



## 1964-67 GM A-Body LS Swap Transmission Crossmember 71222008HKR

Installation Instructions – T56/T56 Magnum/4L60-4L70\*/4L80-4L85/TH400\* and 2004R\*

\* Installation requires the use of a separately available Hooker transmission spacer kit.



Thank you for choosing to use this Hooker™ transmission crossmember as part of your LS swap project. This crossmember is part of the most comprehensively engineered system of mounting components, headers and [exhaust systems](#) available for this vehicle application. The entire Hooker™ swap system is designed to decrease your total swap installation effort and cost while increasing the engineered quality of your vehicle and compatibility of these components with other popular aftermarket components. Please read these instructions in their entirety before attempting installation.

### **PRE-INSTALLATION CONSIDERATIONS:**

This crossmember is designed as part of a fully-engineered LS swap mounting system for 1964-67 GM A-body vehicles (excluding convertible or El Camino models). It has been CAD designed to provide an optimized balance of weight, stiffness and strength. The dual-arch exhaust passages are provided for installation of available Hooker 2.5" and 3" exhaust systems for this application, or any custom system of your choice.

This crossmember provides for direct installation of a 4<sup>th</sup>-gen F-body/GTO T56, aftermarket Tremec T56 Magnum or 4L80/4L85 transmission. Installation of a 4L60-4L70, TH400 or 2004R automatic transmission can also be accomplished using this crossmember and a Hooker **12650HKR (TH400/2004R)** or **12657HKR (4L60-4L70)** adapter kit.

Installation of this crossmember, with any of the above mentioned transmissions, requires the use of an aftermarket Prothane™ 7-1604 polyurethane mount or stock/aftermarket rubber mount of equivalent installed height.

Due to the unique design geometry of this transmission crossmember, attempts to install it with headers and/or engine mounting plates/brackets other than those developed by HOOKER™ for this LS swap application will more than likely not be successful. When used with the related Hooker™ **71221008HKR and 71221009HKR** engine mounting bracket kits and Holley 302-2 oil pan, this CAD designed transmission crossmember will provide desirable component clearances and U-joint operation angles.

A suitable lifting jack will be required to install this crossmember with the appropriate transmissions for which it is intended. An automotive lift or a jack and jack stands will be required to safely raise and support the vehicle.

**CAUTION!** WORK ONLY ON A LEVEL SURFACE. USE JACKS /JACK STANDS OF SUFFICIENT CAPACITY TO LIFT AND SUPPORT YOUR VEHICLE. NEVER WORK UNDER A VEHICLE SUPPORTED BY A FLOOR OR BUMPER JACK.

### **INSTALLATION:**

1. Check that the hardware package includes the following:

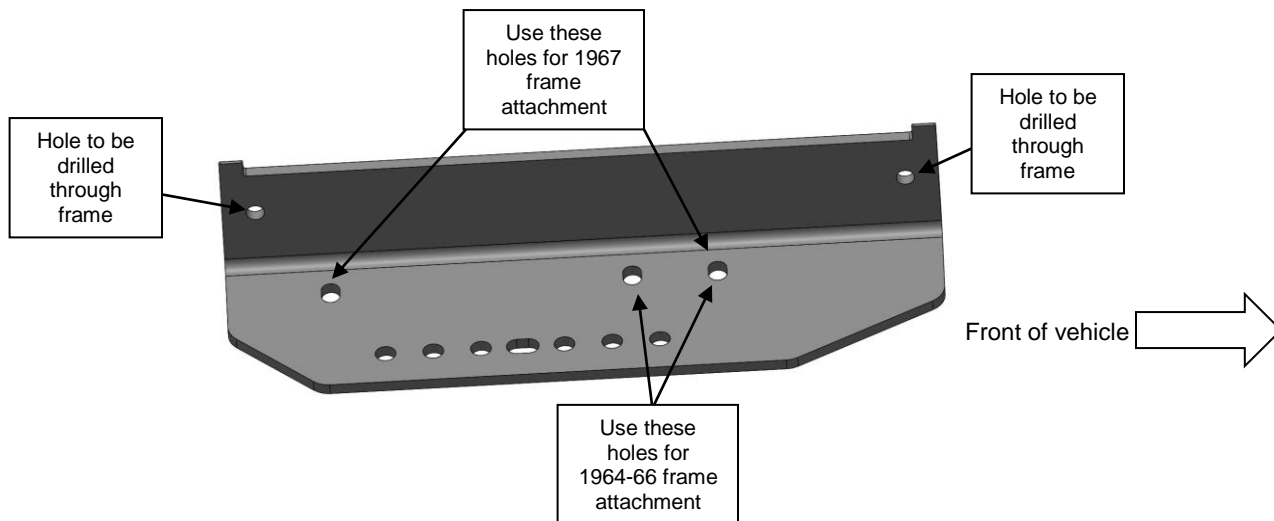
Qty.	Description	Qty.	Description	Qty.	Description
1	Crossmember Assembly	1	Left side frame adapter bracket	4	7/16" Nuts
1	Transmission Spacer (5/16" thick)	4	Right side frame adapter bracket	8	3/8" Bolts
1	Transmission Spacer (3/16" thick)	4	7/16" Bolts	8	3/8" Nuts

