

2WD & 4WD FORD BRONCO II, RANGER TRUCKS & EXPLORERS



Ford V8 engine conversions into Bronco IIs, Ranger pickups & Explorers have become very popular. Advance Adapters has been pioneering conversions for these vehicles for well over 15 years. We've strived to research every possible problem or difficulty you might encounter when converting your vehicle. The information covered in this section will assist you in selecting the proper conversion components. For detailed conversion installation procedures, we recommend you obtain our instruction manual FMC001.

The parts we manufacture are available for small block Ford V8s retrofitting stock engines. Because of the diversity of applications, we do **not** offer complete conversion packages. We have grouped the conversion components by application. 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.

GENERAL CONVERSION INFORMATION:

The Rangers & Bronco IIs were first introduced in 1983, and come stock with either a 2.8 V6 or 4 cylinder. They later came equipped with a 2.9L, 3.0L or 4.0L V6 engine. Ford used various transmissions. The manual transmissions consisted of the Toyo Koygo, Mitsubishi or Mazda. These transmissions are all light-duty 4 & 5 speeds. The automatics that Ford used were the C3, C5 and A4LD. The conversion components we manufacture fit all Bronco II & Rangers. Currently, engine conversions using our components have been performed on Ranger pickups as new as 1997.

In 1991, the Ford Explorer was introduced, retiring the Bronco II models. This vehicle came stock with a 4.0L V6, and the A4LD transmission. The adapters we manufacture fit Explorers 1991-94.

Many questions arise when considering any engine swap. Some of these questions include what year & size block to use, transmission choice, transfer case & axle strength, suspension requirements, body lift, cooling, exhaust, etc. A brief overview is covered in this section; however, these questions are covered in depth in the FMC001 instruction manual. This conversion manual is included with all engine mount kits.

Engine Selections: 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). The most recommended engine is the Ford 302. If your engine choice is a 351 Windsor, extra consideration should be given regarding exhaust clearance. A special oil pan must also be purchased.

Transmission Selections: On most of the stock Ford transmissions, we have listed a transmission identification code. This number is found on the driver's side door of your vehicle. This will help you identify the stock transmission equipped in your vehicle.

C4: The C4 automatic transmission is the most practical transmission to choose. It is durable and very easy to find. Due to design changes, we advise that you select a 1970 or newer C4. The C4 has a removable bellhousing, so make sure the bellhousing pattern is compatible with the new engine and flexplate. We recommend a 157 tooth flexplate. Be sure the starter motor engages the flexplate correctly with this bellhousing.

C5: The C5 was used in Ranger / Bronco II vehicles 1984-85. It has the same dimensions as the C4. If you have the C5, you simply need to change your bellhousing, torque converter, and valve body. This is to prevent having to bother with the computer module. Failure to change these parts will cause the torque converter to lock up.

C3: The C3 is identified by a "V" transmission code. The overall length of this transmission is 24". We do not offer any adapters to retain this transmission.

A4LD: The A4LD is identified by a "T" transmission code. The overall length of this transmission is 28.687". We do not offer any adapters to retain this transmission.

Toyo Koygo 4 speed: Transmission code "X", with an O.A.L. of 24". We offer a bellhousing adapter to retain this transmission.

Toyo Koygo 5 speed: Transmission code "5", with an O.A.L. of 25.937". We offer a bellhousing adapter to retain this transmission.

Mitsubishi 5 speed: Transmission code "D", with an O.A.L. of 28.687". We offer adapters to retain this transmission.

Mazda 5 speed: This transmission can normally be found in late model vehicles. The bellhousing and transmission are integral (one piece). We do not offer any adapters to retain this transmission.

For the 4WD vehicles, we also offer transfer case adapters for the AOD, T5 & Full size Ford 4WD transmissions.

