. This transmission was used in both the 2WD & 4WD vehicles. Throughout its 20 years, the transmission case never changed; however, we have seen three different output shafts. The 1968-79 4WD transmission used a 10 spline output shaft, which is easily adapted to. The 1968-88 2WD version used a 35 spline output shaft. This transmission can also be used, but only with output shaft modifications. The 1980-88 4WD tranny used a long 32 spline output shaft. We do not offer any adapters that couple to this output shaft because of its length. If you have this SM465 put shaft to the 10 or 35 spline output.



**NP435 (Chevy):** This transmission was used sparingly in Chevy vehicles. We manufacture many adapters for the Ford version of the NP435. These adapters do not work on the Chevy NP435.

**NV4500 (1993-94):** During the first two years of the NV4500, Chevy offered this 5 speed with a 6.34:1 1st gear; 2nd 3.44:1; 3rd 1.71:1; 4th 1:1 ratio, and a 27% overdrive. It was also the first year that Chevy changed the bellhousing-to-transmission bolt pattern. This transmission is ideal when converting your vehicle, providing an ultra-low 1st gear. GM, however, only produced this particular ratio during these years. The major complaint of this 5 speed was stiff shifting and noise in 3rd gear.

**NV4500 (1995):** This transmission is identical to the 1993-94 transmission, except the 1st gear ratio had been changed to 5.61:1; 2nd 3.04:1; 3rd 1.67:1; 4th 1:1 ratio, and a 27% overdrive. The noise and shifting problems had been corrected.

**NV4500 (1996-2006):** This transmission has the same gear ratio as the 1995 version. Chevy once again changed the bellhousing-to-transmission bolt pattern and went to a larger bellhousing index diameter. This Chevy NV4500 has the same bellhousing-to-transmission bolt pattern as the Dodge NV4500. These transmissions use a GM internal release bearing.

**Dodge NV4500 (1993-2006):** This transmission is the same as the 1996-99 Chevy version; however, the only difference is the transmission input shaft, output shaft and the tailhousing. The 2001 & newer Dodge transmissions were changed to a 29 spline output shaft.



All NV4500 transmissions have a 12.375" case length.  
(For more information on NV transmissions, order instruction manual NV001)

**Muncie (Car) 4 speed (M21/M22):** Used in cars 1964-1974, this aluminum case transmission measures 10-1/2" long. The 1st gear ratio is 2.54:1; 2nd 1.88:1; 3rd 1.46:1, and a 4th gear ratio of 1:1. This is an externally shifted transmission and any adapters using this transmission will require shifter components.

**Saginaw (Car) 3 & 4 speed:** Used in cars 1966 to 1982, these transmission measures 9-5/8" long. The 1st gear of the 4 speed is 2.20:1; 2nd 1.64:1; 3rd 1.47:1, and 4th gear ratio of 1:1. The 3 speed has a 1st gear ratio of 2.54:1; 2nd 1.88:1, and a 3rd gear ratio of 1:1. These transmissions are externally shifted and will require shifter components.

**89MM:** This is a 4-speed overdrive transmission commonly found in late model half-ton GM vehicles. This light-duty 4 speed has roughly a 4-to-1 1st gear ratio with a 25% overdrive. We manufacture adapters to replace this transmission, but we do not offer any adapters to retain this transmission.



## ENGINE & TRANSMISSION CONVERSIONS FOR 2WD & 4WD S10/S15 VEHICLES

We have been developing engine and transmission parts for the popular GM S-series trucks and mini-Blazers for well over 15 years. We have found the S10/S15 an easy vehicle to convert. We've strived to research every possible conversion problem or difficulty that you might encounter when converting your vehicle. It is our opinion that if you use our recommended parts, you will be able to complete your conversion with a minimal amount of difficulty. This manual contains most of the necessary information or answers to questions that arise during the course of your engine and transmission conversion.

The parts we manufacture are available for either Chevy V8 or Chevy 4.3 V6, retrofitting the stock S10/S15 2.8L V6, 4 cylinder and stock 4.3 V6. Because of the diversity of applications, we do not offer complete conversion packages. We have grouped the conversion components by applications. Many of our components are necessary when converting your engine and/or transmission. Items such as exhaust and radiators can be modified or sourced elsewhere.

When converting your S10/S15 to a V8, many of the original components can be reused such as your power steering pump, alternator, and A/C compressor. However, we have found that these components are only compatible with 1978 or newer V8 engines. The following subsections will provide you with some ideas related to the new V8 requirements. We have purposely left off specific bracket part numbers. We have found that specifying certain bracket part numbers could cause you difficulty because of the various engine options. For this reason, we only supply part numbers that will fit the majority of the Chevy V8 engines. Please read over the following information carefully before proceeding with your conversion. By doing so, you may eliminate any unforeseen problems.

### GENERAL CONVERSION INFORMATION:

*Engines & Transmissions:* The S10 2WD was first introduced in 1982, and the 4WD model became available in 1983. These vehicles came stock with a 2.8L V6 or 4 cylinder, which proved to be underpowered. The transmissions used in these vehicles were either the 700R (60 degree bolt pattern) or T5. We offer the necessary components to install the Chevy 4.3 V6 or Chevy V8, utilizing either the TH350, 700R, or stock T5. These conversions for both the 2WD and 4WDs are very popular and can normally be performed without driveline modifications.

In 1988, the S-series pickups offered a 4.3 V6, and still utilized the 700R or the NV3500 transmission (shown). These engine and transmission combinations seemed to be an excellent upgrade, but many people still wanted V8 power.



In 1996, the NV1500 was introduced behind 4 cylinder motors. No adapters are available to retain this transmission.

*Body Style Changes:* In 1994, the body style on the S10/S15 was redesigned, and the mini-blazer in 1995. Despite the exterior changes, the frame and chassis remained unchanged. Currently, engine conversions using our components have been performed on vehicles as new as 2000 (on 2WD vehicles), and 1997 (on 4WD vehicles).

Many questions arise when considering any engine swap. Some of these questions include: Year & size block to use, transmission choice, transfer case & axle strength, suspension requirements, body lift, cooling, exhaust, and installation time. On the following pages, we have attempted to answer these questions, plus many others.

### TOOLS REQUIRED:

The S10/S15 utilizes a variety of metric fasteners. Most of the stock engines are completely metric along with the transmission. It is recommended that you have the proper metric wrenches to complete this conversion. In addition to this, you will need an engine hoist and a torque wrench. Welding or cutting, in most instances, is not required; however, there are variations in different vehicles that may require the use of a welder or cutting torch.

### ENGINE & TRANSMISSION REMOVAL STEPS:

To remove the engine, take off the hood, drain the cooling system, and depressurize the A/C system. Next, disconnect all necessary electrical connections and remove the fan shroud, radiator and fan. Make sure that you label all the electrical connections to ensure the proper connection to the new engine.

The next step is to remove the heater hoses, air cleaner, vacuum hoses, throttle cable and the upper "Y" pipe bolts. It is advised that you label all of your vacuum hoses so that they can be reattached in the correct location. Now, remove the fuel lines, the transmission strut rods, and finally the motor mount bolts. In some instances, it may be necessary to remove the A/C compressor and the power steering pump; however, in most applications this can be avoided. This procedure for removing the engine will take between two and six hours. The transmission should be removed prior to the engine removal. You cannot remove the engine and transmission as one unit on 4WD vehicles; and on 2WD vehicles it depends on whether the grille is removed.

## ENGINE SELECTION:

First check your local Department of Motor Vehicles for smog & engine requirements. Certain states, such as California, require the same year or newer engine as the vehicle. **(The engine should be complete, retaining all smog equipment).** Both the Chevy V6 & V8 fit well in these vehicles. All Chevy V8 blocks, whether it be a 305 327 or 350, all have the same physical dimensions and use the same motor mounts. Choosing the right block depends on the intended use of your vehicle and your state regulations. See Page 3 for additional engine information.

## ENGINE/MOTOR MOUNTS:

*2.8 replacement:* The engine mounts that we manufacture have been designed around the use of the original 2.8 V6 rubber engine supports. The original V6 rubber mounts that are bolted to the chassis must remain in their original position for use with the new V8 engine, 4.3 V6 engine, and Buick V6 engines.

*4 cylinder replacement:* For 1982-90 vehicles originally equipped with a 4 cylinder engine, you will need to purchase two of the original 2.8L GM motor mounts. These mounts bolt into the frame rails replacing the stock 4 cylinder mounts. These pads must be installed onto your frame before proceeding with your engine installation. This mount is *GM Part No. 22188284 or MT2436* (two are needed).

When you install the GM frame mounts on vehicles 1985 & newer, you will have tapped holes that will make the installation of the new mounts very easy. On vehicles that do not have these tapped holes, you will need to install the mounts from the bottom side of the chassis. This will require the disassembly of the "A"-arm assembly and will take approximately 6 hours. An alternative would be to simply cut a small access hole on the backside of the crossmember to provide clearance for both a wrench and nut enabling you to secure the mounts in the proper location. Once the 2.8L mounts are installed, the conversion mounts that we manufacture will then position the V8 engine.

*4.3 replacement:* For vehicles that were originally equipped with a 4.3 V6, we offer a set of motor mounts that utilizes the stock V6 mount assembly allowing the installation of a Chevy V8. These mounts use the 4.3 rubber mount and then a 5/16" plate mount to allow for the offset of the V8 engine.

*4 cylinder replacement:* For 1991-2000 vehicles originally equipped with a 4 cylinder engine, you will need to purchase two of the original 4.3L GM motor mounts. These mounts bolt into the frame rails replacing the stock 4 cylinder mounts. These pads must be installed onto your frame before proceeding with your engine installation. This mount is *GM Part No. 22188970 or MT2627* (two are needed). You will also need to purchase two steel frame perches *GM# 15602789* (left steel mount), and *GM# 15674856* (right steel mount). Once the 4.3L mounts are installed, the conversion mounts that we manufacture will then position the V8 engine.

## TRANSMISSION SELECTION & CONSIDERATIONS:

After selecting your engine, you must now decide on the proper transmission. The Borg Warner T4 and T5 transmissions are compatible with our bellhousing and are capable of 250 ft/lbs. of torque. If your vehicle was equipped with the Isuzu M73 transmission, it will need to be replaced. If you have a 700R-4 overdrive automatic transmission, the transmission case will need to be replaced with that of a full-sized vehicle. We feel that the best transmission of choice for both the 2WD and 4WD vehicles is the TH350 transmission. This transmission is durable and easy to install. Most conversions will require some kind of transmission modification. We have detailed specific modifications and installation procedures for most of the popular transmission selections in this manual.

**700R:** We commonly deal with two types of GM 700R transmissions. The S10/S15 used a 700R up against a 2.8L V6. This transmission differs in two areas from a 700R that was originally bolted to a V8. The first difference is the bellhousing bolt pattern. The 2.8L 700R version is commonly known as the 60 degree bolt pattern, and the 700R V8 version is known as the 90 degree bolt pattern. The second difference is the 2.8L 700R uses less clutch packs than the V8 700R.

If you want to retain your 700R, you will need to switch your 2.8L 700R transmission casing to a V8 700R casing. (*Note: S10/S15 equipped with a 700R and a 4.3 V6 have the 90 degree bolt pattern which will not need to be changed.*)

**T5:** The T5s equipped in these vehicles are not recommended for bolting up to the Chevy V6 or V8; however, we do carry a bellhousing for customers that wish to retain this transmission on 1984 and newer vehicles. 2WD vehicles should never retain this 5 speed. 4WD vehicles 1982-83, that have a mechanical clutch or manual transmission and used with a 4 cylinder engine, should consider switching to an automatic transmission due to the cable-operated clutch linkage.

**NV3500:** This transmission is normally found up against the stock 4.3 V6 and does not require an adapter when converting to the V8.

**TH350:** This is the most popular transmission to be installed in combination with a V6 or V8 engine selection. On 2WD vehicles, a TH350 with a 9" tailhousing can be installed without driveshaft modifications. On 4WD vehicles, a TH350 replacing the 700R (using our adapter) can be installed without driveshaft modifications. When replacing a T5, no driveshaft modifications are necessary, but a stock adapter housing and transfer case shifter components are required. More information regarding the TH350 transmission can be found on Page 4.

**Flywheel, Flexplate & Clutch:** When using an automatic transmission such as the TH350 or the 700R, we recommend the use of the large diameter 168 tooth flexplate. Make sure the flexplate you select is balanced for the engine that you are using. Some Chevy engines will require externally balanced flywheels.



When using a manual 4 or 5 speed transmission, we have a maximum clutch disc size of 10-1/2". The pressure plate is a short throw design for use with the new GM slave cylinder. *It is highly recommended that you use this pressure plate. Failure to do so may result in improper clutch disengagement.* The pressure plate, clutch disc & flywheel assemblies are available through Advance Adapters. These clutch items are all manufactured by Centerforce Clutches.

**Transmission Crossmember Modifications:** On 4WD conversions, your transmission crossmember will remain in the stock location. There may be slight modifications necessary to the two slots that locate the bolts for the transmission crossmember support. On 2WD conversions using a TH350 transmission, you may be required to modify the mounting area to match the TH350 rubber mount. There are slight differences between the years, but most applications can be easily modified for use with the new transmission.

**Transmission Column Shifter:** In order to retain the original automatic transmission column shifter, you will need to make some modifications to the control lever. The lever will need to be bent back closer to the firewall and the linkage rod will need to be adjusted accordingly. On 4WD models, a new linkage bracket from a 1989 S10 equipped with a 4.3 V6 will be required.

## TRANSFER CASE & AXLE STRENGTH:

The S10/S15 4WDs used either a NP207 or NP231C transfer case. These transfer cases are chain-driven units and are built strong enough to handle the torque of the 4.3 V6 or V8.

