



**Speed Gems**  
transmission adapters

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## 1949-1956 Olds. 303/324 to Chevy Auto. Transmission (Internally Balanced)

### 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](mailto:sales@transmissionadapters.com) at any time.

### COMPONENTS INCLUDED IN KIT

(1) Adapter plate - Olds/Cadillac 1949-1964 to Chevy
(1) Crank Adapter - Olds/Cadillac 1949-1964 to Chevy
(1) Torque Converter Drive Plate
(1) Flexplate
(1) Flexplate Spacer
(1) Starter
(1) Starter Block - Multiple Olds/Cadillac applications
(2) Dowel Pin .621 x 1
(8) SHCS 7/16-14 x 1
(6) 7/16-20 x 3/4 Flexplate Bolts
(6) SHCS 7/16-20 x 3-1/4
(3) Extra Thick Washer 7/16 H
(3) USS Flat Washer 7/16 YZ 8
(1) 143N Tooth Ring Gear
(6) HCS 3/8-16 x 1-1/4



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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 course-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. Once the transmission is removed, clean the back surface of the block where the adapter will contact. Make sure both alignment dowels are in place.
2. 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.
3. Install the provided flexplate using the (6) 7/16-20 x 3/4" bolts included.
4. Install the provided crank adapter using the (6) 7/16-20 x 3-1/4" SHCS cap screws included.
5. Bolt the provided adapter plate to the block using the (8) 7/16-14 x 1" SHCS cap screws included.
6. Install the provided torque converter drive plate.
7. Install the starter to make sure it aligns with the ring gear. 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 ring gear. If the engine can be started and ran, you can also make sure there is no vibration present.
8. Everything should now be set to install the Chevy automatic transmission.



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](mailto:sales@transmissionadapters.com) and we will get your project posted on our website.

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