Transfer Case: These Ford vehicles used a Borg Warner 1350 transfer case. This transfer case is a chain driven unit and is strong enough to handle the torque of a 302 engine. All of the transfer case adapters that we manufacture have the mounting bosses for the stock transfer case linkage. We now offer a transfer case upgrade. **The Atlas (found on Pages 32-33 & 47) has been designed to fit the Bronco II, Ranger & Explorer applications.**

Axle Strength: These vehicles were equipped with one of three different rear axles. Up to 1984, Ford used a 6.75 rear end, which would be marginal with the added torque. Vehicles 1985-89 had a 7.5 rear end, and 1990 & newer vehicles had a 8.8 rear end. These '85 and up axles are sufficient to handle the power of a V8.

Suspension Requirements: The installation of a V8 is about 175 lbs. heavier than stock. On 2WD applications, the suspension will normally drop about 1". We recommend using a heavy-duty shock which will compensate for this drop. On 4WD applications, the suspension is equipped to handle the extra weight. Once completing any one of these vehicles, the front alignment should be checked.

Body Lifts: A body lift is not required on both the 2WD & 4WD versions; however a body lift will provide additional tunnel, hood and heater/air conditioner plenum clearance.

Firewall Modifications: The body seam between the floorboard and firewall will normally need to be bent over. This is where a body lift will aid in clearance. In addition, the heater box on the passenger side will need to be trimmed and patched in order to clear the valve cover.



Cooling Requirements: The V6 radiator used from the factory on Bronco II & Rangers is not large enough to cool even the mildest V8 engine. We manufacture a 4 row brass radiator. This radiator comes complete with hoses and remote filler neck. We also carry an aluminum 2 core radiator with transmission cooler from **BE COOL**. Both of these radiators can be installed while retaining the air conditioning condenser in the stock location; but for the best fan clearance, the condenser can be moved forward and the radiator tucked under the grille. Both radiators fit 2WD and 4WD vehicles. See **Pages 24-25** for more information on **BE COOL** radiators.

P/N 716683 - 4 row brass radiator
P/N 716696 - 2 row aluminum BE COOL radiator

Exhaust: We offer headers for the Ford V8 on both the 2WD & 4WD applications. These headers are a conversion header designed to fit the 302 & 289 blocks in the engine compartment.

P/N 717044 - Ford small block header for Ranger / Bronco II (chrome)
P/N 717044-NP - Ford small block header for Ranger / Bronco II (non-plated)

Vehicles retaining smog equipment can use the stock manifolds off of a Maverick or Comet for the best fit. Some customers have used manifolds off of a 1996 and newer Ford Explorer.

Remote Oil Filter: Ford V8 installations on both 2WD & 4WDs require a special remote oil filter. Many of the oil relocation kits on the market have the lines coming straight out. These kits will not clear the steering sector on the chassis. We offer a special remote oil filter kit with lines coming out at a 90 degree angle. This kit comes complete with mounting brackets and hoses.

P/N 716084 - Ford remote filter adapter



Oil Pans: A special dual sump oil pan is required for all 2WD & 4WD conversions. This pan is normally found on 1983 & newer Mustang V8s. This pan will not fit the 351 Windsor block.

P/N 716412 - 302 oil pan and pick up tube

Fuel Pump: In most cases, a mechanical fuel pump will interfere with the steering box and frame rail. We offer an inverted mechanical fuel pump that clears these areas. On newer injected blocks, an in-line electric fuel pump should be used.

P/N 716052 - Mechanical inverted fuel pump

Average Installation Hours: The average conversion time on most vehicles is 40-50 hours.

2WD RANGERS & EXPLORERS:

We manufacture a bolt-in motor mounts for these vehicles. These mounts are designed to utilize the stock Ford crossmember and stock V8 rubber mounts. The Ford rubber mount is a common V8 support, but we offer them for your convenience. When installing a small block into the 2WD vehicles we recommend using either the C4 or AOD transmission. The newly redesigned 713015 mounts bolt to the stock frame hole and are slotted to customize the best engine location for your vehicle. The components listed on the previous page are items that will assist you in this engine swap.

P/N 713015 - Ford V8 adapter mounts for 2WD vehicles

P/N 713017 - Stock Ford rubber mounts

**4WD RANGERS, BRONCO IIs & EXPLORERS:**

MOTOR MOUNTS: We offer a one piece motor mount for installing the Ford V8. These mounts require that you drill two holes into your existing crossmember to secure the block. These rubber insulated mounts can then be bolted to the crossmember, and then the block set in. These mounts will place the engine high enough for oil pan clearance.