**NOTE:** These instructions have been written with the assumption that you have already installed an LS engine into your vehicle using one of the Hooker A-body engine mounting bracket kits.

**NOTE:** The included 5/16" & 3/16" spacers are provided for use with all transmissions to help achieve desirable U-joint angles. Depending on the pinon height (not angle) of the rear end used in the vehicle (i.e. Ford 9", GM 10-bolt or GM 12-bolt) and the rear suspension ride height you may need to use one, two, or none of these spacers. This crossmember kit is not packaged to achieve optimized U-joint operating angles on vehicles that have more than a typical 1" rear suspension drop. If you are installing a T56 Magnum transmission, use of the 5/16" thick spacer is required in all installations and may need to be used in conjunction with the 3/16" spacers in order to achieve optimized U-joint working angles with your particular rearend.

**NOTE:** 4L80/4L85 transmissions will be installed using the rearward set of holes located behind and above the cantilevered shelf in the center of the crossmember; all other transmissions will be installed using the forward set of holes located in the cantilevered shelf.

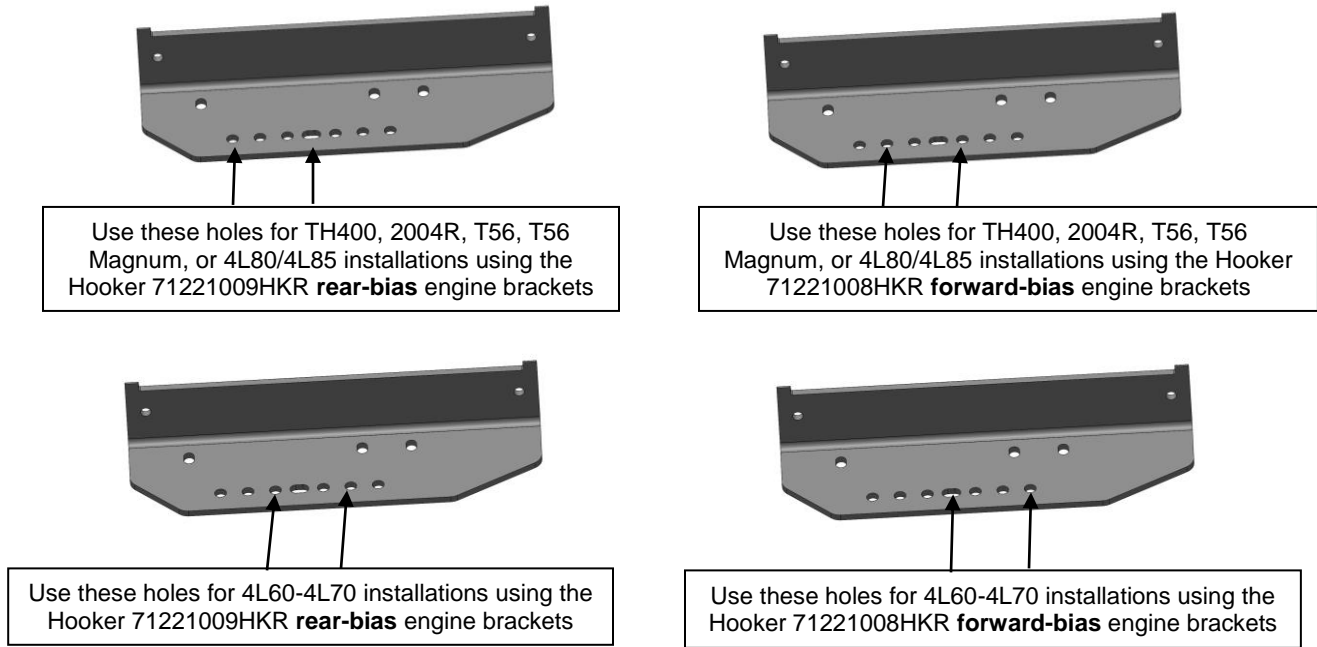
2. Attach the supplied left and right side frame adapter brackets to the bottom flange of each frame rail using the supplied (x4) 3/8" bolts. Align the frame attachment holes in the adapter brackets with two rearmost located holes in the 1964-66 frame pattern, or with the third hole from the front and the last hole in the 1967 frame hole pattern. See **Figure 1** for visual clarification.
3. Using a 3/8" bit, drill two holes through each vehicle frame rail that correspond to the two holes in the vertical walls of each frame adapter bracket (see **Figure 1**). Then, install (x4) supplied 3/8" bolts/nuts into the drilled holes and torque them to 47 lb./ft.



