



**1996-2004 Ford Mustang - AJE and Team Z K-member  
Coyote Engine Swap Mounting Brackets  
BHS501 & BHS502  
Installation Instructions**



**BHS501**



**BHS502**

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

**PRE-INSTALLATION CONSIDERATIONS:**

These engine mounting brackets have been designed for use with current production **Team Z/TZM-KM-SWAP 4** or **AJE/MU40-UM** K-members only. Installation of the engine using these brackets has been validated to allow the use of the stock 2011-2017 Mustang Coyote or Moroso 20571 Coyote oil pans with these K-members (front of stock pan sump requires slight dimpling to use with Team Z K-member). Other aftermarket oil pans may also be compatible for installation with these engine brackets.

**BEFORE BEGINNING:**

Check that the hardware package includes the following:

<b>AJE brackets – BHS501</b>		<b>Team Z brackets – BHS502</b>	
<b>Qty.</b>	<b>Description</b>	<b>Qty.</b>	<b>Description</b>
2	M14 x 1.5 x 110mm Bolts	2	1/2"-13 x 3-1/4" Bolts
2	M14 x 1.5 Nuts	2	1/2"-13 Nuts
8	M10 x 1.5 x 25mm Bolts	8	M10 x 1.5 x 25mm Bolts

**INSTALLATION:**

1. Disconnect the battery.
2. Discharge any residual pressure in the stock fuel system.
3. Remove the stock driveshaft, transmission and engine from the vehicle.
4. Install the Team Z or AJE K-member into the vehicle per their included instructions.
5. Using the supplied M10 bolts, attach the Hooker Blackheart engine brackets to the sides of the Coyote engine to be installed. Install the bracket with the double "V" shaped notches along the outer profile of its base plate on the passenger's side of the engine and the bracket with the double "semi-circle" shaped notches on the driver's side of the engine (notches are to be facing the ground for correct orientation).
6. If you are using a Team Z K-member, chase through the holes in the engine mount stand tubes with a 1/2" drill bit to rid them of any burrs or welding slag that may be inside the tubes.

7. Lower the engine into the vehicle and down onto the K-member engine support stands. The M10 holes in the driver's side bracket are slightly slotted to account for manufacturing tolerances of the K-member. Adjust the bracket as needed to allow the engine the drop down over the mounting tubes of the K-member.
8. Couple the engine brackets to the K-member with the included M14 (AJE brackets) or 1/2" (Team Z brackets) bolts and nuts.

## **COMPATIBILITY INFORMATION:**

When used with the related Hooker Blackheart transmission crossmembers for 1996-2004 Mustangs, these engine brackets position the crankshaft centerline of a Coyote engine in the stock Ford 4.6L location. The engine/transmission mating plane will also be located in the stock 4.6L fore/aft position. This engine/transmission positioning provides maximized component clearances at the front of the engine and optimized U-joint working angles. This position also ensures compatibility with the following Hooker Blackheart headers and exhaust systems-

**BH3364** (1-3/4") **BH3365** (1-7/8") and **BH3366** (2") Coyote swap headers  
**705014138RHKR** and **705013138RHKR** 3" stainless steel muffler/turn-down exhaust systems  
**705014133RHKR** and **705013133RHKR** 2.5" full-length exhaust systems  
**705014134RHKR** and **705013134RHKR** 3" full-length exhaust systems

**NOTE:** The above referenced engine position will make clearance between the firewall and the CMCV actuators preset at the rear of Gen 2 and 3 Coyote engines tight, but will maximize the space available, between the engine and radiator, to install other components/parts.

## **TRANSMISSION INSTALLATION GUIDELINES – 1996-1998 model years**

These Hooker Blackheart engine mounting brackets are compatible with the following transmissions when used with the Hooker Blackheart transmission crossmember and adapter bracket referenced for each of them:

### **Powerglide (with JW Performance 92462-46P Ultra-bell) installation -**

Install using a Hooker Blackheart **71222012HKR** crossmember and **BHS508** adapter bracket along with a Prothane™ **7-1604** transmission mount. Tunnel clearancing may be needed for transmission case servo bore/cover on right side of transmission.

### **T45 (exc. Cobra, 1996-98 GT spec only) and 4R70W/4R75E installations -**

Install using the stock GT transmission crossmember and GT transmission mount.

### **6R80 or MT82 installations -**

Install using a Hooker Blackheart **71222013HKR** crossmember and **71223019HKR** adapter bracket along with a Prothane™ **7-1604** transmission mount. 6R80 installations may require slight hammer clearancing of the transmission tunnel just above the rear end of the transmission case only. MT82 installations should be expected to require extensive transmission tunnel modifications/rebuilding to clear the top side of the transmission and the shifter assembly.

### **TKO 500/600 (with Quicktime RM-6081 bellhousing) installations -**

Install using a Hooker Blackheart **71222012HKR** crossmember and **71223012HKR** spacer along with a Prothane™ **7-1604** transmission mount. Hammer clearancing of the tunnel sheet metal above the shifter housing will be required as well as possible cutting/trimming of the tunnel sheet metal to clear the shifter/shifter housing.

### **T56 Magnum (Ford spec, with Quicktime RM-8080 bellhousing) installations -**

Install using a Hooker Blackheart **71222013HKR** crossmember along with a Prothane™ **7-1604** transmission mount. Hammer clearancing of the tunnel sheet metal above the shifter housing will be required as well as possible cutting/trimming of the tunnel sheet metal to clear the shifter/shifter housing.

## **TRANSMISSION INSTALLATION GUIDELINES- 1999-2004 model years -**

### **Powerglide (with JW Performance 92462-46P Ultra-bell) installation -**

Install using a Hooker Blackheart **BH507** crossmember along with a Prothane™ **7-1604** transmission mount. Tunnel clearancing may be needed for transmission case servo bore/cover on right side of transmission.

### **T45, TR3650 and 4R70W/4R75E installations -**

Install using the stock transmission crossmember and mount (exc. 2003-2004 Cobra)

### **6R80 or MT82 installations -**

Install using a Hooker Blackheart **71222013HKR** crossmember and **71223019HKR** adapter bracket along with a Prothane™ **7-1604** transmission mount. 6R80 installations may require slight hammer clearancing of the transmission tunnel just

above the rear end of the transmission case only. MT82 installations should be expected to require extensive transmission tunnel modifications/rebuilding to clear the top side of the transmission and the shifter assembly.

**TKO 500/600 (with Quicktime RM-6081 bellhousing) installations -**

Install using a Hooker Blackheart **71222013HKR** crossmember and **71223012HKR** spacer along with a Prothane™ **7-1604** transmission mount. Hammer clearancing of the tunnel sheet metal above the shifter housing will be required as well as possible cutting/trimming of the tunnel sheet metal to clear the shifter/shifter housing.

**T56 Magnum (Ford spec, with Quicktime RM-8080 bellhousing) installations -**

Install using a Hooker **71222013HKR** crossmember along with a Prothane™ **7-1604** transmission mount. Hammer clearancing of the tunnel sheet metal above the shifter housing will be required as well as possible cutting/trimming of the tunnel sheet metal to clear the shifter/shifter housing.