P/N 713018 - Ford V8 mounts for 4WD vehicles

STOCK MANUAL TRANSMISSIONS: On vehicles 1983-87 having a removable bellhousing, we manufacture an adapter plate that bolts to the stock transmission and allows the use of a standard Ford bellhousing. We recommend that you use a 1987 F150 truck bellhousing. This bellhousing is only available with a 164 tooth flywheel, which may cause tunnel clearance problems (a body lift is recommended). This bellhousing has an external slave cylinder that works well with the Bronco II / Ranger master cylinder.

Vehicles 1988 & newer used an integral bellhousing & transmission. We do not offer any adapters to retain this transmission.

P/N 712541 - 1983-88 stock transmission adapter plate to Ford V8 bellhousing

P/N CF260000 - Centerforce 11" pressure plate (bolts to flywheel with 3 sets of 2 bolts)

P/N CF360049 - Centerforce 11" pressure plate (bolts to flywheel with 6 bolts evenly spaced)

P/N 384070 - Centerforce 11" disc 1", 23 spline

P/N N1714 - Clutch release bearing

TRANSMISSION UPGRADES WITH V8 ENGINES: When installing a new transmission into these vehicles, we prefer to leave the stock transfer case in its original position. This alleviates driveline modifications and, in most cases, floorboard modifications. Ford used three different transmission assembly lengths between the manual & automatic transmissions mentioned earlier. Most of the adapters that we manufacture will give you three adapter options to directly replace your existing transmission. Some of the new transmission lengths are not exactly the same overall length, but the driveshaft and crossmember will normally compensate for this. We recommend that you measure your existing transmission assembly and compare this measurement to the adapters below. (Most transfer case adapters include an adapter housing and output shaft).

C4: The C4 is 17" long. Combined with the new adapter length, use the best adapter suited for your application.

P/N 50-8400 - C4 to Borg Warner 1350 T/C. Adapter length of 6.812" O.A.L. 23.812".

P/N 50-8401 - C4 to Borg Warner 1350 T/C. Adapter length of 11.5" O.A.L. 28.500".

P/N 50-8402 - C4 to Borg Warner 1350 T/C. Adapter length of 8.75" O.A.L. 25.750".



AOD: The AOD is 20-1/2" long. Combined with the new adapter length, use the best adapter suited for your application. There are early and late versions of this transmission, so please refer to **Page 68** for proper identification.

P/N 50-8403 - AOD (up to 1987) to Borg Warner 1350 T/C. Adapter length of 9" O.A.L. 29.500".

P/N 50-8404 - AOD (1988 & up) to Borg Warner 1350 T/C. Adapter length of 9" O.A.L. 29.500".

P/N 50-8405 - AOD (1988 & up) to Borg Warner 1350 T/C. Adapter length of 5" O.A.L. 25.500".



AOD transmission with 50-8403 adapter

Full Size Ford 4WD transmissions: By using any 4WD transmission, we can adapt off of the stock Ford adapter and are able to bolt these transmissions to your stock Borg Warner transfer case. These Ford transmissions had either a 28 or 31 spline output shaft.

P/N 50-4501 - Ford 4WD tranny 28 spline to Borg Warner 1350 T/C. Adapter length of 4".

P/N 50-4502 - Ford 4WD tranny 31 spline to Borg Warner 1350 T/C. Adapter length of 4".

T5 5 speed: This transmission is 15-1/8" long (with a 7" bellhousing). This transmission was used in the Mustangs until 1995. When purchasing a T5 transmission or bellhousing from a Mustang, be aware that the 1994 & 1995 T5 transmission input shaft is 5/8" longer than a 1984-93 transmission. The Mustang T5 clutch mechanism is cable operated, whereas the Bronco II / Ranger clutch mechanism is hydraulic. A hydraulic slave cylinder will need to be fabricated for these applications.

P/N 50-1802 - T5 to Borg Warner 1350 T/C. Adapter length of 4-1/2".

P/N 50-1803 - T5 to Borg Warner 1350 T/C. Adapter length of 6-1/2".