The stock S10/S15 axles are adequate to handle most 4.3 V6 & V8 conversions. Caution should be used on 4WD vehicles running larger tires or conversions with high performance engines.



## SUSPENSION REQUIREMENTS:

The installation of a V8 is about 175 lbs. heavier than stock. On 2WD applications, your front suspension will normally drop about an inch. We recommend using a heavy duty shock which will compensate for this drop, or you can change to an extended cab front coil spring which has a greater load rating. With a greater rating, it should raise the vehicle back to its original height. Some vehicles have encountered severe wheel hop & spring wrap up in the rear axle. Some solutions for this problem could be to install a set of ladder bars or kicker shocks to help prevent this problem.

On 4WD applications, the suspension is normally equipped to handle the extra weight. Adjusting the torsion bars will compensate for any drop in front end height.

When converting to a Vortec 4.3 V6 in either a 2WD or 4WD vehicle, we have not noticed any difference in vehicle height. Therefore, no adjustments are needed to your vehicle's suspension. *Once completing any one of these vehicles, your front end alignment should be checked.*

## BODY LIFTS:

A body lift is not required on both the 2WD & 4WD versions. However, we have found that a body lift greatly increases additional engine, transmission tunnel & hood clearance. This, therefore, reduces the amount of firewall and floor pan modifications. Usually a 2" body lift is adequate in helping to alleviate these clearance problems.

## COOLING REQUIREMENTS:

The radiators from Advance Adapters are the best possible solution to keeping high performance engines cool. When replacing a 2.8L or 4 cylinder, a radiator upgrade is normally required. We offer two choices of aluminum radiators. We carry a single core with plastic tanks and a custom two core that is branded as (AA). All of these radiators bolt in the stock location. On vehicles that were originally equipped with a 4.3L and converting to a V8, we recommend trying your stock radiator first.



P/N 716694-AA

In order to cool a high performance V8 engine, you should not



P/N 716686



waste money in trying to modify the existing radiator. Our radiators will maximize the cooling potential for your new engine conversion. The *Rad-A-Kool* radiator, P/N 716694-AA works excellent. Using modern aluminum core technology, customers can expect a 20 degree temperature drop compared to copper/brass radiators. The dimensions of the Rad-A-Kool radiator is 32" wide, 16-1/2" tall & 3" thick. These dimensions require you to widen the core support opening. Our single core radiator, P/N 716686, works well for the 4 cylinder and 2.8L engine replacements. Dimensions of this radiator is 28-1/2" wide, 16-1/2" tall & 2-1/2" thick. If you are concerned that this radiator not provide sufficient cooling for your application, then we suggest upgrading to the Rad-A-Kool radiator.

The transmission cooler lines on both radiators will remain on the passenger side of the vehicle for easy access.

*Fan Shroud:* When installing a V6 or V8 engine, it will be necessary for you to modify your stock fan shroud. The mounting portion of the shroud that holds the radiator in position should be retained for use with your new radiator. If the upper and lower portions are retained, the new radiator can be easily installed.



*Electric Fans:* On most conversions, it is a tight fit to retain a stock conventional fan. A 17" engine-driven fan works well. We suggest that you consider using two remote electric fans on the outside of the new radiator. This photo illustrate the installation of the two new fans. We recommend the use of two 10" or 12" *Flex-A-Lite* pusher fans to assist in achieving the 950 CFM V8 requirements. These fans must be used on the front side of the radiator. The 10" can be installed with minor modifications, while the 12" will require major modifications to the grille and radiator support brackets. It may be necessary to install an aftermarket tubular grill for additional fan clearance. *Flex-A-Lite* Model 20 works excellent, but will require special mounting brackets and slight trimming in order to fit on the front side of the radiator.

*Radiator Mounting:* The location of the radiator may be different depending on whether your vehicle is equipped with an air conditioning condenser coil. Vehicles without the A/C coil will be able to cheat the radiator into the grille or radiator support area. This will require modifications to the lower radiator support and will also require a modification to access the filler neck. By cheating the radiator into the grille area, a mechanical fan can be used. **NOTE: All of our radiators can be mounted directly inside the radiator support core. The radiator cap will remain in its original position.** If your vehicle is equipped with air conditioning, the radiator will be limited to being flush with the radiator support bracket. The A/C coil must be mounted on the front side, directly inside the radiator support area. If you keep the spacing between the A/C coil and the radiator to a minimum of 1/4", then you will have space available for mounting the electric pusher fans on the front side of the A/C coils.

In order to maximize radiator-to-fan clearance, you must mount the radiator as far forward as possible. To achieve this, the lower section of the S-truck fan shroud will need to be cut so that it is a flat piece that only holds the rubber cushions. The lower portion will need to be sheet metal screwed to the chassis once the proper location has been determined. The upper mounting will require two small pieces of steel strapping that will retain the upper portion towards the front grille. The radiator cap should be changed from the standard GM cap to the aftermarket octagonal cap to allow extra clearance for cap removal. Make sure that proper cushioning is provided between the radiator and brackets. The AA radiators offer both key stock and dowel pin supports for early and late model lower mounting applications.

*Lower Radiator Hose:* On late model engines, the heater hose connection is an integral part of the lower radiator hose. This connection can either be extended to the passenger side of the new radiator or it can be spliced into the lower hose. GM has available a special "T" connector for the splicing. The GM part number is #15617959, and was originally used on the Chevy Astro Van 4.3 engines. The lower radiator hose can be made up by modifying a standard Goodyear radiator hose #61460 or Napa #FF254. There are numerous combinations to make up the necessary connections and we suggest that you work closely with your local auto parts store. Quite often you will need to use special reducer bushings that will neck down a 1-1/2" I.D. hose to 1-1/4". These bushings are readily available at most auto part stores.

*Upper Radiator Hose Connection:* In order to install a large engine-driven cooling fan, you will be required to route the front radiator hose directly behind the driver's side alternator position. If you are not going to use the engine-driven fan, then the conventional thermostat housing can be retained. When using the large fan that requires additional clearance, we recommend using a thermostat housing from a 1976-78 Chevy Monza V8. This housing has a 1-1/2" diameter hose connection that will require a bushing when used with the new radiators. The best hose for this application is one that was originally used on the Pontiac Firebird, Goodyear No. 60625, or a portion of a lower 1986 Camaro hose can also be used.



*Water Pump:* We have found that by using the long-style water pump (from Chevy vehicles 1978 & newer) in conjunction with our motor mounts, P/N 713107 (4WD) or P/N 713111 (2WD), you will have an easier time finding the necessary brackets required for mounting the engine accessories. If your S10/S15 was originally equipped with air conditioning, then it will require the use of the long-style water pump. The short version could be substituted to obtain additional clearance for a conventional fan, but bracket modifications will be required for installing the power steering and alternator.

**Thermostat Housing:** The thermostat housing should be from a 1991 Caprice or a 1977 Monza V8. The design of this housing will allow the radiator inlet hose to be angled towards the firewall, allowing for a better hose connection to the radiator. The late model 1986 & newer Chevy TPI thermostat housing has the outlet installed directly towards the radiator. This housing must be removed and replaced with an *Everco #W2488*.



We offer FLOWKOOLER high flow water pumps and thermostats. These water pumps produce 22% more water pressure inside the block and are 32% more efficient than other water pumps on the market. More information on these items can be found in the Advance Adapters Buyer's Guide.

**Temperature Gauge:** When converting to a V8, you must use the stock V8 sending units. These units will be compatible with your stock S10/S15 gauges. For the early S10/S15 vehicles that are using the electric temperature senders, we have discovered that they will vary up to ten percent (10%) on accuracy. We suggest that if you are having a heating problem, you might consider installing a temperature gauge that is mechanical and not dependent on the electrical sending unit. This will require a new gauge that is available at most auto part stores.

## ALTERNATOR:

Your stock V6 alternator can be retained by simply switching the pulley to one used on a V8 alternator. The mounting brackets must be changed to the correct GM V8 alternator bracket and adjuster. If you are replacing a 4 cylinder engine, we recommend that you purchase a new GM V8 alternator to provide the correct amperage.

GM ALTERNATOR BRACKET	GM# 14081227 (Adjuster)
GM ALTERNATOR BRACKET	GM# 14015533 (Front Bracket)
GM ALTERNATOR BRACKET	GM# 6262934 (Spacer)

## STARTER MOTOR:

When removing the 2.8 V6 engine, your original starter motor can be retained for use with the V8 engine. If you are replacing a 4 cylinder, you must purchase a new GM starter, 1982 or newer. This starter is much more durable and will provide longer service for your conversion. It is also recommended that you replace your V6 starter with this new starter. Some starters have a larger body diameter. These starters are generally the ones used with the larger flywheel (168 tooth). If you stay with the number listed at the end of this sentence, you will find that there is no problem with starter motor installation or with the engine position. (*GM #1108400* for 168 tooth flywheels or *GM#1108789* for 153 tooth flywheels, or Part No. 3510M, Starter--Remanufactured).

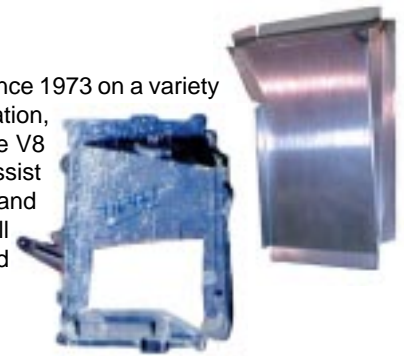
## FUEL PUMP:

When installing a V8 into your S10/S15, you can use either a mechanical or electric fuel pump. It's much easier to use an electric fuel pump, rather than trying to fit your mechanical fuel pump in an area that would require possible frame modifications. Electric fuel pumps are readily available from most auto part stores and offer a wide range of pressure ratings for your block.

If your S10 was originally equipped with an electronic fuel injection, your vehicle will be equipped with a high pressure fuel pump that is mounted in the gas tank. These pumps are not compatible with carbureted engines. The pump must be removed or regulated to a pressure of 5 to 7 pounds (carbureted blocks). We recommend a *Holley* fuel regulator, *Part No. 12-803*, for use with these applications. On engine installations that are going to use the Chevy V8 TPI engine, you will need to use the high-pressure fuel pump, along with the appropriate return line. The fuel supply line should be 3/8", and the return line should be 5/16". If a charcoal cannister is being used, then a 1/4" line is also required. Make sure these items are secured to the frame rail with the proper rubber cushioning.

## AIR CONDITIONING:

Your S10/S15 is equipped with an R4 radial compressor. This compressor has been used since 1973 on a variety of V8 engines. Brackets for your new V8 engine should be fairly simple. Due to the new location, you will be required to modify the wiring harness and lengthen your hoses necessary for the V8 engine. On both 2WD & 4WD conversions, an A/C evaporator housing cover is available to assist you in making the necessary clearances. This housing is normally necessary for exhaust and block clearance when retaining the air conditioning. The cover is **AA P/N 716421**. To install the new cover, you should remove the housing from the firewall for proper cutting and assembly procedures.



## OIL FILTER:

On 4WD conversions, you will need to remove the stock V8 oil filter and replace it with a bypass oil filter adapter. The clearance is necessary for the front driveshaft. The new oil filter mounting plate can be installed in the engine compartment. We offer a complete kit that includes hoses, bypass adapter, and new filter mounting bracket. On 2WD conversions, there is plenty of clearance so that the stock oil filter can remain in the original position.

## POWER STEERING:

We have found it best to substitute a V8 power steering pump in place of the original V6 pump. Even though they both have the same capacity, we believe that the V8 pump will permit the use of stock GM mounting brackets. These brackets can be found on 1981-1984 GM full-size "C" series pickups. In addition to these brackets, you will also need to obtain the correct V8 pulley for proper belt alignment. This pulley can be single or double groove - depending on whether you choose to use air conditioning. The double groove GM pulley is #14023173. There are several variations of brackets for mounting the power steering pump. You must pick a power steering pump installation that is compatible with your engine equipment. Some brackets require tapped holes in the heads and exclusive use with the long style water pump, while others have alternate mounting positions.

It may be possible that you will be able to retain the original V6 power steering high pressure hose, depending on the model of your new V8 pump. You may need to use a V8 high pressure line since they use a larger fitting for connecting to the pump. The low pressure return line normally requires lengthening and possibly rerouting to allow for ample clearance around belts and pulleys.

*Steering Column Shaft:* The plastic shield that is installed over the flex coupler of the steering drive shaft will need to be shortened or removed for clearance around the new V8 exhaust system. On vehicles 1982-85 that are having steering drive shaft clearance problems, you may need to make a steering column mounting location change prior to engine installation. The modification is to move the mounting holes on the firewall so that the column will enter into the engine compartment 3/4" further outward than the original location. This will require re-drilling the firewall mounting holes which changes the angularity of the steering shaft and provides additional clearance for the steering column housing. This modification should be done prior to the installation of the new engine.

By performing this modification, you will be able to avoid any special modifications to the driver's side exhaust manifold. The plastic shroud over the steering drive shaft can also remain unchanged.



## FIREWALL MODIFICATIONS:

Your S10/S15 firewall and floor pan areas are very narrow and, in most instances, will need some slight modifications. We have found that by using a 3 pound sledge hammer, it will provide adequate leverage in creating the required clearance. The body seam between the floor pan and the firewall seems to be the biggest problem in clearance. This can easily be taken care of by bending the seam over. In some instances, additional clearance may be needed near the bottom corners where the firewall and floor pan meet; however, if you modify your transmission (removing the transmission ears), these modifications can be avoided in most cases.

A body lift will provide additional clearance between the transmission and the floorboard area. Depending on which motor mounts and which Chevy distributor you are using, you will need to determine the firewall clearance requirements. If a large HEI distributor is being used along with AA motor mount [P/N 713107](#), you will be required to recess your firewall a 1/2" for necessary clearance. We suggest that you do the necessary modifications at assembly time in order to keep firewall modifications at a minimum. Certain stock cast iron manifolds will require additional firewall clearances on the passenger side when using air conditioning, and additional clearance may be necessary on the driver's side near the throttle entry area.

