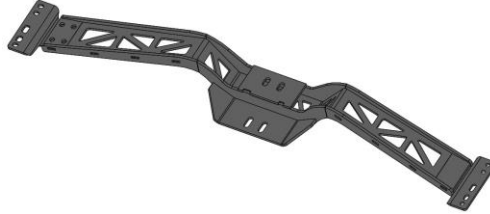




# 1968-1972 GM A-Body Convertible/EI Camino LS Swap Transmission Crossmember 71222021HKR

## 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 Blackheart 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 Blackheart 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 1968-72 GM A-body convertible/EI Camino vehicles and will also install on any other A-body model that was/has been equipped with a factory boxed frame. 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 Blackheart 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 Blackheart **12650HKR (TH400/2004R)** or **12657HKR (4L60-4L70)** adapter kit.

Installation of this crossmember, with any of the above mentioned transmissions, requires the use of a stock rubber, or Hooker Blackheart **71223029HKR** (black), or **71223030HKR** (red) transmission mount.

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 Engineering for this LS swap application will more than likely not be successful. When used with the related Hooker Blackheart **71221006HKR** or **71221007HKR** engine mounting bracket kits and Holley **302-2** or **302-3** oil pans, 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	Right Side Foot Bracket	8	3/8-16 Nuts
1	T56 Magnum Spacer	4	3/8 Flat Washers	8	3/8-16 x 1" Bolts

If any are missing, please contact Technical Service at 1-866-464-6553 or 270-781-9741.

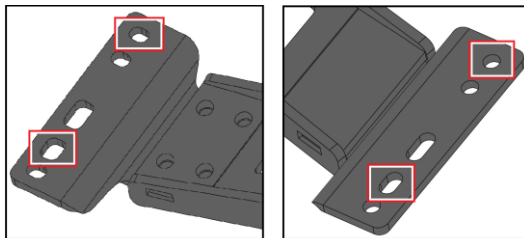
**NOTE:** These instructions have been written with the assumption that you have already installed an LS engine into your vehicle using one of the Hooker Blackheart A-body engine mounting bracket kits.

**NOTE:** If you are installing a T56 Magnum transmission, the included two-hole spacer is to be installed between the crossmember and transmission mount to compensate for the isolator mounting surface of the T56 Magnum being closer to the transmission output shaft centerline than the same surface on an LS 4<sup>th</sup>-gen F-Body/GTO T56. Leaving this spacer out will increase the engine inclination angle beyond that intended by Hooker Engineering and decrease the ground clearance of Hooker Blackheart headers designed for this application.

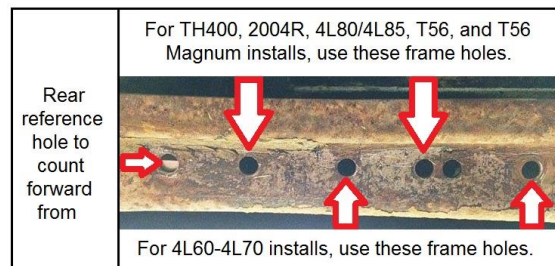
**NOTE:** 4L80/4L85 transmissions will be installed using the rearward set of holes located behind and above the cantilevered shelf in the center of the crossmember; all other transmissions will be installed using the forward set of holes located in the cantilevered shelf.

2. Raise the tail of the transmission to its maximum height against the vehicle floor and attach the transmission mount to the transmission (user supplied). If you are using the Hooker Blackheart **71221007HKR** engine brackets and are installing any transmission other than a TH400 or 2004R, or using the **71221006HKR** brackets and are installing a T56 or T56 Magnum transmission, you must modify and/or rebuild the transmission tunnel to provide clearance, as needed, to carry out the remaining installation steps below.
3. Position the left side of the crossmember on top of the lower left side vehicle frame rail followed by raising the right side of the crossmember above the right side vehicle frame rail. Insert the supplied foot bracket between the crossmember and the right side frame rail and attach the bracket to the crossmember using four each of the supplied 3/8" bolts and nuts. Torque to 44 lb./ft.

If using the Hooker Blackheart **71221006HKR** engine mounting brackets, attach the crossmember to the frame using the holes indicated in **Figures 1** and **2** below. As indicated, 4L60-4L70 installations will use the 3<sup>rd</sup> and 6<sup>th</sup> holes along the stock 8-hole frame pattern (counting forward from the rear-most hole in the pattern) and TH400,2004R,4L80/4L85 or 4<sup>th</sup>-gen F-body T56/T56 Magnum installations will use the 2<sup>nd</sup> and 4<sup>th</sup> holes along the stock 8-hole pattern (counting forward from the rear-most hole in the pattern).



**Crossmember Holes to Use**  
**Figure 1**



**Figure 2**

4. If using the Hooker Blackheart **71221007HKR** engine mounting brackets, move the crossmember along the frame rails until an aligned, and squared, pattern of holes is revealed that allows attachment of the crossmember to the vehicle frame rails and also to the transmission mount. If a suitable pattern cannot be found, loosely attach the transmission mount to the crossmember using user supplied fasteners and mark and drill new holes in each frame rail after squaring the crossmember across the frame rails.
5. Attach the crossmember to the frame rails with the included 3/8" hardware; torque to 44 lb./ft.
6. Attach the transmission mount to the crossmember. Install a **12650HKR** or **12657HKR** spacer between crossmember and mount for 4L60-4L70, TH400, or 2004R installations.

Any questions? Please contact Technical Service: 1-866-464-6553 or 270-781-9741. For online help, please refer to: [www.holley.com](http://www.holley.com).

### **COMPATIBILITY INFORMATION:**

This transmission crossmember was specifically designed for bolt-in compatibility with the Hooker Blackheart LS swap engine mounting bracket kits, headers and exhaust systems also developed for this application and Hooker LS cast iron manifolds. 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** & **302-3** LS oil pans; 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 A-body LS swap headers are compatible with the stock A/C evaporator case when installed using this Hooker Blackheart LS engine swap transmission crossmember and the related Hooker Blackheart **71221006HKR** or **71221007HKR** 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".

More LS swap/engine performance components, such as EFI fuel control systems, fuel filters, fuel pumps, plumbing hose/fittings and valve covers can be found at [www.holley.com](http://www.holley.com).

### **LIMITATION OF LIABILITY – DISCLAIMER:**

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**199R11416**

**Revision Date: 4-24-20**