



**1994-2004 Ford Mustang Engine Swap Transmission Crossmember  
71222013HKR  
Installation Instructions**



Thank you for choosing to use this Hooker Blackheart transmission crossmember as part of your engine swap project. This crossmember is part of the most comprehensively engineered system of mounting components, headers and exhaust systems available for this vehicle application. Hooker Blackheart engine swap systems are 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 engine swap mounting system for 1994-2004 Ford Mustang vehicles. 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.

Installation of this crossmember with any of the below listed transmissions also requires the use of a specific spacer block or adapter kit as follows:

**LS swaps-**

- **TH400 or 2004R** transmissions - **12650HKR**
- **4L80/4L85** transmissions - **71223013HKR**

**Coyote swaps-**

- **6R80 or MT82** transmissions - **71223019HKR**

This crossmember is designed to be installed with a Prothane™ **7-1604** poly mount, or an Anchor™ **2268** rubber transmission mount for all transmissions applications listed for this crossmember.

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 vehicle application will be unsuccessful. When used with the Hooker Blackheart LS and Coyote engine mounting brackets also designed for this vehicle application, 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.**

Check that the hardware package includes the following:

Qty.	Description	Qty.	Description	Qty.	Description
1	Crossmember Assembly	1	Passenger's Side Frame Angle Bracket	2	3/8" Nuts
1	Transmission Spacer (5/16" thick)	2	Outer Frame Backing Plates	4	M10 Nuts
1	Transmission Spacer (3/16" thick)	2	3/8" Bolts	4	M10 Bolts

**INSTALLATION:**

**NOTE:** These instructions have been written with the assumption that you have already installed an LS or Coyote engine into your vehicle using a Hooker Blackheart engine mounting bracket kit, or mounting method prescribed by HOOKER™, for the specific engine K-member you are using.

**NOTE:** Some clearancing to the trans tunnel should be expected in the following areas:

- **T56/T56 Magnum** - around and just forward of the shifter area
- **TH400** (LS swaps only) - around the transmission cooler lines
- **2004R** (LS swaps only) - around the servo cover on the right side of the case
- **4L80/4L85** (LS swaps only) - around the transmission cooler lines, low-reverse band case lugs, and the electrical connector on the left side of the case.
- **6R80 or MT82** (Coyote swaps only)- rebuilding of tunnel over length of transmission required.

1. Raise the vehicle to a comfortable working height and support it by proper means.
2. If in place, remove the factory transmission crossmember from the vehicle.
3. Attach the transmission to the engine and then raise the tailshaft of the transmission as high as possible with a floor jack or screw jack.
4. Attach your chosen mount to the rear of the transmission (bolts for this purpose are user supplied) for all transmissions other than 4L80/4L85, 6R80 or MT82. The mounts for these transmissions will be attached later in step 7.
5. Using the supplied fasteners and backing plates, install the Hooker Blackheart crossmember into the car using the four holes located in the frame rails just behind the factory crossmember pockets. Begin by attaching the supplied angle bracket to the inside of the right side frame rail with the angle pointing towards the center of the vehicle. Feed two of the supplied M10 bolts through one of the supplied backing plates and then all the way through the frame rail starting from the outside of the frame rail. Feed the bolts through the angle bracket and install two of the supplied nylon lock nuts onto the bolts. Do not fully tighten the bolts/nuts at this time.
6. Set the flat foot of the crossmember onto the angle bracket then lift up the left side of the crossmember and attach it to the left side frame rail using the remaining M10 bolts/nuts (2 each). Using the supplied 3/8" bolts and nuts (2 each), attach the right side of the crossmember to the angle bracket.
7. Attach the transmission mount to the crossmember in the following fashion:

**4<sup>th</sup>-gen F-body T56 transmission** (LS swaps only) - lower the transmission tail down onto the crossmember. Before attaching the crossmember/mount together with the bolts supplied with the mount, place the supplied 3/16" thick spacer between the crossmember beam and the mount.

**Aftermarket T56 Magnum transmission** - follow step above for 4<sup>th</sup>-gen F-body T56 above and install supplied 5/16" spacer between the crossmember and mount along with the 3/16" spacer where required.

**TH400 or 2004R transmissions** (LS swaps only) - place the available **12650HKR** spacer block onto the beam of the crossmember then lower the transmission tail down onto the spacer block. Before fastening the crossmember/spacer/transmission together using the 7/16" bolts supplied with the spacer block, place the supplied 3/16" thick spacer between the spacer block.

**4L80 or 4L85 transmissions** (LS swaps only) - attach available **71223013HKR** adapter bracket and your chosen transmission mount to the extension housing of the transmission per the instructions included with the 71223013HKR adapter bracket. Before fastening the crossmember/mount/ together with the fasteners supplied with the your mount, place the supplied 3/16" thick spacer between the mount and the crossmember.

**6R80 or MT82 transmissions** (Coyote swaps only) - attach available **71223019HKR** adapter bracket and your chosen transmission mount to the extension housing of the transmission per the instructions included with the 71223019HKR adapter bracket. Before fastening the crossmember/mount/ together with the fasteners supplied with the your mount, place the supplied 3/16" thick spacer between the mount and the crossmember.

## **COMPATIBILITY INFORMATION:**

This transmission crossmember was specifically designed for bolt-in compatibility with the Hooker Blackheart LS and Coyote swap engine mounting bracket kits, cast iron LS exhaust manifolds, LS and Coyote 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 the Hooker Blackheart LS swap system for this application has been validated to be compatible with the Holley® **302-1** (will not fit 1994-1995 cars with stock or Maximum Motorsports MMKM-1 K-members), **302-2** or **302-3** oil pans in LS swap applications; compatibility with other aftermarket/OE engine oil pans is unknown. The engine/transmission positioning provided by the Hooker Blackheart Coyote swap system for this application has been validated to be compatible with the Moroso 20571 (with all K-members) and stock Mustang Coyote (with all K-members except UPR Performance) oil pans.