## EXHAUST:

We offer headers for Chevy V8 2WD and 4WD applications. Our "SlickFit" exhaust systems **ARE NOT** approved for use on smog-legal vehicles. These headers can be used on all early and late model cylinder heads.

In order to retain the smog legal status on your vehicle, you must consider the use of stock cast iron manifolds. The only manifolds that will be legally accepted will be the 1982 & newer low performance Camaro and Firebird exhaust manifolds. These manifolds are very compact and the main exhaust remains level with the exhaust ports. In order to use the Camaro/Firebird manifolds, your engine must be equipped with cylinder heads that were manufactured from 1978 & newer. These particular cylinder heads have provisions for mounting the newer manifolds. The difference is that these manifolds have an extra tapped hole at the rear on the passenger side. Without the correct heads, you will not be able to use the proper stock cast iron exhaust manifolds. When using the cast iron manifolds, the oil dipstick tube must be installed on the passenger side of the engine compartment. If your engine is equipped with the dipstick on the driver's side, you will find major interference problems with the stock exhaust manifolds.



*Passenger Side Stock Exhaust Manifold:* The flange connection must be very close to the back of the engine, and the correct manifold will have a 2" diameter outlet with the stud bolt installations already in position. If you select the high-performance manifolds that have the 2-1/4" diameter outlet, you will find interference problems with both the frame rail and the firewall. The correct manifold is illustrated. The correct manifold from the Camaro/Firebird can only be used with cylinder heads 1978 and newer having the double-tapped hole at the back port location.



*Driver's Side Stock Exhaust Manifold:* The manifold must drop between the third and fourth port on the driver's side. Refer to the illustration. The clearance between the stock manifold and the steering drive shaft is so critical that you may require special modification to the stock manifolds. This modification involves surfacing the flange area of the manifold approximately 1/8". This modification will allow additional clearance between the manifold and steering drive shaft. If your engine is not equipped with the dipstick on the passenger side, you will find severe interference problems between the driver's side manifold and oil dipstick tube.



### ELECTRICAL / WIRING CONSIDERATIONS:

*Ignition System:* Your S10/S15 was originally equipped with an HEI distributor. If you are installing a V8 with an HEI distributor, the stock S10/S15 wiring will plug right into the distributor. If, however, you are using a point-type distributor, you must obtain a new coil and resistor and will be required to rewire the ignition system.

*Fuel Injected TPI & TBI Harness Assemblies:* There are numerous aftermarket suppliers of engine harness assemblies. We have used and recommend the following companies as sources to assist you in this area.

Howell Engineering	(810) 765-5100	G.M. wire harnesses
Street & Performance	(501) 394-5711	G.M. & Ford wire harnesses
Centech Wiring	www.centechwire.com	G.M. wire harnesses
Speed Scene Wiring	(210) 651-1894/1895	G.M. wire harnesses

*Wiring Modifications:* Most engine conversions will require elimination of the ECM (Electronic Control Module). If you wish to keep the ECM, you will need to change the components to a unit compatible with your new engine. We suggest that you obtain the necessary GM manuals when rewiring the system. None of the existing V6 sensors will be compatible with your new engine. If you were using an HEI distributor, you will find that the existing V6 plug will fit your new distributor. If you change to a point-type distributor, you will need to change the wiring so that it includes a resistor and coil.



*Engine Knock Sensor:* On Chevy engines that are equipped with the computer controls, you will find it necessary to install an engine knock sensor. This knock sensor controls the timing of the engine computer and must be installed in an area compatible with the engine block. The engine knock sensor can be retained by using a 45 degree brass elbow, *Dorman #490-117*. (A small amount of grinding may be required on the motor mount for proper clearance).

*Tachometer:* If your vehicle is equipped with a factory tachometer, you will need to have it re-calibrated for use with the V8 engine.

### AVERAGE INSTALLATION HOURS:

The average conversion time on most vehicles is 40-50 hours.



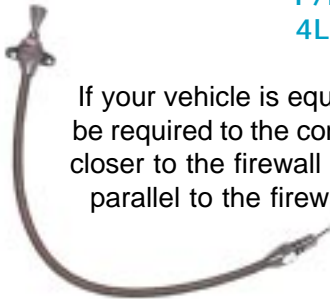
# AUTOMATIC TRANSMISSION INSTALLATIONS

## (TH350, 700R-4, 4L60E & TH400)

There are (4) types of automatic transmissions that can be used for both 2WD & 4WD models: the TH350, 700R-4 (4L60), 4L60E, and TH400; the TH350 being the most popular choice transmission with the 700R-4 and 4L60 being close behind. We have added the TH400 for high performance applications.

If the engine and transmission are moved back at any great length, you will find it nearly impossible to install the original transmission dipstick assembly. We offer special flexible dipstick assemblies from a company called *Lokar Performance Products*.

- P/N 23-0001 - GM TH350 & TH400 flexible dipstick assembly
- P/N 23-0002 - GM 700R flexible dipstick assembly
- 4L60 & 4L60E - Special order items



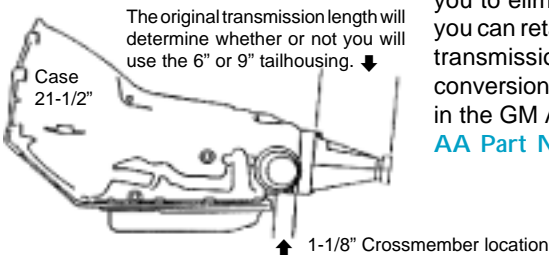
If your vehicle is equipped with the column shift automatic transmission controls, a slight modification may be required to the control arm that is located on the inside of the firewall. This arm will need to be bent back closer to the firewall for the necessary clearance around the exhaust system. Make sure that the lever is parallel to the firewall after the modifications have been performed.

### 2WD INSTALLATIONS

The best selection for a 2WD V8 installation is the TH350. This transmission case length is approximately 2-3/4" shorter than the TH400 and, when purchased with the 9" tailhousing, can be installed without driveshaft modifications. The TH350 will have minor modifications, whereas the TH400 will require major modifications to the firewall and tunnel areas. Modifications may vary depending on the engine selected.

#### TH350 PREPARATION:

When installing the TH350 into a 2WD vehicle, we recommend using a transmission which has a 9" tailhousing. This will enable you to eliminate driveshaft modifications. If you are replacing an automatic transmission, you can retain your stock shift linkage with minor modifications. If you are replacing a manual transmission, you will be required to purchase a new automatic floor shifter. This conversion will also require the elimination of the two ears of the transmission as illustrated in the GM Automatic Transmission section of this manual. We offer a B & M Sport Shifter, [AA Part No. 715680](#), for vehicles without a console.

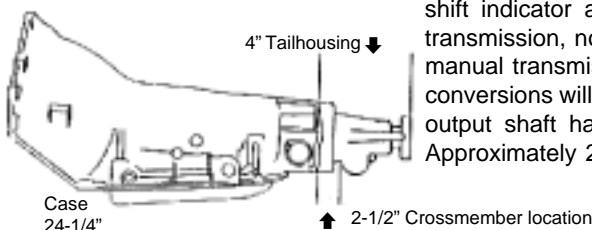


#### 700R-4 & 4L60E PREPARATION:

Most 2WD S10/S15 vehicles were equipped with the TH200C transmission (which is very light-duty), or 700R (60 degree bolt pattern) transmission. If you want to retain an automatic overdrive transmission, you have two suitable choices: the 700R (90 degree bolt pattern) transmission from a full-size GM vehicle or the 4L60E computer controlled transmission. There will be no modifications necessary to the transmission case in order for it to fit into your vehicle. The overall length of these transmissions will be exactly the same as the original transmission. The 4L60E transmission will require a reluctor ring and sensor which is normally located on the tailhousing.

#### TH400 PREPARATION:

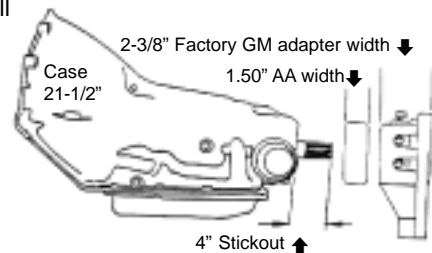
The TH400 into the 2WD S10/S15 will require the use of the original TH400 rubber crossmember support. Slight modifications to your existing crossmember may be required. If you are replacing the 700R automatic transmission, you will need to change the shift indicator and rework your existing shift linkage. If you are replacing a TH200C transmission, no modifications to the shift indicator will be required. If you are replacing a manual transmission, then you will need to install a cable-type floor shifter. Most TH400 conversions will require extensive floor pan modifications on 2WD installations. The TH400 output shaft has 32 splines and will **NOT** be compatible with your existing driveline. Approximately 2" of driveshaft modifications will be required.



## 4WD INSTALLATIONS

### TH350 PREPARATION:

When installing a TH350 into your 4WD S10/S15, there are several parts that you will need. The transmission will need to be equipped with an adapter kit. Our kit is furnished with a modified output shaft and a spacer plate that is 1-1/2" thick. You will be required to remove the ears on the transmission as illustrated in the GM Automatic Transmission section of this manual. This added clearance will allow for frame and exhaust clearance. When replacing a 700R transmission, you will need to install a new shift indicator and rework your existing shift linkage. The overall length of the TH350, adapter housing, and GM adapter will be equal in length to your original transmission so that driveshaft modifications will not be required. You will need to purchase two additional parts from your GM dealer, if you are replacing a 4 or 5 speed transmission.



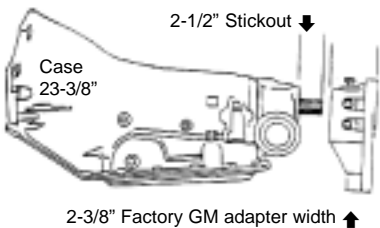
- AA P/N 50-8500** - TH350 to S10/S15 NP207 transfer case adapter kit
- P/N 15681328 - \*GM Adapter Plate
- P/N 14049551 - \*GM Shifter Bracket
- P/N 25053892 - GM Shift Indicator
- P/N 3973000 - GM Kickdown Cable Bracket

*Items with "\*" are only required when replacing a manual transmission.*

*The special output shaft supplied with our transfer case kit is a stock TH350 output shaft that has been modified in the splined area. We have provided a spline relief that will permit the new shaft to engage into the transfer case female splines. Any attempt to use the original TH350 shaft that has not been modified could result in pre-loading the input bearing and output shaft of the 4WD assembly.*

### 700R-4 & 4L60E PREPARATION:

If your vehicle was originally equipped with a 700R (60 degree) transmission, you will need to change the transmission to a 700R or 4L60E from a full-size GM vehicle. In the full-size Chevy trucks and Blazers, these transmissions were used with a V8 engine. The smaller S10/S15 700R transmission has an identical main shaft and rear bolt pattern as the full size 4WD transmissions. You will have to retain the stock S10 transfer case adapter. On the 4L60E transmission, you will require a reluctor ring and sensor to operate this transmission properly. This sensor and reluctor ring can be obtained from *Stealth Conversions*, Tel# (925) 462-3619.



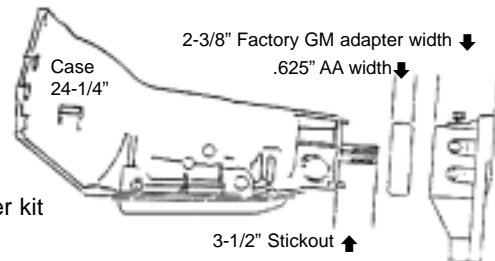
If you wish to retain your stock 700R-4 transmission and couple it up to in your new V8, you can simply have your internal parts exchanged into the larger case (V8 700R or 90 degree bolt pattern 700R).

Check with your local transmission shop for the lockup converter requirements of your 700R-4. Driveshaft modifications will not be required when reusing the new V8 case.

### TH400 PREPARATION:

We offer a kit for the installation of the TH400 into your S10/S15 using your stock transfer case. This kit will require driveshaft modifications and the installation of a new output shaft into the TH400 transmission. You will also be required to install a new shift indicator and rework your existing shift linkage if you are replacing an automatic transmission.

If you are replacing a manual transmission, then you will need to install a new floor shifter. The assembled length of the TH400 adapter will be slightly longer than the original transmission assembly. Listed below are the parts necessary for your installation.



- AA P/N 50-8501** - TH400 to S10/S15 NP207 transfer case adapter kit
- P/N 15681328 - \*GM Adapter Plate
- P/N 14049551 - \*GM Shifter Bracket
- P/N 25053892 - GM Shift Indicator
- P/N 3973000 - GM Kickdown Cable Bracket

*Items with "\*" are only required when replacing a manual transmission.*

# MANUAL TRANSMISSION INSTALLATIONS

## (T4, T5 & Muncie 4-speed)

The Borg Warner T4 & T5 transmissions have been available in the S10 since their inception. These transmissions are somewhat reliable for engines that produce less than 225 ft./lbs. torque. They offer ease of shifting and overdrive capabilities. Most people prefer to replace these transmissions with an automatic. However, we have found that when using them behind a V6 or V8, they will withstand the increase in torque and horsepower. These transmissions utilize a standard corporate GM bolt pattern on the face of the transmission. The input shaft of the transmission has a special spline size of 1"-14.

### 2WD INSTALLATIONS

When using the T4 or T5 transmission in a 2WD S10/S15, you must be converting a 1984 or newer vehicle. If your vehicle is a 1982 or 1983, then you will have to convert to an automatic transmission due to the clutch linkage that was used in these earlier vehicles. When converting a 1984 or newer, you will have the same requirements as listed in the 4WD paragraphs. You will also need to shorten the input shaft 9/16" as per the illustration below, as well as shorten the bearing retainer 1-1/4". This prevents the retainer from bottoming out into the pressure plate.

