1967-69 GM F-BODY/1968-72 GM X-BODY LT SWAP ENGINE BRACKETS
P/N 71221012HKR
Installation Instructions

Thank you for choosing to use Hooker Blackheart engine swap brackets as part of your LT engine swap project. These mounting brackets are part of the most comprehensively engineered system of mounting components, headers and exhaust systems available for this 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.

PRE-INSTALLATION CONSIDERATIONS:

Check that the hardware package includes the following**:**

Qty.	Description
4	M10 x 1.5 lock Nuts
8	M10 x 1.5 x 30 Bolts
4	M10 x 1.5 x 25 Flat Head Cap Screws

Qty.	Description
4	3/8”-16 x 1.25” Bolts
4	3/8”-16 x 1/2” Bolts
4	3/8-16 Lock Nuts

Required Hardware (not incl.)	
Qty.	**Description**
2	7/16” -14 x 5-1/4” Bolts
2	7/16-14 Lock Nuts

These brackets are designed to be used in conjunction with stock GM 1972-up SB Chevy clamshell style engine mounts that will be retrofitted into the swap vehicle through the use of the specially designed spacer plates included with this kit. The clamshell mount cages and inserts can be obtained from Hooker/Holley as part numbers 771221004HKR, 71221014HKR (black insert), or 71221015HKR (red insert) respectively. Rubber mounts from other aftermarket sources (i.e. Anchor brand 2292 mounts) may also be used. In order to achieve the intended fitment and clearances of these components, it is highly recommended that new clamshell mounts be installed at the time of installation of the Hooker engine mounting brackets.

The combined use of these mounting brackets and the related Hooker Blackheart transmission cross members, will allow installation of an LT engine with a GM Powerglide, TH350, TH400, 700R4, 2004R, 4L60-4L70 or 4L80/4L85 automatic into any 1967-69 GM F-body vehicle without requiring any cutting or hammering to the vehicle body.

With the exception of the needed shifter hole, these components also permit no-cutting-required installation of a TREMEC® LS F-body/GTO T56 transmission into any 1967-69 F-body. TREMEC® aftermarket T56 Magnum transmission installations may require tunnel modifications for installation into a 1967-69 F-body.

Due to their lower transmission tunnel height, 1968-72 X-body vehicles may also require tunnel modifications to install either a TREMEC® LS F-body/GTO T56 transmission, or a TREMEC® aftermarket T56 Magnum transmission using the Hooker Blackheart system of engine mounts and transmission crossmembers.

An engine hoist will be required to position the engine/trans into the vehicle in its proper orientation. Use of an angle-adjustable engine sling will greatly ease the hoisting/loading operation and negate the possible need to reposition the lifting chains mid-operation. 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 /JACKSTANDS OF SUFFICIENT CAPACITY TO LIFT AND SUPPORT YOUR VEHICLE. NEVER WORK UNDER A VEHICLE SUPPORTED BY A FLOOR OR BUMPER JACK.

TIPS FOR A SUCCESSFUL ENGINE SWAP:

1. Get a wiring diagram of your vehicle and one for the vehicle from which the new motor was removed. Make photocopies of both systems; add your modifications to these copies, so you will have accurate records for future reference.

2. Think carefully before removing or defeating any emissions device; a legal engine swap requires the emissions components to be intact, especially when you try to sell the vehicle.

3. Save as much hardware that is removed from the donor engine as possible. You may need some of these items later on.

4. Taking the time to do it right is cheaper than taking short-cuts and having to do it again. Make sure you pay close attention to critical areas like fuel systems and brake lines. Neglecting to double-check your work could have life or death consequences.

5. Do not overstress components that are designed for stock four or six cylinder torque by over-abuse with a motor of greater horsepower, i.e. drive shafts.

6. Don't forget to upgrade your radiator, fan(s), and hoses to accommodate the cooling requirements of your LT engine.

VEHICLE PREP:

1. Open hood and place protective covers over fenders

2. Disconnect battery and fuel lines.

3. Remove existing wiring harness and set aside for later re-use of connectors, as needed, to complete electrical connections to the swap engine harness.

