



**P/N 12626HKR  
1967-69 GM F-Body/1968-74 GM X-body LS Swap  
T56/T56 Magnum Manual Transmission Crossmember**

**Installation Instructions**



Thank you for choosing to use this Hooker™ transmission crossmember as part of your engine/transmission swap project. This crossmember is part of the most comprehensively engineered system of mounting components, headers and exhaust systems available for this 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.

**IMPORTANT DESIGN AND INSTALLATION INFORMATION:**

This crossmember is designed as part of a fully-engineered LS swap mounting system for GM 1st-gen F-body/ 3<sup>rd</sup>-gen X-body vehicles. It has been CAD designed and FEA validated to provide excellent structural strength and stiffness from its high-strength low-alloy steel construction. As a further benefit to the user, a maximized ground clearance pathway for routing 2.5" or 3" exhaust system tubing is included as a main design feature.

The design geometry of this crossmember provides direct installation of a GM OE 4<sup>th</sup>-gen F-body or GTO LS T56 or Tremec™ aftermarket T56 Magnum manual transmission into your vehicle. This crossmember can also be used to install a GM TH400 or 2004R automatic transmission through the use of an available Hooker™ adapter kit (P/N 12650HKR); 2004R installations require minor modification/welding to be done to the crossmember per the instructions included with the adapter kit.

Installation of any transmission listed above with this crossmember requires use of an aftermarket Prothane™ 7-1604 polyurethane mount (or one of equivalent installed height), or the OE rubber mount which it is designed to be substitution for (the mount common to all late 50's through 1970's GM cars).

Due to its unique design geometry, this crossmember must be installed in conjunction with Hooker™ 1967-69 GM F-body/1968-74 GM X-body LS swap engine mounting brackets (12618HKR) to provide proper driveline operation angles and allow installation of an LS engine and one of the above listed GM/Tremec™ transmissions into this application without requiring any cutting or hammering to the vehicle body.

The related Hooker™ engine mounting brackets work in conjunction with this crossmember to provide an optimized 3° to 3.5° engine/transmission inclination angle that is critical to providing the minimized U-joint working angles that are desired for lowered performance and competition vehicles.

The installed geometry of this crossmember and the compatible Hooker™ engine mounting brackets are utilized to align the engine crankshaft and transmission output shaft axis with the center line of the chassis, which is slightly modified from the just-off-center stock alignment geometry used by GM.

A suitable lift or jack and jack stands will be required to install this crossmember with the appropriate transmissions for which it is intended.

## **COMPATIBILITY:**

This crossmember was specifically designed for compatibility with Hooker™ engine swap mounts, headers and exhaust systems and Holley® LS oil pan and accessory drive components for this application.

Oil pans that are directly installable with this crossmember include the Holley® **302-2** LS retrofit pan, a notched stock 4<sup>th</sup>-gen F-body, and various aftermarket fabricated steel pans.

Suitability of this crossmember for any application not described in this document is questionable due to the unique geometry of its design.

Use of this crossmember with half-height body bushings is only possible if relief pockets are fabricated into the floor to clear the arched humps of the crossmember and may require further floor clearance operations to clear the transmission bellhousing/case.

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).

## **INSTALLATION:**

### **PRE-INSTALLATION NOTES:**

This crossmember is designed to provide an exhaust routing path with maximized ground clearance. Worn or collapsed body bushings will further diminish the available installation space and may require increased force or leverage to be applied to the crossmember to persuade it into proper position. It is highly recommended that new body bushings be installed prior to performing your engine/trans swap.

This kit includes a spacer plate that is intended to be installed between the transmission isolator and transmission crossmember when installing a Tremec™ T56 Magnum aftermarket transmission. Leaving this spacer out during a T56 Magnum transmission install will increase the engine inclination angle beyond that intended by Hooker™ and decrease the ground clearance of Hooker™ headers and exhaust systems designed for this application.

These instructions were formatted with the assumption that you have already loaded your LS swap engine and attached transmission into position in your vehicle using the specific Hooker™ LS swap engine bracket kit for this application per the instructions included in its packaging.

