



1993-2002 GM F-Body LS Swap Engine Mounting Brackets 3.4/3.8L V6 and LT1/LT4 V8 Equipped Vehicles Installation Instructions



71221001HKR (V6)



71221002HKR (LT1/LT4-V8)



Thank you for choosing to use Hooker Blackheart engine swap mounting brackets as part of your LS swap project. These mounting brackets are part of the most comprehensively engineered system of mounting components, headers and exhaust systems available for this application. Please read these instructions thoroughly before attempting installation.

PRE-INSTALLATION CONSIDERATIONS:

Installation of these engine mounting brackets requires the use of 1998-2002 GM Camaro/Firebird LS1 engine motor mounts. GM replacement rubber mounts (part number 22179268) or Hooker/Holley polyurethane motor mounts (71221016HKR clamshell housings and 71221016HKR or 71221017HKR inserts) are recommended. Aftermarket poly motor mount inserts from other sources have been found to deviate from factory design specifications and will cause installation issues.

The long horizontally installed through bolts/nuts that couple the engine mounts to the Hooker Blackheart engine brackets are to be user supplied. Stock GM bolts/nuts or the Hooker Blackheart 71223015HKR hardware kit are recommended to be used.

Installation of these brackets requires removal of the entire engine/cradle/front suspension/transmission assembly from the vehicle and its subsequent replacement. This operation is inherently dangerous and should be only performed by properly skilled individuals using the proper tools and dedicated automotive lifting equipment.

COMPATIBILITY INFORMATION:

When used with the related Hooker Blackheart **71222001HKR** or **71222002HKR** transmission crossmembers, these engine swap mounting brackets will replicate the factory engine/transmission location and inclination angle used in 1998-2002 LS applications.

These engine swap mounting bracket kits have been developed for compatibility with the Holley® **302-2** and **302-3**, or stock 4th-gen F-body LS oil pans. The stock 4th-gen F-body accessory drive system is intended to be used in this swap application.

Hooker Blackheart 4th-gen F-body LS exhaust components are compatible with these engine brackets under the following guidelines:

- Installation of Hooker Blackheart headers requires the installation of an LS application steering rack and intermediate shaft as well as a front end alignment following the completion of the swap.
- Installation of the Hooker 4th-gen dual exhaust system on 1993-97 cars requires installation of a Hooker Blackheart **71223002HKR** notch panel on the driver side floor brace to clear the left inlet tube of the exhaust system.

More LS 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.

INSTALLATION:

1. Raise, support and lock the vehicle in position.
2. Remove the engine/cradle/suspension/transmission assembly from the vehicle; use the appropriate factory service manual for the specific vehicle you are working on for step-by-step instructions on how to carry out this task and pay close attention to all listed safety precautions.
3. If installing an LS application steering rack on the cradle to provide exhaust header clearance, do so now; use the appropriate factory service manual for the specific vehicle you are working on for step-by-step instructions on how to carry out this task and pay close attention to all listed safety precautions.

4. Remove the engine and transmission from the cradle and set them aside.
5. Remove the existing engine mounting brackets from the cradle and clean the bracket mounting surfaces on the cradle.
6. Using the stock bolts, install the Hooker Blackheart engine brackets onto the cradle, as shown in **Figures 1 and 2** for V6 applications and **Figure 3** for LT1/LT4-V8 applications. The additional base plate holes (**marked B**) can be scribed, drilled and fitted with fasteners, if desired, for higher HP applications. Leaving these holes undrilled will have no effect on the strength/integrity of a typical swap installation.
7. Install new motor mounts on the LS engine to be installed and install the engine/transmission assembly onto the Hooker Blackheart engine brackets; fasten the engine brackets to the mounts using the user-sourced metric cap screws and flanged locking nuts.
8. Reinstall the engine/cradle/suspension/transmission assembly into the vehicle in the reverse order of steps that was used for removal. Attach the rear of the transmission to the vehicle by installing a Hooker Blackheart **71222001HKR or 71222002HKR** transmission crossmember, or a stock model-year appropriate 4th-gen T56 or 4L60 transmission crossmember.
9. The LS engine/transmission drivetrain is now mounted and ready for attachment of the exhaust system components.

Hole Use Legend	
A	Install bolt in matching factory hole.
A1	Install bolt in 3.4L applications – disregard in 3.8L applications.
A2	Install bolt in 3.8L applications – disregard in 3.4L applications
B	Mark, drill, and install bolt/nut in hole, if desired.

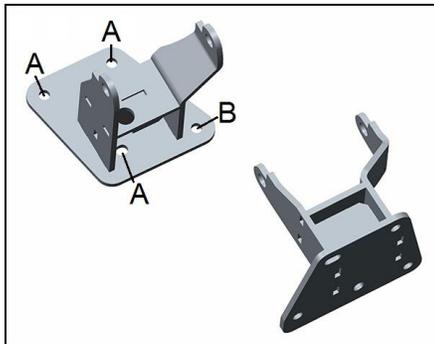


Figure 1 – V6 Driver's Side

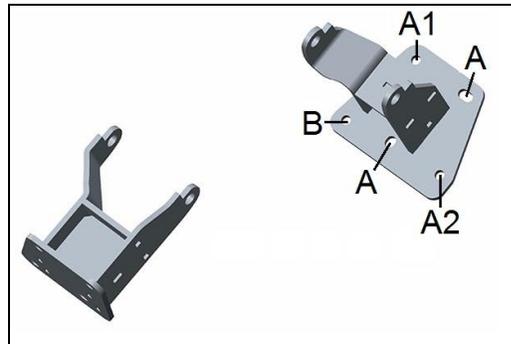


Figure 2 – V6 Passenger's Side

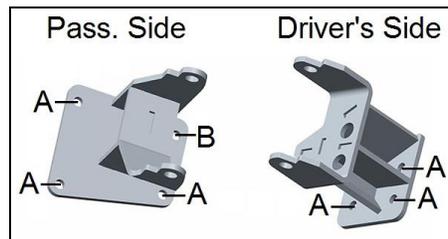


Figure 3 – LT1/LT4-V8

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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.

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