



## Transmission Installation Kit

### TKX Installation Instructions

**Congratulations on your purchase of the finest quality Transmission Installation kit available today. Please understand that these installation kits are not vehicle specific. They are designed to adapt specific engines to specific transmissions and may require you to do some minor work to make it fit your particular vehicle.**

**WORK SAFELY! Installation of this kit requires working underneath the vehicle. USE EXTREME CAUTION WHEN WORKING UNDERNEATH THE VEHICLE. Never get near or underneath the vehicle until you are confident that it is safely supported and will not move or fall from its raised position. DO NOT USE A BUMPER JACK!**

#### PREPARATION FOR INSTALLATION:

1. Place the vehicle on a solid, level surface, such as a garage floor to ensure safe installation.
2. Raise the vehicle using appropriate lifting device and support it using automotive approved support stands having adequate load capacity.
3. Disconnect the negative (-) cable from the battery.
4. Remove driveshaft, exhaust, and the transmission being replaced.

**CAUTION: DO NOT BEGIN THIS INSTALLATION UNTIL YOU ARE CONFIDENT THAT THE VEHICLE IS SECURE AND SAFELY SUPPORTED!**

#### KIT INCLUDES:

1. Bellhousing
2. Flywheel
3. Flywheel Bolts
4. Clutch Kit
5. Pilot Bearing
6. HYD Release Bearing
7. Block Plate- not included or used in GM kits
8. Bolt Kit

#### NOTES:

- This kit will work with OE starters and MSD high torque starters where available
- Verify that the bellhousing will fit in your Trans tunnel before moving forward.
- These kits are based off using a GM style TKX transmission
- GEN3 HEMI applications will need the spiral lock removed from the end of the HYD release bearing

#### INSTALLATION INSTRUCTIONS:

1. Clean bellhousing mating surface on the engine block and install the block plate onto the dowels (GM kits will not use a block plate).
2. Open the flywheel and clean the rear mounting face along with the crank flange.
3. Install flywheel, using the supplied Flywheel bolts, and add blue Loctite® to the threads. Torque in two steps using a criss-cross pattern to the specs listed at the bottom of this instruction sheet. You can hold the flywheel with a tool like Mr. Gasket 8013MRG or equivalent.
4. Clean the center bore of the crankshaft and install the pilot bearing using a deep well socket as a punch. Be sure that the socket only touches the outer edge of the pilot bearing. The bearing will install with the beveled ID to the outside (facing the installer). If installing a pilot that uses a bronze bushing, only drive the pilot in by the outer (bronze bushing).
5. Install the clutch using the supplied alignment tool and hardware. Add blue Loctite® to the threads of the pressure plate bolts and torque to 25 ft./lbs. in a criss-cross pattern evenly. Once complete, verify that the clutch alignment tool will slide in and out easily.

6. Install the bellhousing to the engine with the supplied hardware and tighten. Using a straight edge and calipers, measure the distance from the clutch fingers to the Trans mounting surface on the bellhousing as seen in the photos on the next page. Write this measurement down as your answer for A in the measurement sheet on page 3.
7. Install the HYD release bearing on the Trans. You will need to remove the bearing cover from the Trans and replace it with the new one supplied in the kit. Be sure to install with any shims that the old one was removed with and align the oiling hole toward the top. The release bearing will use an alignment stud. Install it so that the lines will point toward the opening in the side of the bell. Torque new bearing cover bolts to 18 ft./lbs. using blue Loctite®. The finished product will look like the photo.
8. With the bearing installed over the input shaft without any shims, measure the distance from the bearing face to the Trans mounting surface as shown in photos. Write this measurement down as your answer for B on the measurement sheet on page 3.
9. Using the measurement sheet on page 3 subtract your answer for B from your answer A. This will be the total gap between the bearing face and the clutch fingers.
10. The goal is to add shims behind the bearing to get the cushion at .175-.200. This distance will allow for clutch disk wear over time.
11. Install the HYD lines to the release bearing using thread tape and tighten. Be sure that no thread tape gets in the fluid flow path of the lines. It is recommended that you use thread tape over a thread paste for best seal.
12. Install the Trans to the engine. Once you have the Trans close to the bellhousing, feed the HYD lines through the hole in the side of the Bellhousing. With the Trans in gear, use a yoke from a driveshaft to turn the Trans output shaft so that the splines in the clutch disk will align with the input shaft. Once aligned, the Trans should go forward smoothly. Install the supplied (x4) bolts and evenly tighten the transmission to the bellhousing.
13. Torque all bellhousing bolts and the (x4) Trans to bell bolts to 35 ft./lbs.
14. You are now ready to install the crossmember and HYD lines to the clutch master cylinder (not included).
15. Fill your master cylinder reservoir with DOT 3 brake fluid and open bleeder on the HYD release bearing. Once fluid starts to flow out, close bleeder. It is important to never let the reservoir run out of fluid.
16. Have someone slowly pump the clutch pedal 5-10 times, and then hold the pedal to the floor. Open the bleeder and allow air to escape the system. Repeat this until there is only fluid coming out of the bleeder.
17. You are now ready to complete your assembly of your vehicle. Be sure to allow 500 miles of break-in for your new clutch.



