USCT7M2104 / USCT7M2109

Installation Instructions

For

Gen3 Hemi Spec **ZF8HP70 / HP90** transmissions to
Chrysler LA 318/340/360 engines- without crank sensor

PLEASE READ INSTRUCTIONS COMPLETELY BEFORE BEGINNING INSTALLATION

Note: early-version 8HP torque converters were produced with a smaller diameter (1.335") pilot hub than later-version torque converters were equipped with. These smaller pilot hubs require the use of a crank bore bushing that is available separately from USCT Motorsports.

1.) Clean the crankshaft flange converter alignment hub recess. Remove any rust or damage present with sandpaper to prevent any nicks or distortions present from allowing the bushing/converter hub to seat properly. This is critically important as the fitment of the reducer bushing (if needed), or torque converter hub requires this recess to be without burs or debris.

2.) If needing to use a crank bore bushing (**Figure 1**), ensure it can be slid freely onto the converter hub, then remove it and install it into the crankshaft recess (**Figure 2**). Do not use a hammer or other metal object to install the bushing as damage may occur that will prevent proper engagement of the converter hub within the bushing.

3.) After installing the bushing, verify that the converter hub can be inserted freely into the bushing without binding and then set the converter aside.

4.) Obtain and install a factory GEN 3 Hemi engine starter index plate, which is compatible with the specific transmission case and starter you are using (i.e. car or truck), onto the back of the engine and engage it with the block dowel pins to hold it in place.

5.) Attach the flywheel to the crankshaft using six 7/16-20 bolts and tighten them to the factory torque specification of 55 ft-lbs.

6.) **Determine thickness of shims required between the flywheel and converter**

This step is required due to the considerable difference in converter set-back between stock, remanufactured and performance converters. Discrete shim thicknesses of .075 and .130" have been provided as part of this kit to position the converter in the most favorable position.

Dust shield shown in **Figure 4** is not included but should be installed between the engine and the ZF8HP transmission to maintain correct torque converter clearance. Use the correct dust shield for your transmission - car and truck are different.

Due to the above-mentioned differences, the distance from the mating plane of the transmission bellhousing to the converter mounting pad plane can be as great as .990” to as little as .887” (you will need a minimum of .800”).

With the distance between the converter side of the flywheel and the transmission mounting plane (average .730”) subtracted from the total distance, the for/aft free-play clearance of various converters has been observed to vary from .157” to .260”, a difference of almost .100”.

Two suitable methods for measuring the required shim thickness are as follows:

Unassembled measurement

- Attach the flywheel to the engine and measure the distance from the rear side of the flywheel to the rear surface of the starter index plate and record it.

- Install and fully seat the converter into the transmission and measure the distance between the mating plane surface of the transmission bellhousing and the face of the converter mounting pad and record it.

- Subtract the first measurement taken from the second, the result will be the clearance between the converter and the flywheel.

Assembled measurement

- Attach the flywheel to the engine.

- Fully seat the converter into the transmission and attach both to the engine.

- Measure the distance from the rear face of the starter index plate to the converter mounting pad face with the depth measurement feature of a dial caliper, or other tool, and record it.

- Subtract the thickness of the flywheel (.130”) from the measured distance, the result will be the clearance between the converter and the flywheel.

- Disassemble the transmission from the engine.

Using the supplied shims, singularly, or combined, should allow you to obtain between .125” and .188” of free-play clearance between the converter and the flex plate before mating the two together. Since it is near-impossible to install the shims after the engine and transmission have been mated to each other, we have provided holes in the flywheel plate to rivet the shims to the converter side of the flywheel beforehand.

7.) Attach the required shims to the rear/converter-side of the flywheel with the supplied pop rivets. The small holes located in-between the converter pad attachment bolt holes are intended for this purpose.

8.) Install the transmission and converter onto the engine as per service manual instructions. Confirm that the converter is fully seated into the front pump of the transmission and that free-play exists between the converter and the flexplate before

attaching them together. Use the 6 supplied M8 bolts, with a drop of blue Loc-Tite applied to them, for this purpose. Tighten the bolts to 31 ft-lbs.

9.) Obtain and install a Gen 3 Hemi engine starter that is compatible with the specific index plate and transmission case that you are using. Clearance the starter housing at the area depicted in **Figure 3** is typically required to provide clearance for the casting of the small block engine.

10.) Install and/or fabricate a transmission mount to support the rear of the transmission.

Starter installation notes:

- ZF8HP70 with passenger-side starter- relocation of the engine oil filter will be required using an adapter.

Compatibility information:

- The dimensions and geometry of this flywheel are designed for use with stock OE torque converters; using an aftermarket, or rebuilt torque converter will require torque converter free-play cleared to be verified and adjusted if needed. If more clearance is required, the three pad mounting shims on the rear face of the flexplate can be cut-off/removed by the user.

Figure 1

Figure 2

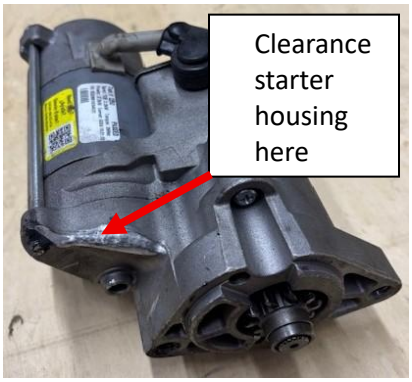

Figure 3

Figure 4