1. Check that the hardware package includes the following:

- (1) Left Side Anchor Bracket
- (1) 3/8-16 x 3/4" Flanged Head Bolt
- (6) 3/8-16 x 1" Flanged Head Bolts
- (6) 3/8-16 Flanged Nuts
- (1) T56 Magnum Spacer Plate

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

2. Raise the tail shaft of the transmission to its highest possible point of lift using a transmission jack, floor jack or screw type pole jack.
3. Feed the fixed right attachment foot of the welded crossmember assembly onto the top of the right side rail of the vehicle subframe.
4. Push the left side of the crossmember up until you can insert the included left side anchor bracket under it and be able to rest its frame mating surface on the top of the left side rail of the vehicle subframe. Install the included short flanged head bolt through the center hole in the bracket and into the corresponding threaded hole in the crossmember; do not fully tighten the bolt at this point.
5. Install two sets of included flanged head bolts and nuts into the two remaining holes in the anchor bracket and crossmember and tighten all three bolts and/or nuts at this connection point.
6. Attach the transmission isolator of your choice to the mounting pad on your transmission.
7. Attach the crossmember to the subframe with the remaining included flanged head bolts and nuts; do not fully tighten the fasteners at this time.
8. Lower the transmission onto the crossmember and attach the transmission isolator to the crossmember using the fasteners included with the isolator.

**NOTE:** It was discovered during development of this LS swap component that there can be sizable width variations in the rear rails of production 1<sup>st</sup>-gen F-body/3<sup>rd</sup>-gen X-body subframes due to OE subframe production tolerances and/or collision damage and wear occurring over years of vehicle use. To account for this variation, compensated slots have been designed into the right side of this Hooker crossmember that require a simple one-time measuring/sizing operation to be carried out during its initial installation to precisely fit this crossmember to your vehicle. **This operation is incorporated into the final two installation steps of this crossmember as follows:**

1. Measure the distance from the inside edge of each subframe rail to the out edge of each fastener used to attach the crossmember to the isolator. If the distance is equal, tighten the crossmember-to-frame fasteners. If the transmission (i.e. isolator bolts) are not centered between the frame rails, remove the crossmember and use a rotary file in an air grinder or a rat-tail hand file to remove enough material from the bottom of the slotted mounting holes in the right side of the crossmember to allow the crossmember to be shifted in the direction needed to center the isolator studs in between the frame rails. If a sizeable amount of shifting is required to the passenger side, you may need to obtain/use bolts without flanged heads at the right side attachment points to permit enough shifting to that side. Ample left side shifting, if needed, is possible using the included fasteners.
2. Reinstall the crossmember, center the isolator mounting studs between the frame rails and then tighten all the mounting hardware.

**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).**

**LIMITATION OF LIABILITY – DISCLAIMER:**

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HOOKER™ makes no warranties of merchantability, of fitness for particular purpose, or that its products are approved for general use, or that its products comply with laws, regulations, or ordinances in the state where they may be sold to the ultimate purchaser, the consumer.

Unless expressly stated to the contrary in the catalog, instruction sheet; or price list, the entire risk as to the conformity of any company product in any such state and as to repair should the product prove to be defective or non-conforming, is on the retail purchaser, the buyer, the ultimate consumer, of such product and it is not upon the seller, distributor, or manufacturer.

In this connection, the retail purchaser, the buyer, the ultimate consumer assumes the burden of the entire cost of any and all necessary service, alterations, or repair.

**THE FOREGOING STATEMENT LIMITS THE LIABILITY OF THE MANUFACTURER.**

California vehicle code, sections 27156 and 38391, prohibits the advertising, offering for sale, or installation of any device, which modifies a vehicle's emission control system, unless exempted, unless otherwise noted. HOOKER™ Headers that have not received an Executive Order (E.O.) exemption from these code sections are not legal for sale or use in California on vehicles originally equipped with catalytic converters, except for racing vehicles, which may never be driven upon a highway. Check with your local authorities to determine if these headers are legal for use in your particular area.

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