A



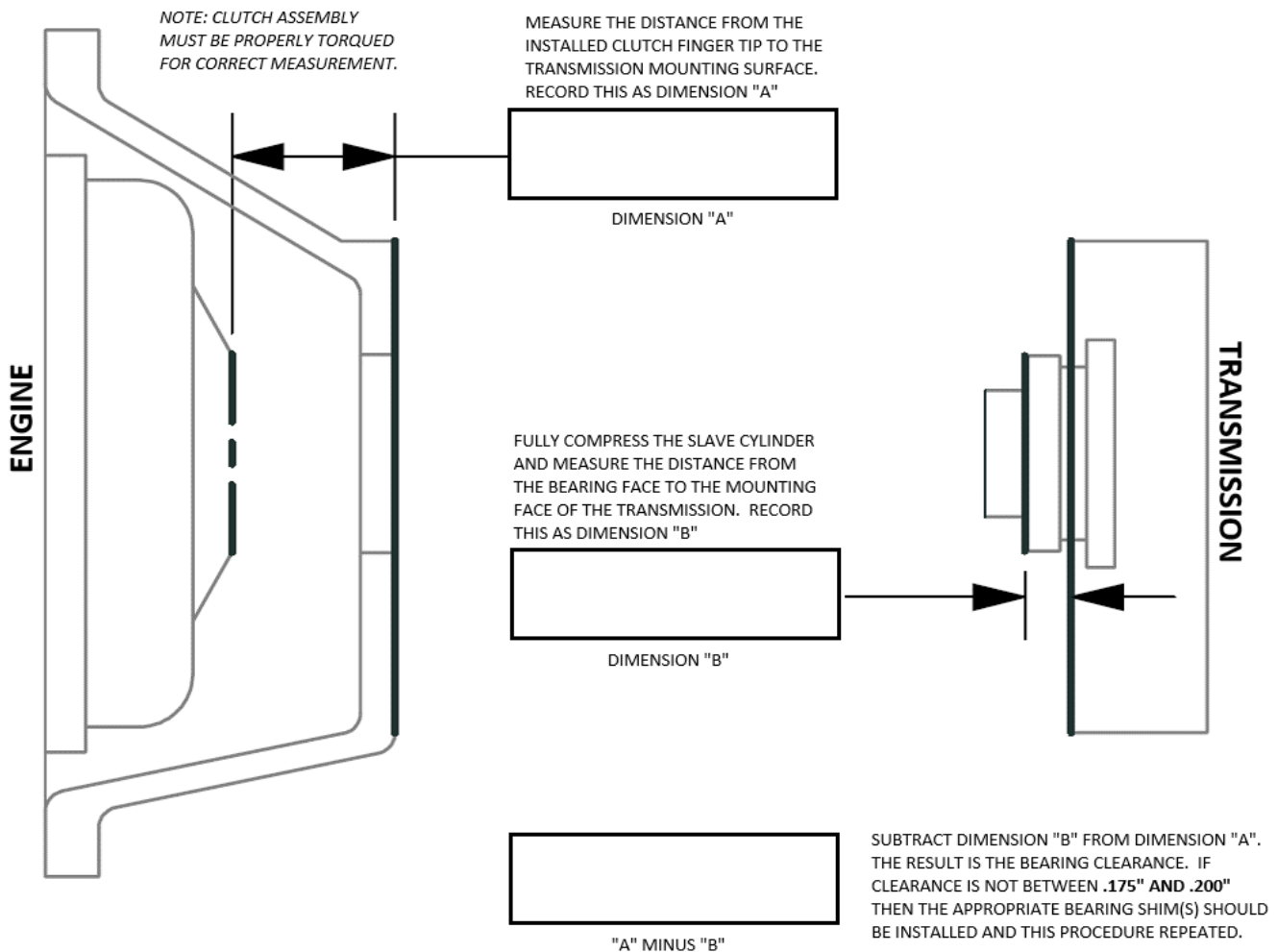
B



Flywheel Bolts	TQ Specs
GM LS/LT	74 FT./LBS.
GEN3 HEMI	70 FT./LBS.

