



Speed Gems
transmission adapters

Performance. Delivered.
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1949-1956 Oldsmobile 303/324 to Chevy Manual Transmission

Disclaimer - Please Read Carefully

WARNING: Due to the nature of engine and transmission swaps, we cannot guarantee fitment into your vehicle without having to make mild to extensive modifications. This should be considered when starting your project. It is highly recommended to take the time to research any potential issues you may face prior to starting your build. There are numerous forums and websites that can help and give insight into any potential issues involved in the project. This project is not for a novice mechanic. If an individual is not confident in performing such extensive vehicle modifications, Speed Gems recommends finding a capable shop for assistance.

Prior to and during installation of your new Speed Gems Transmission Adapter Kit, always ensure to:

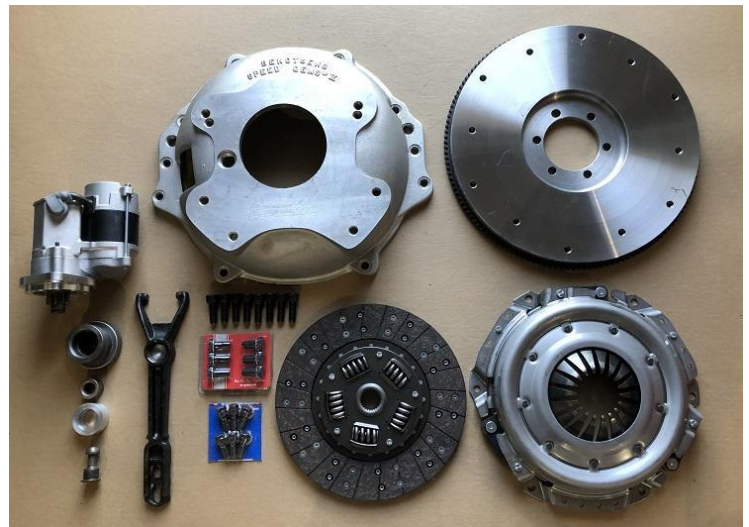
- Clean everything, including all components and surfaces.
- Use proper torque and **Loctite all bolts.**
- Do not force anything and begin all bolts by hand before using any tools. This will prevent cross-threading.
- Check all bolt clearances.

We try to make everything as simple as possible to help you, but the ultimate responsibility as to the assembly of the kit is up to the installer.

If you have any additional questions, please contact us by phone (763) 767-4480 during business hours or email sales@transmissionadapters.com at any time.

COMPONENTS INCLUDED IN KIT

(1) Bell Housing - 1949 Old/Cad to Chevy Manual
(1) Flywheel
(1) Starter
(1) Starter Block - Multiple Olds/Cadillac applications
(1) 10.5 Clutch Disk, matched to Transmission
(1) Pressure Plate, Transmission specific
(1) Pivot Ball
(1) Pilot Bushing Adapter
(1) Pilot Bushing
(1) Long throw-out Bearing
(8) SHCS 7/16-14 x 1-1/4
(6) 7/16-20 x 1 Flywheel Bolts
(6) 3/8-16 x 3/4 Pressure Plate Bolts
(1) Clutch Fork
(1) Clutch Fork Retainer
(1) 143N Tooth Ring Gear
(4) SHCS 1/2-13 x 1



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APPLICATION NOTES

Oldsmobile made so many changes over the years that it would be near impossible to list all information here.

An important item to note is that Oldsmobile changed their flywheel diameter and ring-gear tooth count 3 times. This means that there are at least 3 different starters with different starter locations in the lower bellhousing (cast inspection cover). The different combinations can also be found on our website. The flywheel that is included with this kit has one bolt hole that is elongated. This is to fit both style crankshafts.

Oldsmobile also changed the crankshaft bolt hole locations. Most Oldsmobile engines have one bolt hole that is .070 offset on the crankshaft. Some Oldsmobile cranks have 6 symmetrical bolt holes. The 1949-1953 crankshafts had a pilot bearing hole because the early Hydro's used this hole to center the input shaft with a bearing, just like the manual transmission did. The 1954 & 1955 crankshafts most likely had the pilot hole in them since they also still used the Hydro's. The 1956 and later Oldsmobile crankshafts only had a pilot bearing hole drilled if it came from the factory with a manual transmission. The 'jetaway' transmission came out in 1956 having a different style input and torque converter drive plate. If you are rebuilding your engine, it is recommended to have a pilot bearing hole machined.

There are 3 different inspection covers. The number of teeth on the original flywheel dictates which inspection cover/starter combination that will be needed. These can be changed as a unit to accommodate using a different flywheel than the engine originally had.

There are 3 types of lower inspection housings/starter housings that came stock on Oldsmobile engines. The 166-tooth unit was used on the 'slim-jim' cars. 1954-1964 used a 176-tooth ring gear-type cover. 1949-1953 used a 145-tooth ring gear-type cover. The 145 & 176-tooth locate the starter in the same spot. However, they use different starters since they have a unique tooth pitch. The early motors (incl. Cadillac) used a coarse-pitch gear, while the 1954 and later engines used the fine-pitch gear. You can use the 176-tooth flywheel in all the motors if you get the matching starter and the balance is correct. They also rotate the starters differently. Some covers have extra bolt bosses that, if used, rotate the starter correctly for the older motors. Some covers have 2 sets of bolt holes that can be used.

With extremely long block extensions and multiple combinations that can be found on these Oldsmobile applications, Speed Gems provides the right solution for your project!

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INSTALLATION INSTRUCTIONS

1. Make sure that the crank flange is extremely clean (i.e. - no burrs). Note the position of the factory notch in the crankshaft compared to the position of the offset bolt hole. This will be the same on all offset crankshafts. There is a '0' stamped next to the offset bolt hole on the new aluminum flywheel. Make sure that this is lined up correctly. The aluminum flywheel has a replaceable insert that is the same size as other inserts sold in aftermarket catalogs.
2. Install the flywheel provided. If you have a 303 or 324, the flywheel should not have a balance weight. If everything goes on without interference, install the provided bolts and torque to factory specs. They are 12-point ARP bolts. Make sure that they do not interfere with the block behind the crank. Also, check to see if the ring gear interferes with the block. Some of the Old's blocks have more material in the flywheel area than others. This could be due to the 166 tooth ring gears used with the 'slim-jim' transmissions. These flywheels had a smaller diameter. If this is found to be the case on the project, then grind material away to clear the flywheel ring gear.
3. Install the lower bellhousing and starter to make sure the starter is going to align with the flywheel provided. Next, turn the engine over with the starter to make sure everything is going to work correctly. Check and confirm the depth of starter engagement, or distance of the drive to the flywheel ring-gear. If the engine can be started and ran, you can also make sure there is no vibration present.
4. Everything should now be ready to bolt on the clutch, pressure plate and bellhousing. The clutch and pressure plate assembly uses a common 11-inch Chevy setup. This makes it easy to buy local replacement parts, hi-performance aftermarket parts and makes it easier to hold depressed at a stoplight. The throw-out bearing is the longer of the two styles that Chevy used. A hydraulic throw-out bearing assembly sold by numerous aftermarket companies will work only if it is shimmed out towards the diaphragm fingers. The fork is installed onto the pivot ball that is already placed in the bellhousing. Simply grease it and then just tap it sharply onto the ball stud with the spring in place.



Speed Gems would like to THANK YOU for purchasing our products!
We would love to see pictures of our products installed on your Hotrod. Please tag us on our social media or send a picture to sales@transmissionadapters.com and we will get your project posted on our website.

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