There are various types of manual transmissions that can be used with these same bellhousing requirements. The Muncie, Saginaw, and Super T10 transmissions can all be easily used on 2WD installations. The crossmember transmission support may need modifications to accommodate these various manual transmissions.

### 4WD INSTALLATIONS

When using this transmission in conjunction with the V6 or V8 engine, you will need to make a couple of modifications to the transmission. The first modification is to remove the bearing retainer and shorten it 1". This prevents the retainer from bottoming out into the pressure plate. You may also need to shorten the tip of the input shaft slightly to avoid it bottoming out into the crank. The clutch disc, [P/N 716102](#), will provide the proper engagement of the clutch disc hub with the input shaft on the transmission. The T5 used with the late model Camaros, also use the same 1"-14 clutch disc size. If you attempt to use the Camaro disc, you should be careful and inspect the disc and input shaft spline for proper clearance. It may be necessary to modify the length of the clutch hub in order for it to be compatible with the T5 transmission. **DO NOT USE** the Astro Van 11" disc.

The new bellhousing will have a bolt pattern that will be identical to the T4 and T5 transmissions. The manual transmission conversion **SHOULD NOT** be used on 1983 4WD vehicles. These vehicles were equipped with a cable-operated clutch system that is very expensive to convert to the newer hydraulic system. Therefore, if you have a 1982-83 vehicle, you will need to convert to an automatic transmission. If your vehicle is a 1984 or newer, the modifications to your transmission and parts will facilitate a trouble-free installation.

In order for you to bolt your original manual transmission to the Chevy engine, you will need to purchase a new bellhousing assembly, [P/N 712547](#). This bellhousing uses a internal hydraulic slave cylinder. The indexing diameter of the new bellhousing is 4.686".

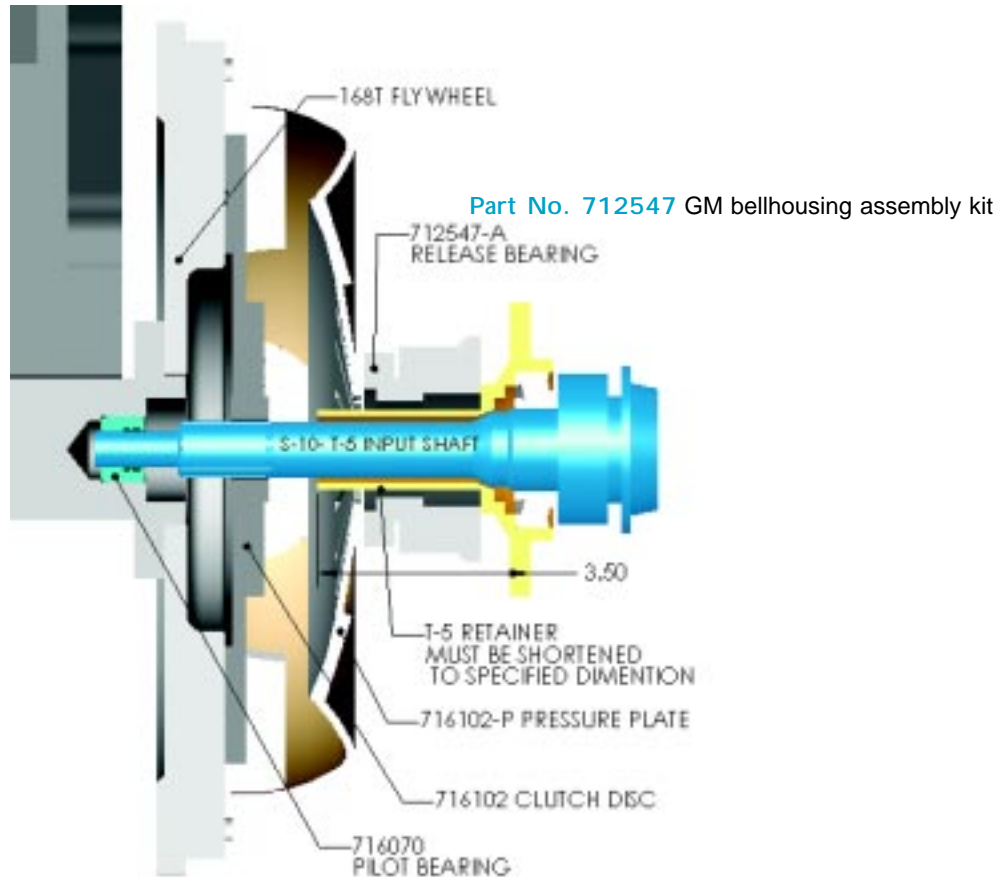
- [P/N 712547](#) - GM bellhousing assembly kit
- [P/N 716102-P](#) - 11" Pressure Plate
- [P/N 716102](#) - 11" Clutch Disc



Stock 2.8 T5  
bellhousing



**NOTE:** The master cylinder was changed on 1996 & later S10/S15 vehicles. The master cylinder no longer had a threaded fitting that would fit the hose provided in the 712547 bellhousing kit. If your vehicle is equipped with a master cylinder that used a roll pin, we do offer some fitting that can adapt the pin fitting to a dash 3.



## SWAP LAWS

At the printing of this manual, these were some of the current requirements when performing a smog legal engine swap. Please check with your State Bureau of Automotive Repair, the Environmental Protection Agency, or Department of Motor Vehicles before starting your conversion. This information is to help assist you. Advance Adapters cannot be held responsible for any changes that occur in these laws, and/or that are not listed.

Swapping a V8 engine into a compact truck is a great way to gain performance and put a lot of fun into everyday driving. However, you may not be driving your V8-powered truck at all if you can't pass the government's smog inspection. Fortunately, the toughest smog laws in the nation (California's) are straightforward and fairly easy to follow. The following is a synopsis of California's regulations regarding engine swaps:

1. The engine to be installed must be the same model year (or newer) as the vehicle it's being installed in. For example, a '92 engine can be installed into an '89 truck, but not into a '94 truck.
2. A car engine can be installed in a truck.
3. All engines (for any year) must have their emissions controls in place and functional.
4. A federally certified (49-state) engine cannot be installed into a California-certified vehicle.
5. No internal or external performance parts may be used on any engine unless they are EPA-certified or Air Resource Board -exempted.
6. All vehicles must pass a visual, functional, and tailpipe-emissions test.

Of course there's more to getting a V8 swap approved than those six rules, but it's not as difficult as it used to be. For the most *complete* information contact your state's Bureau of Automotive Repair, the Environmental Protection Agency, or the Department of Motor Vehicles for guidance and regulations regarding legal engine swaps.





## 2WD CONVERSION PARTS

### FOR S10/S15 V8 & 4.3 V6 CONVERSIONS



The parts listed on this section are compatible with all 2WD S10/S15 V8 & 4.3 V6 conversions. **Refer to the General Conversion Information Section of this manual for additional conversion considerations.**

### MOTOR MOUNTS:

We manufacture bolt-in motor mounts for the early S10/S15 2WDs. They work in conjunction with the stock 2.8L frame mounts. If your vehicle was equipped with a 4 cylinder, it is necessary that you purchase and install a set of stock 2.8L V6 frame mounts, *GM Part No. 22188284*. On 1990 & newer 4 cylinder applications, you will need to purchase a set of 4.3L mounts (both frame & rubber mounts): *GM# 22188970* (rubber), *GM# 15602789* (left steel mount), *GM# 156674856* (right steel mount), and used in conjunction with our mounts [P/N 713123](#).



P/N 713111

On 2WD S10/S15 blazers replacing the 2.8L, the stock motor mount perches were 1" higher than most S10/S15 pickups. To compensate for this higher stock engine location, use the drilled hole in the mounts rather than the slot. If you select a lower position on a vehicle that was not equipped with this 1" higher perch, you will have starter motor clearance problems. Modifications to the crossmember may be required; or simply using the small diameter hi-torque starter will offer the necessary clearance. If your vehicle is a later model S10/S15 that came equipped with a 4.3 V6 and you are planning to upgrade to a V8, we manufacture a bolt-on mount for this installation.



P/N 713119

- [P/N 713111](#) - Chevy V8 to 2.8L stock frame mounts
- [P/N 713119](#) - Chevy 4.3 V6 to 2.8L stock frame mounts
- [P/N 713123](#) - Chevy V8 to stock 4.3 V6 motor mounts (used also on Astro Vans)

These motor mounts listed above are slotted for fine-tune adjustments. On vehicles retaining the air conditioning, the engine must be set to the furthest rear position available on the motor mount. When this is done, clearance on the A.C. evaporator housing becomes crucial on the passenger side exhaust manifold. We manufacture a sheet metal cover that will allow ample clearance between the manifold and housing. ([P/N 716421](#))

### OIL PAN:

These conversions are compatible with most stock GM oil pans and will not require our special rear sump oil pan.

### HEADERS:

For 2WD conversions, you will be able to use either the "SlickFit" headers or stock GM manifolds. We manufacture two types of 2WD exhaust headers. The 2WD "SlickFit" headers are furnished with both sides dropping downward and will permit clearance of the A/C evaporator housing on the passenger side. The exhaust will run directly above the A-arm assembly so that modifications will not be required. The 717052 driver's side header also drops down and allows clearance for the steering driveshaft. The 717057 driver's side header has two primary tubes that go over the steering shaft and two that go under. *Our SlickFit headers will not work with Trans-Dapt or Hooker Header motor mounts. Headers are not compatible with lowered engine positions. NOTE: Our headers are not designed to fit Chevy small blocks with angle port heads.*



P/N 717057

**DO NOT USE any type of header wrapping material on the SlickFit header or you will void the warranty.**



P/N 717052

Our headers are manufactured with a 5/16" header flange and 16 gauge tubing. Both types of headers use a slip-type exhaust connection which aids in additional clearance when exiting from the engine compartment. These headers are available in Chrome or Non-plated (NP). (We do not offer headers for the 4.3 V6 application.)

- [P/N 717052](#) - SlickFit headers, Chevy V8 2WD (manifold style)
- [\\*P/N 717057](#) - SlickFit headers, Chevy V8 2WD (tubular style)

*\*(Should not be used on 1982 & 1983 vehicles)*

The GM manifolds that we recommend are designed for engines with the dipstick on the passenger side of the vehicle. The manifolds should be limited to engines 1978 & newer that have the special bolt pattern on the back exhaust port. The manifold numbers are GM Part No. 14007400 & 14014500. Also, 1982 & newer Camaros use exhaust manifolds #10108437 (right) & #10106123 (left).

## 2WD ENGINE CROSSMEMBER MODIFICATIONS:

On 2WD conversions that are using the stock exhaust manifolds, it may be necessary to modify the back side of the engine crossmember mount in order to allow access for the vertical exhaust dump from the stock manifold. This modification is only required on the driver's side of the vehicle. The engine mounts are adjustable so that the engine can be slid back for maximum clearance. These modifications could be made by the muffler shop if necessary.

## RADIATORS:

We offer an aluminum single core radiator and a 2-core Aluminum radiator. Both these options work well with a larger engine into these vehicles. These radiators are equipped with the proper hose connections and built-in transmission coolers.

**P/N 716686** - Aluminum single row S10/S15 radiator (*when replacing the 4 cyl. or 2.8L*)

**P/N 716694-AA** - Rad-A-Kool Aluminum 2 core tig welded radiator (1982-93 w/ automatic transmission)

## FLYWHEEL & FLEXPATE:

When using an automatic transmission, we recommend that you use a 168 tooth flexplate. In both applications, make sure that you do not obtain these parts from a Chevy small block 400 that was externally balanced. Obtaining the wrong parts will cause severe vibration in the drivetrain. Make sure that your flywheel is compatible with your engine selection.



In manual transmission conversions, you can use either the 153T or 168T flywheel. For more information, refer to the Transmission subheading in the General Information section of this manual.

## MANUAL TRANSMISSION BELLHOUSING REQUIREMENTS:

If you are using a manual transmission, you will need to use our bellhousing kit. This bellhousing is the only proven method of adapting your manual transmission to the new V6 or V8 engine. Our kit comes complete with a internal release bearing, pilot bushing, and hardware. The manual transmission conversions are **NOT** compatible with vehicles 1982-83 that are equipped with cable clutch controls. We highly recommend our 11" pressure plate with this bellhousing; and the 11", 1"-14 spline clutch disc is required.

**P/N 712547** - GM bellhousing kit

**P/N 716102-P** - 11" Pressure plate

**P/N 716102** - 11" Clutch Disc

## TORQUE CONVERTER INFORMATION:

If you are converting to an automatic transmission, any GM stock torque converter will work with your TH350. If you are using a 700R-4, you will be required to purchase an aftermarket lockup converter kit. We offer a lockup bypass for the 700R transmission.

**P/N 24-700R** - 700R Lockup Bypass Kit

## TRANSMISSION CROSSMEMBER:

Your transmission crossmember will remain in the stock location. However, you will need to elongate the holes in the transmission mount in order for them to reach the new TH350 motor mount location. On some crossmembers, the location can be adjusted along the frame rails for final positioning.

## DRIVESHAFT MODIFICATIONS:

If you are using a TH350 transmission with a 9" tailhousing, you can usually eliminate any driveshaft modifications when doing this conversion. If you are using a standard 4 or 5 speed or 700R-4 automatic, no driveshaft modifications should be required. However, if you locate the engine further back towards the firewall you may need to shorten your driveline approximately 1". Driveline requirements may vary depending on various TH350 tail housings and transmissions being replaced.

# 2WD Installation Photos



Transmission ear should be removed to aid in exhaust clearance. (This transmission has not be modified).



Distributor clearance off the firewall using 713111 mounts.