**Figure 1 (Driver's side bracket shown – passenger's side similar)**

4. Raise the tail of the transmission to its maximum height against the vehicle floor and attach an isolator mount to the transmission (user supplied). If you are using a Hooker **71221008HKR** or **71221009HKR** engine bracket kit and are installing any transmission other than a TH400 or 2004R, you must clearance (hammer blows) or modify the transmission tunnel to provide the required clearance to carry out the remaining installation steps below. The amount of clearance/modification needed for each specific transmission is described in the installation instructions included with the Hooker engine brackets .

5. Place the crossmember assembly on top of the frame adapter brackets and line up the holes in the ends of the crossmember with combination you are using in your swap. See **Figure 2** for the correct hole pattern to use for your combination.



**Figure 2 (Driver's side bracket shown – passenger's side similar)**

6. Attach the crossmember to the frame adapter rails with the included 7/16" bolts/nuts. Torque all to 78 lb./ft.
7. Place the supplied 3/16" transmission spacer on top of the crossmember mounting surface and then place a **12650HKR (2004R, TH400)** or **12657HKR (4L60-4L70)** spacer on top of the 3/16" spacer if you are installing a 2004R/TH400 or 4L60-4L70 transmission. For T56 Magnum installations, install the supplied 5/16" spacer along with the 3/16" spacer.
8. Install your driveshaft and measure its angle along with the angles of the transmission output shaft and rearend pinion to determine your U-joint operating angles.
9. Reconfigure (add, remove, or combine) the supplied spacers, as needed, to alter your U-joint working angles.

**NOTE:** The installation of the Hooker crossmember described within these steps is limited to vehicles equipped with rear suspensions that are configured with no more than 1" of drop. Lowering your suspension beyond that amount will require extensive modifications to the tunnel sheet metal above and behind your transmission to achieve optimized (under 3 degrees) U-joint working angles.

## **COMPATIBILITY INFORMATION:**

This transmission crossmember was specifically designed for bolt-in compatibility with the HOOKER™ LS swap engine mounting bracket kits, cast iron LS exhaust manifolds, headers and exhaust systems also developed for this application. Various other Holley® and OE LS components have been designed and/or validated for use with this system of components, as follows:

The engine/transmission positioning provided by this crossmember was designed specifically for compatibility with the Holley® **302-2** LS oil pan; compatibility with other aftermarket/OE engine oil pans is unknown. The Holley 302-1 LS engine oil pan is **NOT** bolt-in compatible with this transmission crossmember.

Hooker™ LS swap manifolds (**8501HKR**) and Hooker Blackheart 1964-67 A-body LS swap headers are compatible with the stock A/C evaporator case (right side rear ignition coil relocation required) when installed using this Hooker LS engine swap transmission crossmember and the related Hooker **71221008HKR and 71221009HKR** engine mounting bracket kits.

This crossmember is intentionally designed with high-tuck geometry to optimize the ground and dual exhaust routing clearances of this application. As such, installation of new body bushings may be required for successful installation. Worn body bushings have been verified to decrease body-to-frame clearances by as much as 1/2".