4. Drain and remove radiator/hoses from vehicle.

5. Remove the driveshaft, engine, engine frame stands, transmission, transmission crossmember, and related parts from the vehicle.

SWAP ENGINE/TRANS PREP:

1. Carefully remove the following components from the engine: spark plug wires, exhaust manifolds/O2 sensors, wiring harness/computer, MAF sensor, starter motor/plate and dust covers, A/C compressor and bracket, and the oil dipstick/tube and motor mounts.

2. Clean and paint parts to be re-used, if desired.

3. Secure engine or engine/trans assembly to lifting sling and engine hoist.

4. Attach the included left and right side Hooker Blackheart engine brackets to the engine; the proper indexing and left/right orientation of the brackets is achieved by ensuring the profiled clamshell **support ears** are positioned towards the front of the engine. The image depicted in **Figure 1** is that of the driver's side bracket and is included as an identification aid to the installer.

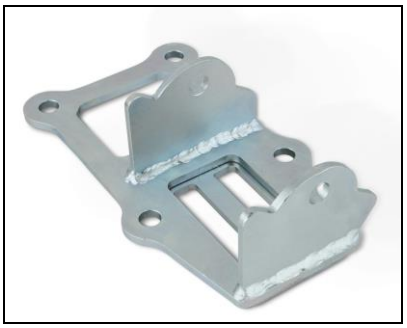

Figure 1 – Driver's side mount

ENGINE/TRANS INSTALL:

NOTE 1: Although it's possible to install Hooker Blackheart headers for this application after installation of this mounting kit has been completed, it is most efficient to move the driver's side header assembly into position around the steering box as you lower the engine into place. Once the engine has been lowered into place, you can complete the installation of the headers as per the instructions included in their packaging. Use an assistant to lower the engine slowly while you hold the header in position; use caution to keep your fingers clear of any potential pinch points.

1. Attach the included adapter plates to each side of the subframe. Drill two 3/8" holes through the subframe and prep the upper rear corner of the driver's side clamshell mount as indicated in **Figure 2** on the next page. Install nuts on all four countersunk bolts and tighten through the access openings you used to remove the stock frame stands; a 6" socket extension works well for this purpose.

    - If you are performing a **simultaneous engine and transmission installation**, it is recommended that you attach the rubber OE clamshell mounts to the engine brackets (two wide-spaced holes positioned up) with the required long horizontal bolts and then move the entire assembly into position in the engine compartment and lower it down onto the subframe. Adjust the angle of the engine and transmission until the mounts are fairly flat against the crossmember and install the included 3/8" bolts into the four holes on each mount; the shortest bolts are to be installed in the threaded holes at the rear of the plates. Now, install the remaining supplied nuts onto the four bolts that protrude inside the crossmember and tighten all fasteners.

    - If you are performing an **engine-only installation** at this time, it is recommended that you attach the engine clamshell mounts to the spacer plates attached to the subframe (two wide-spaced holes positioned up) with the supplied 3/8 bolts; the shortest bolts are to be installed in the threaded holes at the rear of the plates. Now, install the remaining supplied nuts onto the four bolts that protrude inside the crossmember and tighten all fasteners.

2. Move the engine into position in the engine compartment and lower it down onto the clamshell mounts. Adjust the angle of the engine so that the engine bracket ears are resting squarely on the clamshell mounts and install the long horizontally positioned bolts through each mount and install and tighten a nut on each.

3. Prop-up and support the transmission tail shaft and then proceed to install your Hooker Blackheart transmission crossmember and headers per the instructions included in their packaging.

4. If using, proceed to installing your Hooker Blackheart transmission swap crossmember and headers per the instructions included with their packaging.