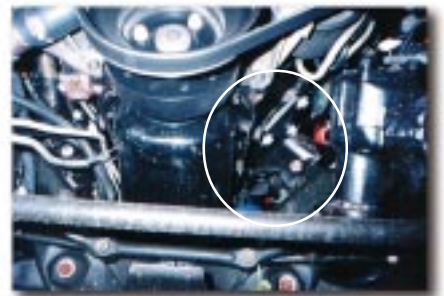
717052 Passenger Side header. Firewall-to-floorboard seam must be bent over for exhaust clearance.



717052 Passenger side header / A-arm clearance.



713111 motor mounts installed using the stock V6 rubber mounts.



713123 motor mount installed



A 2000 S10 conversion





## 4WD CONVERSION PARTS

### FOR S10/S15 V8 & 4.3 V6 CONVERSIONS



The parts listed on this section are compatible with all 4WD S10/S15 V8 & 4.3 V6 conversions. **Refer to the General Conversion Information Section of this manual for additional conversion considerations.**

### MOTOR MOUNTS:

We manufacture bolt-in motor mounts for the early S10/S15 4WDs. They work in conjunction with the stock 2.8L frame mounts. If your vehicle was equipped with a 4 cylinder, it is necessary that you purchase and install a set of stock 2.8L V6 frame mounts, *GM Part No. 22188284*. On 1990 & newer 4 cylinder applications, you will need to purchase a set of 4.3L mounts (both frame & rubber mounts): *GM# 22188970* (rubber), *GM# 15602789* (left steel mount), *GM# 156674856* (right steel mount), and used in conjunction with our mounts [P/N 713123](#)



P/N 713107

- [P/N 713107](#) - Chevy V8 to 2.8L stock frame mounts
- [P/N 713118](#) - Chevy 4.3 V6 to 2.8L stock frame mounts
- [P/N 713123](#) - Chevy V8 to stock 4.3 V6 motor mounts



P/N 713118

These motor mounts listed above are slotted for fine-tune adjustments. On vehicles retaining the air conditioning, the engine must be set to the furthest rear position available on the motor mount. When this is done, clearance on the A.C. evaporator housing becomes crucial on the passenger side exhaust manifold. We manufacture a sheet metal cover that will allow ample clearance between the manifold and housing. ([P/N 716421](#))

### OIL PANS:

When converting to a Chevy V8, 4WD applications require a special rear sump oil pan. Our oil pan comes complete with a new pickup tube and screen to help with the installation. ***Do not attempt to reuse your original V6 pickup tube.*** Once the new oil pan has been installed, you will be required to modify the dipstick by re-calibrating the volume of the new oil pan. These modifications should be made with 5 quarts of oil in the black powder-coated pan, and 6 quarts of oil in the gold-colored pan. These volume measurements will allow for the 1 quart volume required for the filter.

The oil dipstick will be need to be re-calibrated to read properly. Once the oil has been added to the new pan, you'll need to start the engine to circulate the oil. Once the oil has been circulated, insert the dipstick into the pan. Most dipsticks will require shortening in order to fit into the pan. Once the dipstick is fully inserted, remove it and locate the oil level. This is the ideal oil level for your new pan and it should be marked on the dipstick as a reference level. We also recommend that you verify this depth after the engine had been filled to the proper oil level. Make sure that you measure the location of the pickup screen in conjunction with the new oil pan. The screen should be approximately 1/2" above the floor of the pan.

If the equipment is available, you can manufacture your own modified oil pan by removing the lower portion of the 2.8 V6 pan and welding it to the upper portion of the Chevy V8 pan. Be sure and test the oil pan for possible leaks prior to assembly. The oil pickup tube used on the V8 engine is the same as the oil pickup tube used on the 2.8 V6 engine.

**On Chevy 4.3 V6 engine conversions replacing the 2.8 V6, you will need to use the stock GM oil pan used on S10 4WD vehicles. These vehicles were introduced in 1989. This new oil pan will not be compatible with 4.3 engines prior to 1986.**

Depending on the year and style of the block, we manufacture three different oil pans for the Chevy V8s. All pans come with a new pickup screen and oil plug. *The 1986 & newer pans will work on LT1 & LT4 engines, but the pickup screen will not fit the LT1 & LT4 oil pump and our pans do not offer oil level sensor provisions. These pans do not work on LS1 engines.*

- Modified Oil Pans:**
- [P/N 716410](#) - 1985 & earlier Chevy block, driver's side dipstick (shown)
  - [P/N 716411](#) - 1985 & earlier Chevy block, passenger side dipstick
  - [P/N 716420](#) - 1986 & up Chevy block, 1 piece rear main seal



## OIL FILTER ADAPTER:

When installing a V8 into the 4WD S10, you will be required to use a remote oil filter adapter. This is needed because the front driveshaft comes up on the driver's side of the vehicle and is in the same location as your oil filter. We have a remote oil filter adapter available, or you may purchase it from your local auto parts store. Our kits come complete with all of the necessary high-pressure hoses and fittings.

- P/N 716083 - Chevy V8 oil filter adapter  
 P/N 716085 - Chevy 4.3 V6 oil filter adapter (shown)



## HEADERS:

We manufacture two types of exhaust headers. The 4WD "SlickFit" headers are furnished with the passenger side extending upward and the driver's side dropping downward. With the passenger side extending upward, you will be able to eliminate the modifications required for the front shock tower. If you are not using a body lift, you will need to make modifications to the A/C evaporator housing. Most 4WD vehicles that are equipped with body lifts will not require any modifications.

*Our SlickFit headers will not work with Trans-Dapt or Hooker Header motor mounts. NOTE: Our headers are not designed to fit Chevy small blocks with angle port heads.*

*DO NOT USE any type of header wrapping material on the SlickFit header or you will void the warranty.*

Our headers are manufactured with a 5/16" header flange and 16 gauge tubing. Both types of headers use a slip-type exhaust connection which aids in additional clearance when exiting from the engine compartment. These headers are available in Chrome or Non-plated (NP). (We do not offer headers for the 4.3 V6 application.)

- P/N 717053 - SlickFit headers, Chevy V8 (manifold style)

P/N 717053 headers will provide excellent steering shaft clearance, and on the passenger side eliminate the need for shock tower relocation. However, the header design is not symmetrical from side-to-side. You will notice from the illustration that the passenger side header angles above the ports, while the header on the driver's side angles below the ports.



## RADIATORS:

We offer an aluminum single core radiator and a 2-core Aluminum radiator. Both these options work well with a larger engine into these vehicles. These radiators are equipped with the proper hose connections and built-in transmission coolers.

- P/N 716686 - Aluminum single row S10/S15 radiator (when replacing the 4 cyl. or 2.8L)  
 P/N 716694-AA - Rad-A-Kool Aluminum 2 core tig welded radiator (1982-93 w/ automatic transmission)



## FLYWHEEL & FLEXPLATE:

When using an automatic transmission, we recommend that you use a 168 tooth flexplate. In both applications, make sure that you do not obtain these parts from a Chevy small block 400 that was externally balanced. Obtaining the wrong parts will cause severe vibration in the drivetrain. Make sure that your flywheel is compatible with your engine selection.

In manual transmission conversions, you can use either the 153T or 168T flywheel. For more information, refer to the Transmission subheading in the General Information section of this manual.

- P/N 716102-P 11" Pressure Plate  
 P/N 716102 10-1/2" Clutch Disc

*We highly recommend the use of these clutch components. Failure to do so could result in improper clutch disengagement.*

## MANUAL TRANSMISSION BELLHOUSING REQUIREMENTS:

If you are using a manual transmission, you will need to use our bellhousing kit. This bellhousing is the only proven method of adapting your manual transmission to the new V6 or V8 engine. Our kit comes complete with an internal release bearing, pilot bushing, and hardware. The manual transmission conversions are **NOT** compatible with vehicles 1982-83 that are equipped with cable clutch controls. We highly recommend our 11" pressure plate with this bellhousing; and the 11", 1"-14 spline clutch disc is required.

- P/N 712547 - GM bellhousing kit
- P/N 716102-P - 11" Pressure plate
- P/N 716102 - 11" Clutch Disc

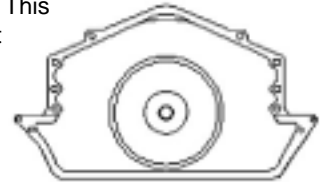
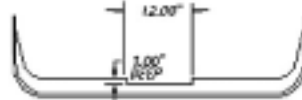
## TORQUE CONVERTER INFORMATION:

If you are converting to an automatic transmission, any GM stock torque converter will work with your TH350. If you are using a 700R, you will be required to purchase an aftermarket lockup converter kit. We offer a lockup bypass kit.

- P/N 24-700R - 700R Lockup Bypass Kit

## MIDDLE CROSSMEMBER MODIFICATIONS:

This crossmember is only found on 4WD S10 vehicles. This crossmember is directly beneath the transmission bellhousing area. This crossmember will need to be modified by removing a section that is 12" wide and 1" deep. This crossmember is an integral part of your S10 structure and must be retained. You will also notice that your brake line is attached to this crossmember.



## DRIVESHAFT MODIFICATIONS:

When installing the V8 there will not be any driveshaft modifications required. The back of the V8 engine block will be in the same location as the original V6 or 4 cylinder engine block. The new transmission should have the same overall length as the transmission being replaced.



## 4WD VACUUM SHIFT CONTROLS:

On 4WD models, you will find a vacuum shift controller that is used to engage the front axle assembly. Due to its awkward position, you will need to relocate it out of the way of the new V8 engine. This can be remounted underneath the battery tray area. Select a new routing for the cable, making sure you will have a smooth unobstructed movement. New holes may be necessary and a new vacuum line will need to be installed to the new location.

## AUTOMATIC TRANSFER CASE ADAPTER:

Our adapter kit for the TH350 comes with an output shaft and adapter housing to retain the stock transfer case in its original location. On vehicles that were previously equipped with a 5 speed, it is necessary to purchase the following GM items: GM# 14049551 (shifter bracket) and GM# 15681328 (stock adapter). More information regarding TH350s can be found in the Automatic Transmission section of this manual. The kit is also covered in more detail under the 4WD subheading in the Automatic Transmission Installation section of this manual.

- P/N 50-8500 - TH350 to stock S10/S15 NP207 & NP231 T/C



# FULL SIZE GM BLAZERS & GMC TRUCKS

We offer numerous adapters for GMC vehicles. Whatever transmission and/or transfer case combination you're looking for, whether it be upgrading a 4 speed manual to a 5 speed manual, or a 3 speed automatic to a 4 speed overdrive automatic, there is a good chance that we offer the necessary components to accommodate your needs.

The transfer case selection chart in this section lists all the possible adapter combinations; however, before you can select the proper adapter you'll need to properly identify your stock drivetrain and the new prospective drivetrain.

To identify your stock transmission or selecting a new transmission, we have provided two sections in this manual to assist you. In the front of this manual you will find a section helping you to identify the various automatic and manual GM transmissions. This section of the manual provides the years in which these transmissions were used along with the transmission gear ratios and transmission overall lengths. Some of the information provided on the transmission years or applications will overlap, which may require additional research on your part. Towards the back of the manual, we have also included a couple of magazine reprint articles dealing with transmission identification.

Once you have identified your transmission, you will then need to identify the stock transfer case and/or the new transfer case. If you are keeping the stock transfer case that your vehicle was equipped with and you have already identified the stock transmission, then identifying the transfer case should be easy. If you're swapping your transfer case with a different one, this could be a challenge. Whichever the case, you should read this section to guide you in the proper direction when identifying your transfer case.

Over the past 30 years, GM has offered numerous transmission and transfer case combinations. Some of these combinations have similar spline counts or bolt patterns - allowing the combination of a transmission to a transfer case that may have never been offered as stock. To add even more to the possibilities, the components that you are looking at using might have already been converted. The following information is put together with the best information we have on file. If you're application varies or you have something different, please call and let us know.

## SUMMARY:

The early GMs used a Dana 20 style transfer case and no adapters are available for these vehicles.

In 1971, New Process introduced a model NP203 (chain-driven), and NP205 (gear-driven) transfer case. Both of these transfer cases used various input splines. As a general rule, all of the transfer cases that couple to a TH350 automatic are normally a 27 spline input; when coupled to a manual transmission a 10 spline input; and when coupled to a TH400 a 32 spline input.

The NP203 was used from 1971 to 1979. This transfer case was mated to the TH350, TH400, and SM465 transmission.

The NP205 was used from 1971 to 1991. The 1971-79 NP205 was only found mated to the TH350 and the SM465 transmission. For 1-ton vehicles between 1979 to 1984/85, GM used a TH400 and the SM465. The TH400 was equipped with a female 32 spline input, while the SM465 retained the male 10 spline input. These model transfer cases had a figure-eight front bolt pattern. In 1985 to 1991 vehicles, GM started using a different version of the NP205. The input spline for both the TH400 and the SM465 transmissions was a female 32 spline, and the front bolt pattern changed to circular bolt pattern.

In 1981, GM introduced the NP208 chain-driven transfer case. The NP208 also has a circular bolt pattern, and had either a 27 or 32 spline input. In 1988, GM next introduced the NP241 chain-driven transfer case. This transfer case, as far as bolt patterns and splines are concerned, is identical to the NP208. The New Process transfer cases used both a right and left hand front drop on the transfer case. As a rule of thumb, all I.F.S trucks have a driver's side front drop on the transfer case.

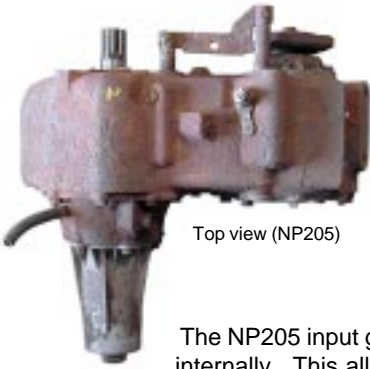
## NP205 TRANSFER CASE DETAIL IDENTIFICATION:

The New Process 205 is by far one of the best transfer cases ever built. This cast iron, all gear-driven transfer case is classified as being reliable and totally bulletproof. This gear box has been used not only in GM production line vehicles, but also Ford and Dodge production models. The NP205 is sometimes hard to identify. The data plate for this transfer case is located on the upper front of the case; but in many cases this information has been worn off, and subsequently a NP205 gets confused with a NP203 transfer case. The easiest way to identify the NP205 is by the rear 3 bolt cover on the idler shaft.

