



Speed Gems
transmission adapters

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Small Block Ford 302/351W/351C/+ to Ford 6R80/Modular 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) Adapter Plate-Inner – SBF to 6R80
(1) Flexplate/Torque Converter Spacer – SBF to 6R80
(1) Block Plate – SBF to 6R80
(1) Inspection Cover – SBF to 6R80
(1) Starter – SBF to 6R80
(3) HCS 7/16-14 x 5
(2) HCS 7/16-14 x 3
(10) 7/16-20 x 3/4 Flexplate Bolts
(2) HCS 3/8-16 x 3
(2) HCS 1/4-20 x 1/2 (Welded to Block Plate)
(2) Flat Washer 1/4
(2) Lock Washer 1/4
(2) Hex Nut 1/4-20
(2) HCS 3/8-16 x 2-3/4
(3) SHCS 7/16-14 x 2-1/4
(2) SHCS-LH 3/8-16 x 1 Low Head
(2) Dowel Pin x 0.850" Length – SBF to 6R80 (Pressed-in AP)
(4) Flange Nut M10 x 1.0
(4) Threaded Insert 7/16 x 20



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APPLICATION NOTES

- This kit was designed to bolt a Small Block Ford engine (SBF) to a Ford Modular V8-bolt patterned transmission. There are several I6 & V6 Ford engines that were also produced with the SBF pattern.
- The modular transmissions can be sourced from several different engines, which include: 4.6L, 5.0L (Coyote), 5.4L, 6.2L, 6.8L V8 & V10 applications
- Due to the size of the modular transmission bellhousings, there may be issues trying to use the factory headers with our adapter kit. It is recommended that you use aftermarket headers with this kit. Speed Gems recommends using the same headers that were used in the design of this kit, *Speedway Motors Part #9300201*. These headers will allow for proper clearance of the starter provided with this kit and maintain a nicely packaged exhaust system without having to modify your exhaust.

NOTE: *This kit is not limited to the headers specified. Please be aware that we did not design to fit all possible options of headers available on the market. Please be sure to test fit your headers prior to installing the engine into your vehicle.*

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INSTALLATION INSTRUCTIONS

1. Start by cleaning off the back of your block and crank flange with acetone. Ensure the working surface is clean and all debris has been removed.

NOTE: *This step is to be repeated with any mating surfaces of your transmission adapter kit.*



2. Place the provided block plate onto the back of the engine. Install the adapter plate using the (3) SHCS 7/16-14 x 2-1/2" bolts provided. Torque these bolts to 25ft-lbs.
3. Attach your flexplate to your crank flange using (6) of the (10) 7/16-20 x 3/4" flexplate bolts provided. Per Ford specifications, Torque to 75-85ft-lbs.
4. Before proceeding any further, it is important to ensure that the starter and the flexplate engage properly. Our kit is designed to have the starter bolt directly to our adapter. This is also a good time to check for proper clearance with your headers and clock the starter position, if needed.

NOTE: *Not all flexplates are equal. This is due to the materials used and that they are never perfectly round. This step ensures there is no binding and will help to prevent further issues with your flexplate and starter.*

Install the provided starter and snug it down using the (2) 3/8-16 x 1" Low Head SHCS. With a 12V-Battery, attach power to the main terminal and a jumper wire to engage the starter and turn over the engine. While doing so, make sure that the Bendix retracts and does not stay engaged in the ring gear.

NOTE: *If there are issues, first try using the provided shim that comes in the kit and repeat turning the engine over. If this still does not work, you may need a new flexplate as yours may be too far out of round. If there are further issues, contact customer support.*

5. Align and attach the provided torque converter spacer to the torque converter. It is meant to be a tight fit and will possibly need to use a RUBBER mallet to get it seated fully. Once seated, use the provided (4) M10 x 1.0 Flange Nuts and hand tighten. Per Ford specifications, Torque to 30-40ft-lbs.

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INSTALLATION INSTRUCTIONS – *Continued...*

- Everything is now ready to attach your engine and transmission. As shown in the picture(s) above, there is a boss that slips into the flange of the crank. **Use care when aligning your transmission onto the dowel pins and into the crank flange.** Use the (2) 7/16-14 x 5" bolts provided on the top two bolt holes of the transmission. These bolts will go through the provided adapter plate and into the block. Torque these bolts to **25ft-lbs.**

Continue hand threading the remaining bolts through the back of the transmission and into the adapter plate. Pay attention to the bolt that goes into the starter pocket. If you use the incorrect bolt this may block the starter from engaging the ring gear properly. *Do not yet install* the bottom two bolts that come in from the engine side into the bottom holes of the transmission bellhousing. These will be installed in a later step.

Torque the remaining bellhousing bolts that are threaded into the adapter plate to **25ft-lbs.**

- With the transmission now bolted to the adapter plate and torqued to spec., attach the provided torque converter spacer to the flexplate. Use the remaining (4) 7/16-20 x 3/4" flexplate bolts provided. *Use the open area at the back of the adapter to align the holes on the flexplate spacer to the flexplate.* There should be a gap between the flexplate and the spacer of roughly **0.125-0.180"**. This allows for proper torque converter expansion. If this gap is not present, your torque converter may not be seated into the transmission fully. The torque converter and spacer should initially turn easily to allow for the alignment of these holes. The engine may need to be rotated using the main crank pulley bolt.

NOTE: *Hand-tighten all 4 bolts and in a "star" pattern and increase torque to **25ft-lbs. and then to 50ft-lbs.** Then, per Ford specifications, Torque to **75-85ft-lbs.***

- After all the flexplate bolts have been properly torqued, next install the starter. Referencing **Step #4**, the starter should have been clocked for proper clearance of your header. Install starter and Torque bolts to **25ft-lbs.**
- Lastly, install the inspection cover. Use the provided (2) 1/4" washers, lock-washers & nuts along with the remaining (2) 3/8-16 x 3" bolts. There are 1/4-20 bolts already welded to the block plate that provide alignment for the inspection cover. Hand-thread the (2) 3/8" bolts into the remaining two holes in the lower bellhousing. Torque to **25ft-lbs.** Tighten the washers, lock washers and nuts onto the inspection cover.



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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