Engine	Starter
GM LS	OEM Car/Truck starter, MSD 5096, MSD 50963
GM LT	OEM Car/Truck
Gen3 HEMI	Right - O'Reilly's Ultima R612898B / 2012 Challenger R/T 5.7 Left - O'Reilly's Ultima R612900B / 2016 Challenger R/T 5.7

### MEASURING METHOD



**NOTE: All fasteners for the engine side or transmission side should be torqued between 35 and 45 ft./lbs. to maintain parallelism. It is more important that they are all torqued the same more than whether it is 35 or 45 ft./lbs.**

## BELLHOUSING ALIGNMENT PROCEDURE:

Due to manufacturers' machining tolerances of engine blocks in relationship to dowel pin location, it is quite possible for the crankshaft centerline and bellhousing bore to be misaligned.

With the transmission installed in a misaligned condition, several problems can occur, such as pilot bearing and main shaft bearing wear, difficulty in shifting, and in extreme cases, breakage of transmission gears and case.

While most bellhousings will fall within the allowable limits, it is good practice to check for register bore run out whenever any bellhousing or engine block is installed.

Should you need them, offset dowel pins are available from Lakewood Industries & QuickTime to ensure correct bellhousing installation. For checking, you will need a dial indicator (preferably with a magnetic base), a few simple tools, and close attention to detail to give you accurate installation results.

1. Remove clutch assembly from flywheel.
2. Thoroughly clean the mounting surface of the engine block and of the new bellhousing. Be sure to smooth out any rough areas, burrs, or other surface imperfections prior to installing bellhousing.
3. Install bellhousing on engine block. (Checking alignment is easier when you leave the clutch assembly off the flywheel.) Install dial indicator base securely to the crank flange or the flywheel and adjust plunger to contact the register bore of the housing. **Dial should be as parallel to the mounting face as possible. Slowly, rotate the crankshaft and ensure the dial does not interfere with the bellhousing.**
4. After checking for interference, rotate the crankshaft and note indicator reading. **Note the location where the largest reading is, mark that location and zero the indicator. Check and note the reading every 90° of rotation. Divide the opposing measurement by 2. If the result is >.005", then an off center condition exists and should be corrected.** Misalignment is one-half of the indicator reading (maximum suggested allowable misalignment is .005").
5. To correct off-center condition, select the offset dowel pin pair that is closest to one-half of the indicator reading. (i.e., if reading is .016", 1/2R=.008" use .007" dowels – if reading is .024", 1/2R=.012" use .014" dowels).
6. Remove stock dowel pins by driving out from back side or pulling out with gripper pliers.
7. Clean engine block dowel holes and coat lightly with lubricant.
8. Note the position of the offset and mark the dowel for reference. Lubricate dowel pins and install in block. They should be installed in the direction the bellhousing needs to be adjusted, parallel to one another and in pairs (both .007", .014" and .021").
9. Install and tighten bellhousing securely. Remount the dial indicator and recheck the register bore run-out (repeat step 3).
10. To make small corrections or adjustments to the alignment, you will need to remove the bellhousing and drive the offset dowels out of the block. Reposition the dowels and re-check register bore run-out. Repeat this procedure until the register bore is within limits.

**NOTE: Always be careful when removing bellhousing from engine block so that offset dowel pins do not move or change position.**

Total Indicator Reading	One-Half Total Indicator Reading	Size Dowel To Be Used	Lakewood Offset Dowel Part Number		Quick Time Part# for Ford Mod Engines
			GM .625" dia.	Ford/Mopar .500" dia.	
.012" to .020"	.006" to .010"	.007"	#15920	#15950LKW	RM-140
.022" to .034"	.011" to .017"	.014"	#15930	#15960LKW	RM-141
.036" to .052"	.018" to .026"	.021"	#15940	#15970	RM-142

Technical Service: 1-866-464-6553

Phone: 1-270-781-9741

For online help, please refer to the Tech Service section of our website: [www.holley.com](http://www.holley.com)

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