NP205 figure-8 bolt pattern



3 bolt cover found on NP205 transfer cases



Top view (NP205)

Once you know that you have a NP205 transfer case, the next thing is to identify the make (GM, Dodge or Ford). The casting numbers on these cases are of no help. The Ford transfer case is the easy one to identify since it is a left hand drop (front driveshaft on the driver's side). The Dodge and GM NP205s are a bit more difficult. The cases are identical, both having the figure-eight bolt pattern. Counting the front input gears are the easiest way to distinguish between the two. GM transfer cases use either a male 27 spline (TH350), a male 10 spline (SM465), or a female 32 spline (TH400) input gear. The Dodge NP205 was either a female 23 or male 29 spline input gear. The GM female 32 spline shafts were offered in two stickout lengths: 1979 to 1984/85 had a short stickout, while the 1985-91 had a long stickout. The 32 spline stickout is important to know when adapting to a different transmission.

The NP205 input gears, no matter what vintage or model, are always the same internally. This allows you to swap the input shaft between the various model transfer cases. One difference that must be taken into consideration is the front input shaft bearing. The male 10 & 27 spline GM transfer cases used a smaller bearing than the female 32 spline transfer case. The last thing that should be noted is the bolt pattern change that occurred on the case of the GM NP205 transfer case. In 1985, the case was changed from a figure-eight bolt pattern to a circular-six bolt pattern. This circular bolt pattern is identical to that of the NP208/241. The stock adapter housings that GM used are similar; however, the NP205 stock adapter housings have a notch in them for transfer case shifter linkage clearance.



TH350 to NP205 stock adapter



**NP205 originally coupled to a TH350:** This transfer case, used in vehicles between 1971-79, has a male 27 spline input. The bolt pattern is a figure-eight configuration.

**NP205 originally coupled to a SM465:** Used in vehicles 1971 to 1984/85, this transfer case has a male 10 spline input. The bolt pattern is a figure-eight configuration.

SM465 to NP205 stock adapter



32 spline NP205 input

SM465 coupler



**NP205 originally coupled to a TH400:** Used in 1979 to 1984/85 vehicles, this transfer case has a short stickout of 1.50", and a female 32 spline input. The bolt pattern is a figure-eight configuration. This transfer case uses a larger front bearing than the 10 and 27 spline transfer cases.

**NP205 originally coupled to a SM465 or TH400:** Found in 1985-91 vehicles, this transfer case has a long stickout of approximately 3.50", and a female 32 spline input. The bolt pattern is a circular-six configuration. This transfer case uses a larger front bearing than the 10 and 27 spline transfer cases. When using this transfer case, caution should be used with regards to the length of spline engagement. Transfer cases with this long stickout may require a spacer adapter [P/N 51-6910](#) or modifications to the transmission output shaft for proper spline engagement without pre-loading the transmission or transfer case bearings.



TH400 to circular-6 NP205 (with notch for shifter clearance)

### NP205 Stock Couplers (Power Sleeves):

As the ongoing aging process of GM NP205 transfer cases continues, so does the good availability of replacement part from the dealerships. The most recent GM components that started to become hard-to-find items are the power sleeves. We now offer both the stock GM 27 spline and the stock 10 spline. The 27 spline was offered in two designs: one that used a bearing support in the adapter housing, and one that floated on the transmission and transfer case splines. We only offer the later one which is centered by the splines. Our [P/N 52-9503](#) fits the 4WD TH350 transmission to the 27 spline NP205 transfer case, and [P/N 52-9504](#) fits the 10 spline SM465 transmission to the 10 spline NP205 transfer case.

### NP205 Conversion Couplers (Power Sleeves):

With the different transfer case inputs available, we offer a few conversion couplers. These couplers are designed to fit the 4WD TH350 transmission to a 10 spline NP205 transfer case. This coupler would use either the stock GM TH350 adapter housing or our 50-5302 casting. The other conversion coupler we offer fits the 10 spline SM465 transmission and couples it to a 27 spline NP205 transfer case. This coupler would use a stock SM465 adapter housing. Refer to the transfer case adapter chart for these part numbers.



## NP203 TRANSFER CASE DETAIL IDENTIFICATION:

The New Process 203 is a chain-driven transfer case. This cast iron transfer case is made up of 4 housings. This transfer case is a good, strong box except for the chain. This transfer case was used in production vehicles manufactured from GM, Dodge, and Ford. The Ford transfer case was normally a remote gear box. The GM and Dodge used an adapter to mount the NP203 directly to the stock transmission. Since the front of these transfer cases look the same, identifying the difference between the Dodge and GM transfer case without the stock adapter housing should only be done by counting the transfer case input splines. The GM versions include: a female 27 input spline (originally coupled to a TH350 transmission), a female 10 spline (originally coupled to a SM465 transmission), and a female 32 spline (originally coupled to a TH400 transmission) input gear. The adapters we offer for these transfer cases will normally require the use of your stock transfer case adapter.



Front of a NP203 T/C



SM465 to NP203 adapter

**NP203 originally coupled to a TH350:** This transfer case, used in 1971-79 vehicles, has a female 27 spline input.



**NP203 originally coupled to a SM465:** Used in vehicles 1971-79, this transfer case has a female 10 spline input.

**NP203 originally coupled to a TH400:** Found in vehicles 1973-77, this transfer case has a female 32 spline input.



TH350 & TH400 to NP203

## NP208/241 TRANSFER CASE DETAIL IDENTIFICATION:

The New Process 208 is a chain-driven transfer case. This is a cast aluminum transfer case. Compared to the NP203 and NP205, the light-weight cast aluminum housing of this transfer case is easier to handle. This transfer case is a good gear box with a low ratio of 2.61:1. The weakest part of this transfer case is that the shifter fork wears easily, causing shifting problems. This transfer case was used in production vehicles manufactured from GM, Dodge, and Ford. Identifying the GM version is done easiest by the round identification tag affixed to the case. This transfer case has a right hand drop configuration, is synchronized shifted, and has a rear slip yoke. The GM NP208s have either a female 27 tooth input spline (originally coupled to a 700R transmission)(\* see footnote), or a female 32 spline input (originally coupled to a SM465 or TH400 transmissions).

The New Process 241 is also a chain-driven transfer case. This is a cast aluminum transfer case. Compared to the NP203 and NP205, the light-weight cast aluminum housing of this transfer case is easier to handle. This transfer case is a good gear box with a low ratio of 2.71:1. Since this is the newest design of the New Process transfer case models, the weak links of this transfer case are few and far between. GM uses this transfer case in both right hand and left hand drop configurations. Even with these two configurations, the adapters we manufacture work the same since the bolt pattern on this transfer case is symmetrical. This transfer case is used in production vehicles manufactured from GM, Dodge, and Ford. Identifying the GM version is done easiest by the round identification tag affixed to the case. This transfer case is normally a right hand drop on vehicles with a solid front axle, and a left hand drop on vehicles with I.F.S. The GM NP241s have either a female 27 tooth input spline (originally coupled to a 700R or 4L60E transmission), or a female 32 spline input (originally coupled to a SM465, TH400, or 4L80E transmission).

Both of these transfer cases utilizes the same conversion adapters. One of the only areas of concern with these transfer cases is actually the crossmember support used by GM. Vehicles 1981-1984, used a crossmember with a drop; the stock adapter having a long foot to couple to this crossmember support. The 1985 & newer vehicles came with a crossmember that was tucked up tightly to the frame rails, thus requiring a short foot on the adapter housing. There are only a couple of our adapters that retain the stock adapter housing in which this will be of no concern. The adapter kits that supply a new adapter housing are all designed for the later crossmember support. If you are converting a 1981-84 vehicle, you may be required to fabricate a crossmember spacer or purchase a later model GM crossmember.

**NP208/241 originally coupled to a 700R/4L60E:** This transfer case, used in 1981-00 vehicles, has a female 27 spline input.

**NP208/241 originally coupled to a SM465/TH400/4L80E:** Used in vehicles 1971-81, this transfer case has a female 32 spline input.

\*Note: There were a few TH350 transmissions used in 1981 and 1982 GM vehicles. The stock adapter lengths may be different on these applications.



700R/4L60E to NP208/241 (short foot)



SM465 to NP208/241 (long foot)

SM465 to NP208/241 (short foot)



## Stock Replacement Adapters:

General Motors discontinues hundreds of parts every year. The 1970s, '80s, and '90 drivetrain parts are all but extinct. You can find some adapters in the salvage yards; however, most of them are damaged. Sometimes you get lucky and find an occasional housing in a parts house. The significance of all this is that stock adapter castings are hard to come by. With that in mind we decided to start re-manufacture replacement adapters for the GM drivetrains.

We currently manufacture 3 stock replace adapters for the older GM drivetrains.



P/N 50-5302

**P/N 51-3202** fits the GM TH400 automatic transmission to the figure eight NP205 transfer case.

**P/N 50-4705** fits the GM 4 speed SM465 transmission to the NP208/241 transfer case. This casting comes with a new transmission gasket and hardware.

**P/N 50-5302** fits the GM vehicles 1971-1979 that were equipped with a TH350 transmission and a New Process 205 transfer case. This housing is a direct replacement for the stock cast iron housing. The stock housing was subject to breakage on the foot of the casting. We have provided two new seals and gaskets for installation of this replacement adapter.

There are two styles of this casting used from GM. One used a bearing supported coupler sleeve, and the second used a coupler sleeve that was centered by the male splines of the transfer case and transmission. Our current production castings will accept either design of GM coupler.



P/N 51-3202



P/N 50-4705



Doubler adapter

## NP203 Doubler Adapters:

We now offer adapters to couple the NP203 to the NP205 transfer case. These kits have the ability to mate the reduction portion of the NP203 transfer case to the NP205 with up to a 2" rotation, making the NP205 level with the bottom of the NP203 case. Adapting the low range portion of the NP203 gives you an additional 2:1 ratio. Coupled with the stock transfer case, this will give you a 4:1 overall crawl ratio. These kits include a billet aluminum adapter, a new coupler shaft, the fastening hardware, and instructions. Call for applications and pricing.

## NP205 Twin Stick:

Our GM NP205 twin stick kit bolts directly to a GM NP205 transfer case (figure eight bolt pattern) that was mated to a GM TH350, TH400 or SM465. The shift handles will be approximately in the same location as the original shifter. The angle of the shift levers can be adjusted slightly by screwing the connecting heim joint in or out. You may be required to trim your floorboard if your vehicle has a suspension lift. This kit will allow you to run your transfer case in the following:

Rear wheel drive Hi, Rear wheel drive Low, Four wheel drive Hi, Four wheel drive Low & Neutral

*Three major benefits:* A more positive gear selection, allows rear wheel drive low range without any internal modifications, and eliminates all binding problems. **P/N 715595**




P/N 715595




## NP205 Rebuilt Transfer Cases:

We also offer the option of a rebuilt NP205 transfer case. These units are offered in most GM configurations and come with a 2 year or 24,000 mile warranty. Call for part numbers and pricing on these items.

# GM TRANSFER CASE ADAPTERS

	NP205 1971-79 27 SPL. MALE (ORIG. TH350) fig.8 pattern	NP205 1971-84/85 10 SPL. MALE (ORIG. SM465) fig.8 pattern	NP205 1979-84/85 32 SPL. FEMALE (1 TON TH400) fig.8 pattern	NP205 1985-91 32 SPL. FEMALE (SM465 & TH400) cir.6 pattern	NP208 & NP241 1981-00, 32 SPL. (ORIG. SM465) (TH400 & 4L80E) cir.6 pattern
GM NV4500 4WD 1993-2001 (12.375" CASE)	50-0218 (1) 7.875" ADAP. OR 50-0206 (1,2,6,11) 7.375" ADAP.	50-0217 (1,6) 7.375" ADAP. OR 50-0206 (1,2,6,11) 7.375" ADAP.	50-0206 (1,6) 7.375" ADAP.	STOCK ADAPTER with MODS. (13,14)	STOCK ADAPTER
GM MUNCIE (M21,M22)	50-3500 (10)	50-3400 (10)			
GM MUNCIE (SM465)	52-9502(7)	52-9504 (7)			
GM TH350 AUTOMATIC CASE LENGTH 21.5"	STOCK ADAP. or 50-5302	50-5301 (7A) or 50-5304 (7A)			50-7102 5.250" ADAP.
GM TH400 AUTOMATIC CASE LENGTH 24.25"	50-3200 (6,8) or 50-3202 (2)	50-3201 (6,8) or 50-3202 (2)	STOCK or 51-3202	50-7001 (9,13,14) 2.50" ADAP.	50-7001 2.50" ADAP.
GM 700R & 4L60 AUTO O.D. CASE LENGTH 23.375"	50-6900 (7A,8)	50-6903 (7A) or 50-6906 (7A)	50-6902 (8) 1.00" ADAP.	50-6901 (7,13,14) 1.00" ADAP.	50-6901 (8) 1.00" ADAP.
GM 4L60E AUTO O.D. CASE LENGTH 23.375" NOTE 5	50-6900 (8) STOCK ADAP.	50-6906 (7A) 3.50" ADAP.	50-6902 (8) 1.00" ADAP.	50-6901 (7,13,14) 1.00" ADAP.	50-6901 (8) 1.00" ADAP.
GM 4L60E REMOVABLE B.H. CASE LENGTH 22.00"	50-0405 (4) 1.50" ADAP.	50-0405 (4) 1.50" ADAP.	50-0405 (4) 1.50" ADAP.	50-0405 (4) 1.50" ADAP.	50-0405 (4) 1.50" ADAP.
GM 4L80E AUTOMATIC CASE LENGTH 26.00"	50-0410 (2) 4.00" ADAP.	50-0410 (2) 4.00" ADAP.	51-0410 4.00" ADAP.		