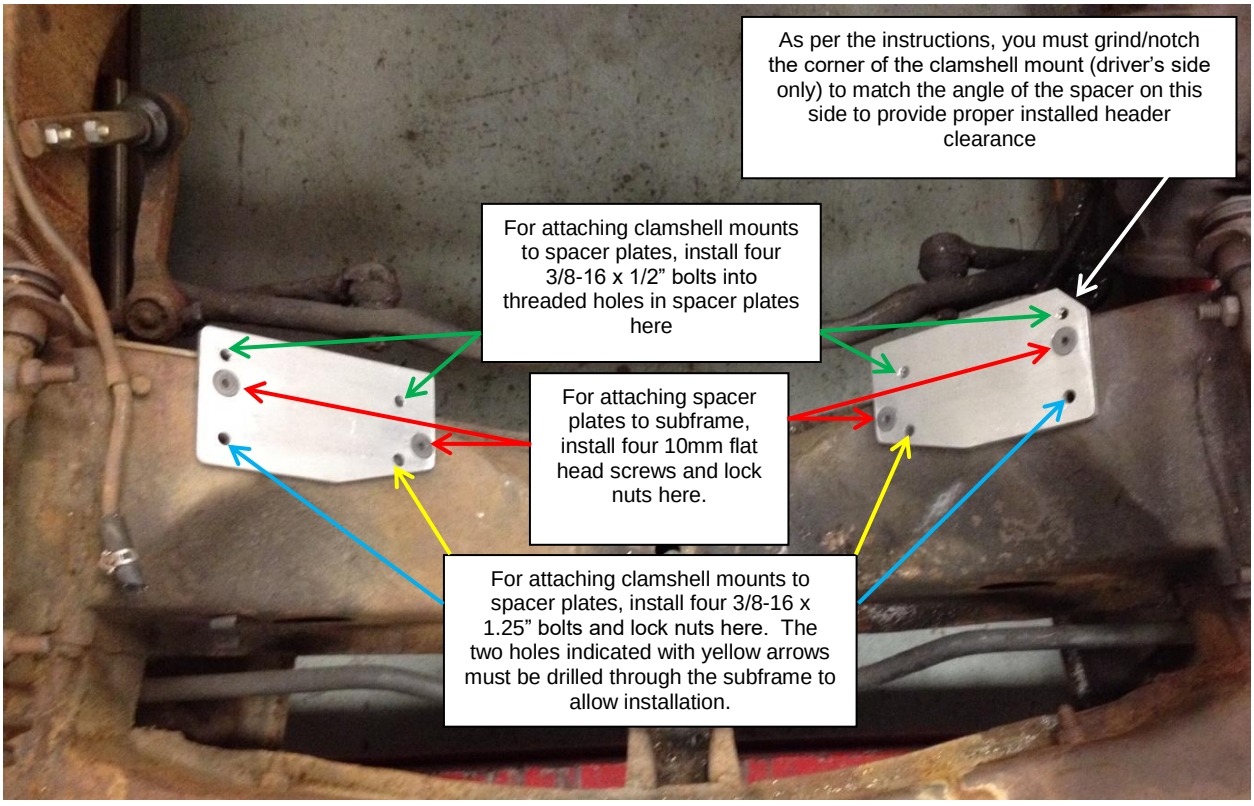

Figure 2 Adapter Plate/Clamshell Fastener Schedule

COMPATIBILITY:

These engine swap mounting brackets were specifically designed for compatibility with the Holley® **302-20** LT swap oil pan and Hooker Blackheart transmission swap crossmembers, headers, and exhaust systems listed below.

EXHAUST

Hooker Blackheart 70101352-RHKR LT swap long-tube headers and 70501318-RHKR / 70501319-RHKR (1967-1969 F-Body) and 70501320-RHKR and 70501321-RHKR (1968-1974 X-Body) exhaust systems.

ACCESSORY DRIVES

Accessory drive system/component compatibility is currently unknown for this application and is to be determined in the future.

VEHICLE COMPONENTS

Compatibility with any specific type/brand of windshield wiper motor, or power brake booster is unknown.

Not compatible with small block heater core, must use big block heater core to maintain heater function.

Not compatible with stock A/C evaporator case.