	NP203 1971-79 27 SPL. (ORIG. TH350)	NP203 1971-79 10 SPL. (ORIG. SM465)	NP203 1973-77 32 SPL. (TH400)	NP208 & NP241 1981-00, 27 SPL. (ORIG. 700R, 4L60, 4L60E)
GM MUNCIE (M21,M22)	50-3500 (10) 5" ADAP.	50-3400 (10) 4.5" ADAP.		
GM POWERGLIDE				50-9212 2.375" ADAP.
GM TH350 AUTOMATIC CASE LENGTH 21.5"	STOCK			50-7100 (3,8) 1.5" ADAP.
GM TH400 AUTOMATIC CASE LENGTH 24.25"	50-3200 (6,8) .590 ADAP.	50-3201 (6,8) .75"ADAP.&4.0"ADAP.		50-7000 2.50" ADAP.
GM 700R & 4L60 AUTO O.D. CASE LENGTH 23.375"	50-6900 (8) & STOCK TH350 ADAP.		50-6902 (8) 1.00" ADAP.	STOCK
GM 4L60E AUTO O.D. CASE LENGTH 23.375"	50-6900 (5,8) & STOCK TH350 ADAP.		50-6902 (5,8) 1.00" ADAP.	STOCK
GM 4L60E REMOVABLE B.H. CASE LENGTH 22.00"	50-0405 (4) 1.50" ADAP.		50-0405 (4) 1.50" ADAP.	STOCK

**NOTES:**

- (1) MUST SHORTEN STOCK OUTPUT SHAFT.
- (2) NEW T/C INPUT GEAR MUST BE INSTALLED(MACHINING REQ'D).
- (3) NO DRIVESHAFT MODIFICATIONS.
- (4) MUST ALSO ORDER A 4L60E ADAPTER.
- (5) THIS KIT REQUIRES A RELUCTOR KIT, P/N 716073.
- (6) KIT COMES WITH A T/C LINKAGE BRACKET.
- (7) THIS KIT REQUIRES A STOCK ADAPTER HOUSING FROM G.M.
- (7A) KIT REQUIRES EITHER A STOCK TH350 ADAP. OR OUR 50-5302 KIT.
- (8) THIS ADAPTER WORKS TOGETHER WITH YOUR STOCK ADAPTER.
- (9) KIT NOT NEEDED WHEN REPLACING A TH400.
- (10) 715501 SHIFT BRKT., 715625 OR 715626 ROD KIT & 715600 HURST SHIFTER IS NEEDED.
- (11) P/N 716038 MUST BE PURCHASED.
- (12) A 32 SPLINE INPUT GEAR IS REQUIRED.
- (13) THE ADAPTER HOUSING MAY NEED TO BE MODIFIED FOR THE TRANSFER CASE LINKAGE, OR A SPACER ADAPTER CAN BE USED, P/N 50-6910.
- (14) THIS ADAPTER IS DESIGNED FOR A SHORT NP205 INPUT GEAR. IF YOU HAVE THE LONGER INPUT STICKOUT, YOU MAY NEED TO REPLACE OR MODIFY THIS GEAR, OR USE OUR SPACER ADAPTER 50-6910.

## GM Full Size - Kit Information

**Part No. 50-0202 - GM NP203 to GM NV4500:** We've had numerous requests for a kit to couple a NV4500 to the NP203 transfer case. This kit is designed for the GM NV4500 4WD transmission only. The kit requires a Dodge 4WD stock tailhousing adapter, which is not included in the kit. We stock this tailhousing under [P/N 51-0205](#). By using the shorter Dodge tailhousing adapter we are able to use a pair of adapter plates to couple to the NP203 transfer case. The first plate bolts to the front of the NP203 transfer case. This 1" thick steel plate replaces the stock NP203 adapter and provides a strong support mount for this gear box. The second adapter is an 3/4" thick aluminum plate that provides the proper index and bolt pattern alignment. Since the NV4500 only has a 32 spline output shaft, the NP203 must be equipped with a 32 spline input gear. This gear can be purchased from your local GM dealership under [GM# 676240](#).

**Part No. 50-0206 - GM NP205 32 spl. to GM NV4500:** This adapter is engineered for the NP205 figure-eight bolt pattern with the 32 spline front input found in 1979-84/85 vehicles. This kit is designed to fit only the GM NV4500 4WD transmission. The kit comes with a new adapter tailhousing and an aluminum adapter plate. The adapter plate and housing have been modified to allow proper clearance for the NP205 transfer case linkage. The kit includes a linkage bracket to retain your stock transfer case shifter. We have also included a crossmember spacer to assist you in supporting this assembly. Modifications are required to the length of the transmission output shaft. This kit is the strongest way of coupling the NV4500 to a NP205 transfer case because of the shaft and bearing size. You can install this kit on the earlier NP205 transfer cases; however, a new input gear must be purchased ([P/N 716038](#)), and some machining will be required on the transfer case.

**Part No. 50-0217 - GM NP205 10 spl. to GM NV4500:** This adapter is engineered for the NP205 figure-eight bolt pattern with the 10 spline front input found in 1971-84/85 vehicles. This adapter is similar to the one above, as it uses the same adapter components; however, this kit includes a coupler shaft that couples the male 10 spline on the NP205 to the GM NV4500 4WD output shaft. The NV4500 output shaft must be shortened in length to properly couple these components. The kit includes a linkage bracket to retain your stock transfer case shifter. We have also included a crossmember spacer to assist you in supporting this assembly.



**Part No. 50-0218 - GM NP205 27 spl. to GM NV4500:** This adapter is engineered for the NP205 figure-eight bolt pattern with the 27 spline front input found in 1971-79 vehicles. This adapter is identical to P/N 50-0217, except we utilize a different coupler shaft to fit to the 27 spline male NP205 transfer case. The NV4500 output shaft must be shorten in length to properly couple to these components. The kit includes a linkage bracket to retain your stock transfer case shifter. We have also included a crossmember spacer to assist you in supporting this assembly.

**4L60E INFORMATION:** This transmission is identical to the 700R with the exception of the electronic controls. The adapters listed on the Transfer Case Selection chart for this transmission are identical for the ones listed for the 700R; however, a reluctor ring and sensor are mandatory to operate this transmission. These components are installed on the main case of the transmission and can be purchased from us under [P/N 716073](#).



**Part No. 50-0405:** In 1996, GM began producing a new version of electronically controlled transmissions called the 4L60E. This transmission is 21-1/2" long and has a removable bellhousing. The bolt pattern on the outside of the transmission is hexagonal, similar to the TH400 transmission. P/N 50-0405 takes the hexagonal bolt pattern and converts it to a square bolt pattern found on the 700R transmission. This kit comes with a clamp-on reluctor ring and sensor required for this transmission. With the new adapter bolted on the back of this transmission, the new overall length will be approximately the same as the 700R.

**Part No. 50-0410 - GM NP205 to GM 4L80E:** This adapter is designed to couple the 4L80E transmission to the NP205 figure-eight bolt pattern transfer case. The installation of a new 32 spline input gear as well as some machining on the transfer case will be required. This kit is designed around a special 2WD GM output shaft, [GM# 8661596](#) (for transmissions 1991-1996) or [GM# 24204289](#) (1997-1998 transmissions). This shaft protrudes approximately 5", and is fully splined. The adapter kit provides a new transfer case adapter housing that couples the NP205 to the 4L80E transmission. For this transmission to work properly, make sure it has both internal reluctor rings installed into the transmission. The 1997 & later 4WD transmissions did not come with the rear reluctor ring installed.

**Part No. 50-3200 - GM NP203/205 27 spl. to GM TH400:** This adapter was designed to couple the popular TH400 to the NP203/NP205 transfer case. It utilizes the factory NP203 or NP205 adapter housing that was previously used on the TH350 transmission. The kit requires the installation of a modified TH400 output shaft with 27 splines, which is included in the kit. The 3/4" steel adapter bolts to the TH400 transmission, allowing the stock adapter to then bolt up. This kit also includes a transfer case shifter linkage bracket to aid in the installation procedure.



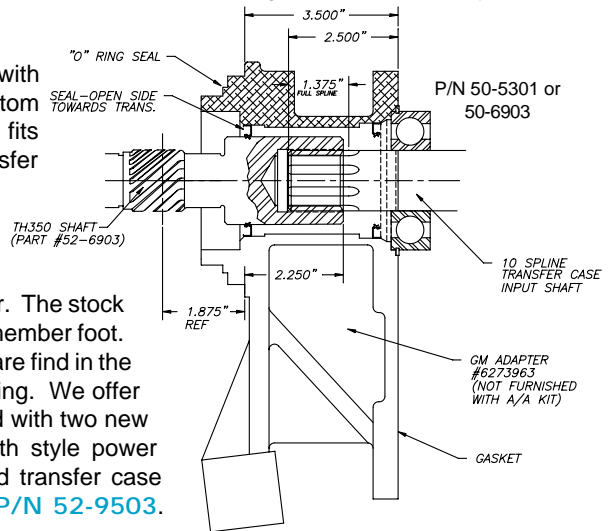
**Part No. 50-3201 - GM NP203/205 10 spl. to GM TH400:** This adapter was designed to couple the popular TH400 to the NP203/NP205 transfer case. It utilizes the factory NP203 or NP205 adapter housing that was previously used on the SM465 transmission. The kit requires the installation of a modified TH400 output shaft with 10 splines (included in the kit). The 3/4" aluminum adapter bolts to the TH400 transmission, allowing the stock adapter to then bolt up. This kit also includes a transfer case shifter linkage bracket to aid in the installation procedure.

**Part No. 50-3202 - GM NP205 to GM TH400:** This adapter was designed to couple the TH400 to the NP205 transfer case on heavy duty applications. This kit uses a stock 2WD TH400 output shaft with 32 splines. The 4" cast iron adapter housing bolts to the TH400 transmission and then to the figure-eight NP205 bolt pattern. This adapter requires the installation of a new 32 spline input gear (included in the kit), as well as some machining on the transfer case. The adapter housing has provisions for the stock transfer case shifter.

**Part No. 50-3400 - GM NP203/205 10 spl. to Muncie Car 4sp:** This adapter installs a Muncie Car 4 speed to the NP203 or NP205 transfer case, replacing a SM465 transmission. This kit works in conjunction with the stock New Process adapter. The kit includes a new main output shaft, adapter housing, bearing, seal & gaskets. The shifter linkage is sold separately.

**Part No. 50-3500 - GM NP203/205 27 spl. to Muncie Car 4sp:** This adapter installs a Muncie Car 4 speed to the NP203 or NP205 transfer case, replacing a TH350 transmission. This kit works in conjunction with the stock New Process adapter. The kit includes a new main output shaft, adapter housing, bearing, seal & gaskets. The shifter linkage is sold separately.

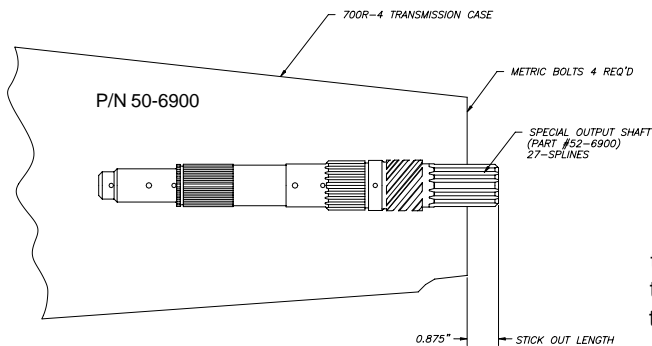
**Part No. 50-5301 - GM NP205 10 spl. to GM TH350:**  
 This adapter fits GM vehicles 1971-1984/85 that were previously equipped with a 4 speed transmission and a NP205 transfer case. This kit provides a custom output shaft that is equipped with a female 10 spline coupler. This shaft fits directly to the male 10 spline input gear protruding from the NP205 transfer case. We do not include an adapter housing in this kit since you use your stock GM TH350 casting, or you can use our [P/N 50-5302](#).



**Part No. 50-5302 - GM NP205 to GM TH350 CASTING:**  
 This is a replacement adapter for the stock cast iron adapter. The stock GM cast iron adapter had problems breaking on the crossmember foot. Since GM discontinued producing this casting, they are a rare find in the salvage yards. We decided to reproduce this stock housing. We offer it in a high tensile cast aluminum. Our housing is supplied with two new seals and gaskets. The housing can be used with both style power sleeves and retains the same crossmember location and transfer case shifter location. We also offer a new power sleeve under [P/N 52-9503](#).



**Part No. 50-5304 - GM NP205 to GM TH350:**  
 This is a newer kit we designed as a secondary option to kit 50-5301. This kit uses a custom power sleeve. It works in conjunction with a stock TH350 4WD output shaft and the stock NP205 10 spline input. This coupler would use either the stock GM TH350 adapter or our 50-5302 adapter housing. If you have a 4WD TH350 transmission, this kit is a quick and easy way of coupling these two GM components. This kit can be used on 2WD transmission with an added transmission output shaft, [52-1200](#).



**Part No. 50-6900 - GM NP203/205 27 spl. to 700R:** This adapter replaces the GM TH350 with the popular 700R automatic. This kit consists of a special output shaft that must be installed into your 700R transmission. Once installed, the output side of this transmission looks identical to the stock TH350 that you are replacing. Driveline modifications are required because the 700R is roughly 1-1/2" longer than the TH350. **Caution** should be used regarding front driveshaft clearances. We have found that some transfer cases used a large C.V. yoke assembly that may interfere with the 700R transmission pan. You may be required to replace your transfer case yoke & driveshaft assembly.

**Part No. 50-6901 - GM NP208/241 32 spl. to 700R:** The 1980-1988 GM trucks with a TH400 used a NP208 or NP241 transfer case having a 32 spline input gear. This adapter makes it possible to replace the 3 speed automatic with a 700R 4 speed overdrive transmission. The overall length of this new assembly is identical to the stock application. This adapter kit uses an adapter plate that couples to the stock New Process adapter housing. Also included is a 700R output shaft that we manufacture with 32 splines.

**Part No. 50-6902 - GM NP205 32 spl. to 700R:** This adapter fits the NP205 figure-eight transfer case that was originally coupled to a TH400 transmission in 1979-1984/85 vehicles. The kit comes with an adapter plate that bolts to the stock NP205 adapter housing. The new 32 spline 700R output shaft that is included in the kit must be installed in your transmission. Since the stock adapter housing is being retained, the stock transfer case linkage should bolt up without modifications.

**Part No. 50-6903 - GM NP205 10 spl. to GM 700R:** This adapter fits GM vehicles 1971-1984/85 that were previously equipped with a 4 speed transmission and NP205 transfer case. This kit provides a custom output shaft that is equipped with a female 10 spline coupler. This shaft fits directly to the male 10 spline input gear protruding from the NP205 transfer case. This kit uses a stock GM TH350 to NP205 adapter housing. If you do not have this adapter, we offer it under [P/N 50-5302](#). (Due to the output shaft configuration, this shaft should not be used in 4L60E transmissions. The 32 spline does not allow the installation of a reluctor ring for the transmission).

**Part No. 50-6906 - GM NP205 10 spl. to GM 700R / 4160E:** This adapter fits GM vehicles 1971-1984/85 that were previously equipped with a 4 speed transmission and NP205 transfer case. This kit provides a new output shaft and a custom power sleeve to couple these two GM components. On 4L60E transmissions, our reluctor kit 716073 fits nicely on the new output shaft. This kit uses a stock GM TH350 to NP205 adapter housing. If you do not have this adapter, we offer it under [P/N 50-5302](#).



**Part No. 50-7000 - GM NP208/241 27 spl. to GM TH400:** This adapter allows the installation of the heavy duty TH400 transmission where the 700R was previously. This adapter comes with a new 27 spline TH400 output shaft and custom adapter housing. The adapter housing is compatible with the GM stock crossmember on vehicles 1985 & newer. This kit uses the short foot on the adapter casting. On vehicles prior to 1985, the factory adapter had a longer support foot, making the crossmember hang lower off the frame rails. On these vehicles, you will either need to replace the crossmember to a newer style or fabricate a spacer between the original crossmember and new adapter housing. This kit also comes with a transmission dust cover and new transmission dipstick.

**Part No. 50-7001 - GM NP208/241 32 spl. to GM TH400:** GM used a light duty 4 speed called the 89mm transmission. This transmission was coupled to NP208 & NP241 transfer cases and seen mainly in half-ton vehicles. This kit replaces the 4 speed transmission with a GM TH400. The stock transfer case on this application has a 32 spline input. Our kit comes with a new 32 spline output shaft that must be installed in your TH400, and an adapter housing that couples the transmission to the transfer case.

**Part No. 50-7100 - GM NP208/241 27 spl. to GM TH350:** This kit is designed to replace the 700R transmission. The early 700Rs had some design weaknesses, causing problems with the proper operation of this transmission. Most people got tired of their truck in the repair shop fixing up the transmission; therefore, this kit allows the replacement of the 700R with a good reliable TH350 transmission. Although the 700R today has undergone many changes and is now considered a good, reliable transmission, this option still seems to be a popular replacement. The kit includes a new output shaft for the TH350 transmission, a spacer adapter, transmission dipstick tube, a new kickdown cable, and the necessary hardware. Since it is a direct replacement for the 700R transmission, no driveline modifications are required.



**Part No. 50-7102 - GM NP208/241 32 spl. to GM TH350:** GM used a light duty 4 speed called the 89mm transmission. This transmission was coupled to NP208 & NP241 transfer cases and seen mainly in half-ton vehicles. This kit replaces this 4 speed transmission with a GM TH350. The stock transfer case on this application has a 32 spline input. Our kit comes with a new 32 spline output shaft that must be installed in your TH350, and an adapter housing that couples the transmission to the transfer case. This kit also includes a transmission dipstick tube, new kickdown cable, and the necessary hardware.

**Part No. 50-9502 - GM NP205 27 spl. to GM SM465:** This is a new power sleeve that couples a 27 spline transfer case to the 10 spline SM465 transmission. This power sleeve uses the stock GM SM465 adapter housing.

**Part No. 50-9504 - GM NP205 10 spl. to GM SM465:** This is a new power sleeve that replaces the older worn out stock coupler. It couples a stock 10 spline transfer case to the 10 spline SM465 transmission. This power sleeve retains the stock GM SM465 adapter housing.

**Part No. 50-9212 - GM NP208/241 27 spl. to GM POWERGLIDE:** This new housing bolts this popular mud and sand drag transmission to a NP208 or NP241 27 spline transfer case. The kit only comes with an adapter housing and crossmember foot. The output shaft required for this kit is a custom, short style 27 spline available from companies like Hughes Performance or B&M.



**Part No. 50-6910 - GM NP205 circular 6 with Long Input Gear Spacer:** Some of the NP205 transfer cases used a long stickout input gear. Some of our adapters allow for this longer stickout; however, there are a few adapters or even a couple of stock adapters where you will experience shaft length interference problems. If you're experiencing a length problem, this spacer adapter is the easy fix. It allows clearance for the transfer case linkage on the front of the transfer case and gives you the necessary adapter length to avoid shaft interference.

## NV4500 BELLHOUSING ADAPTERS:

The bellhousing bolt pattern on the GM NV4500 transmission differs from the bolt pattern from the standard GM transmissions (old Muncie truck-type transmissions). From 1992-95, the GM NV4500s had their own specific bolt pattern. In 1996, GM started using the same case design as the Dodge NV4500 case. In addition to having the same bolt pattern, GM NV4500s now have an index diameter of 5.600". The GM NV4500s, however, use an internal hydraulic release bearing. When GM switched to this bearing assembly, they removed the snout from the front bearing retainer where a release bearing would ride. This assembly has no provisions for a conventional throw out bearing and release arm. *NOTE:* These bellhousings should not be used with a diesel motor due to starter clearance issues. With the different transmission configurations, you must make sure that the correct bellhousing and adapters are ordered. You will have four possible choices as to which bellhousing will be used with your Chevy V8 engine. The choices are as follows:



### *Choice #1 - Stock GM Bellhousing used in 1992-1995 GM trucks previously couple to a GM NV4500*

This bellhousing uses a special slave cylinder configuration that is located on the passenger side of the vehicle. Since the front driveshaft will not have sufficient clearance around the stock slave cylinder assembly, this bellhousing will not be compatible on GM 4WD vehicles up to 1987. This factory GM bellhousing can be ordered from us under [P/N 712580](#), and will include all of the necessary slave cylinder components. The clutch disc and pressure plate recommended are Centerforce components, [Part No. 383735](#) (clutch disc) and [P/N CF361877](#) (pressure plate).

### *Choice #2 - Stock GM Bellhousing used in 1996-2002 GM trucks previously couple to a GM NV4500*

This bellhousing uses a special internal design slave cylinder that bolts to the front retainer on the transmission. This factory GM bellhousing can be ordered from us under [P/N 712586](#), and will include all of the necessary slave cylinder components. The use of the stock GM clutch disc and pressure plate are recommended for this bellhousing.

### *Choice #3 - AA Bellhousing - P/N 712577*

For GM NV4500 transmissions 1992-95, we manufacture a new aluminum bellhousing with the proper bolt pattern and index diameter of 5.125". This bellhousing can be used with all Chevy 4.3 V6 and V8 engine conversions. The bellhousing is adaptable to both mechanical and hydraulic clutch controls and is furnished with a new clutch release arm and boot. The boot may need to be modified to provide the correct arm location. The bellhousing has the clutch release arm access on the driver's side of the vehicle. The advantage of this bellhousing over P/N 712580 (option #1) is that our bellhousing has provisions for most stock linkages (hydraulic or mechanical). The adaptability of these different linkages to our bellhousing makes the NV4500 to your Chevy block an easy adaptation.

### *Choice #4 - AA Bellhousing - P/N 712576*

For GM NV4500 (1996-2004), we manufacture a new aluminum bellhousing with the proper bolt pattern and 5.600" index diameter. This bellhousing can be used with all Chevy 4.3 V6 and V8 engine conversions. The bellhousing is adaptable to both mechanical and hydraulic clutch controls and is furnished with a new clutch release arm and boot. (The boot may need to be modified to provide the correct arm location). The bellhousing also comes with a bearing retainer snout that bolts to the front of the GM transmission. The bellhousing has the clutch access on the driver's side of the vehicle.

### *CLUTCH LINKAGE & COMPONENTS:*

The Advance Adapter bellhousings listed above are designed for an 11" flywheel and clutch assembly. To achieve proper release and clearances, our bellhousing was designed around the Centerforce clutch components. If clutch components from other manufacturers are used, we cannot guarantee proper clutch operation. The recommended clutch components are as follows:

<a href="#">P/N CF165552</a> - 11" pressure plate	<a href="#">P/N 715535</a> - Stock linkage bracket (hydraulic)
<a href="#">P/N 383735</a> - 11" clutch disc	<a href="#">P/N 716332</a> - Bellhousing boot
<a href="#">P/N N1430</a> - release bearing	<a href="#">P/N 715529</a> - NV4500 to NP205 T/C shifter bracket
<a href="#">P/N 715534</a> - Stock linkage bracket (mechanical)	<a href="#">P/N 716050C</a> - NV4500 shifter handle

## COMPLETE NV4500 PACKAGES:

The adapters we manufacture are designed for the *GM 4WD NV4500*. We offer complete adapter packages for the most common transmission swaps. If we do not show a transmission package specifically for your application, more than likely we offer the individual components to convert your vehicle. *The components in the packages that we do offer can also be purchased separately.*

We currently offer brand new, factory direct NV4500 transmissions. The GM 4WD NV4500 can be purchased under [P/N 26-0007](#).

- [P/N 27-0030](#) - GM 10 spline NP205 (figure-eight) transmission assembly. **Overall assembly length 26.250".**
- [P/N 27-0031](#) - GM 27 spline NP205 (figure-eight) transmission assembly. **O.A.L. 26.750".**
- [P/N 27-0032](#) - GM 32 spline NP205 (figure-eight) transmission assembly. **O.A.L. 26.250".**
- [P/N 27-0045](#) - GM 2WD 1971-85 transmission retrofit. **Driveline & Crossmember modifications necessary.**

# RANGER TORQUE SPLITTER

The Ranger Torque Splitter is an auxiliary gear box that bolts in front of the standard Chevy, Ford and Land Cruiser 4 speed transmissions. This fully synchronized unit allows you to split your gears at any time. The unit is available in either a 27% overdrive or a 17% underdrive.



The Ranger has been in production since the late 1960s, and Advance Adapters has been manufacturing the unit since 1976. Through the years it has gone through several design changes. Today's unit is cast aluminum, measuring 7-1/2". The gears are helical cut and the shifting mechanism is a short throw manual shift. The unit is built to handle 420 ft./lbs. of torque and has a G.V.W. rating of 25,000 lbs. This unit is ideal for towing applications or improving gas milage by lowering the RPMs.

The unit weighs 80 lbs. and is easily shipped via UPS. It has a 1 year unlimited mile warranty from the date of shipment. For more detailed information and a parts list, we can fax or mail you the Ranger installation Instruction Sheet (Ranger OD).

**CHEVY APPLICATION INFORMATION:**

- 760001M-27** - 1947-1966 Chevy Overdrive with a 4.686" index
- 760001M-UD** - 1947-1966 Chevy Underdrive with a 4.686" index
- 760002M-27** - 1967-1987 Chevy Overdrive with a 5.125" index
- 760002M-UD** - 1967-1987 Chevy Underdrive with a 5.125" index

*(Note: These units are for the Chevy 4 speed transmissions and will bolt directly to the 4 speed and bellhousing with only minor modifications. Driveline and floorboard modifications are required.)*

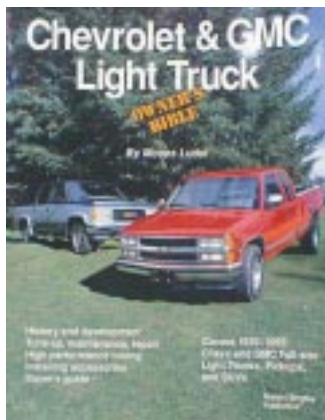


## CHEVY OWNERS BIBLE

by Moses Ludel

**Part# COB**

The Chevy Owners Bible is a great addition in educating yourself regarding your vehicle. The book is a hands-on guide to getting the most from your Full size vehicle.



High-performance modifications, accessories, vehicle history and tips you should know when buying a new or used vehicle are just a few of the many topics covered by the well known technical writer Moses Ludel. When ordering the Chevy Owners Bible, the Advance Adapters Chevy Instruction manual is included at no charge.

## Riser Blocks

**Part# 714101**

This is a 1-1/2" riser block for Chevy trucks. The blocks are cast iron and drilled with an alignment hole for positioning. No U-bolts are furnished. U-bolts can be obtain at your local dealership.



## Folding Steps

**Part# 716870**

This entry step was primarily designed for raised vehicles and provides easier accessibility into the cab. This step is spring loaded and folds downwards approximately 6", and upon release folds back upwards to avoid being knocked off when off-roading. The steps are polished aluminum and look great on most vehicles.

