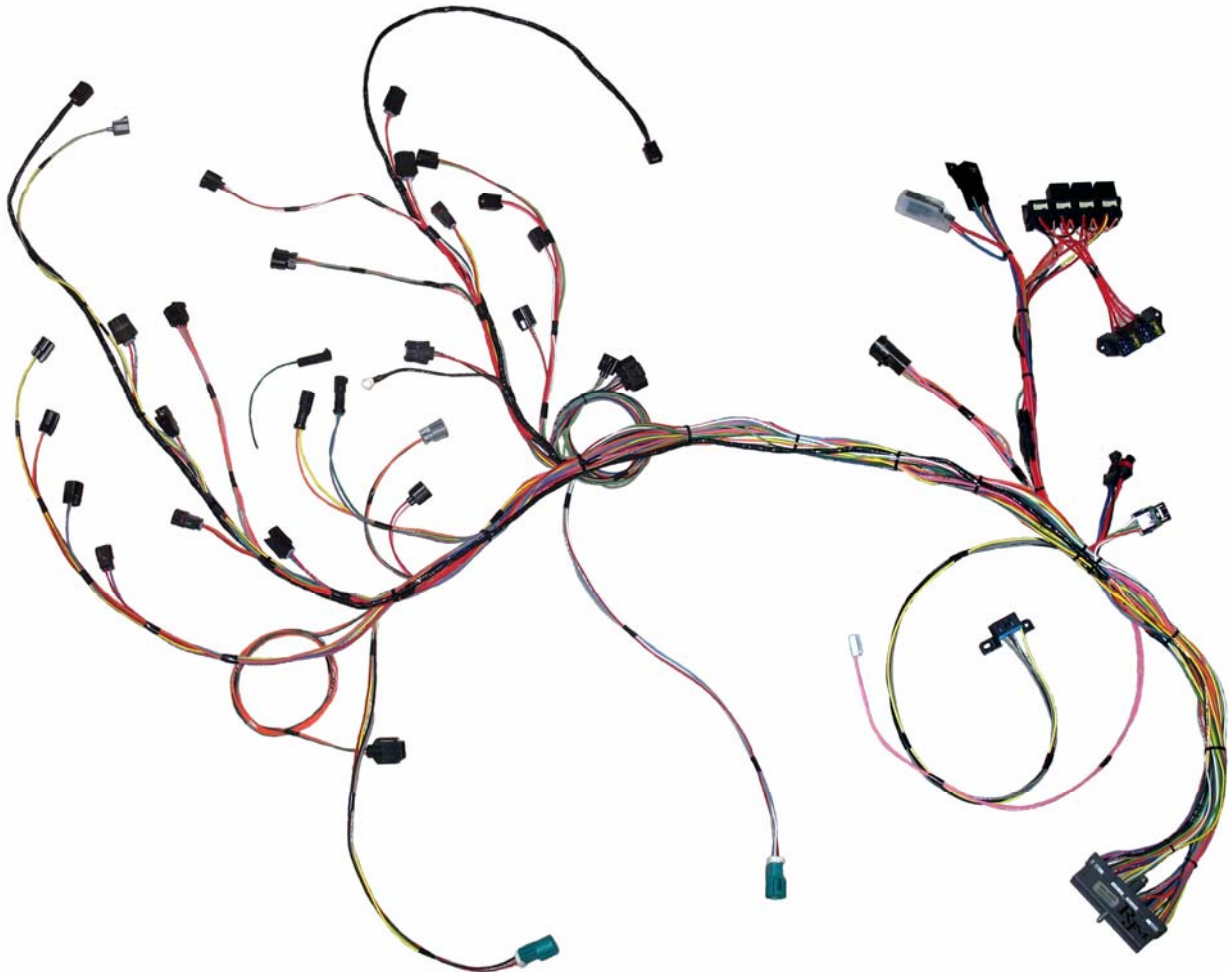


RJM

Injection Technologies

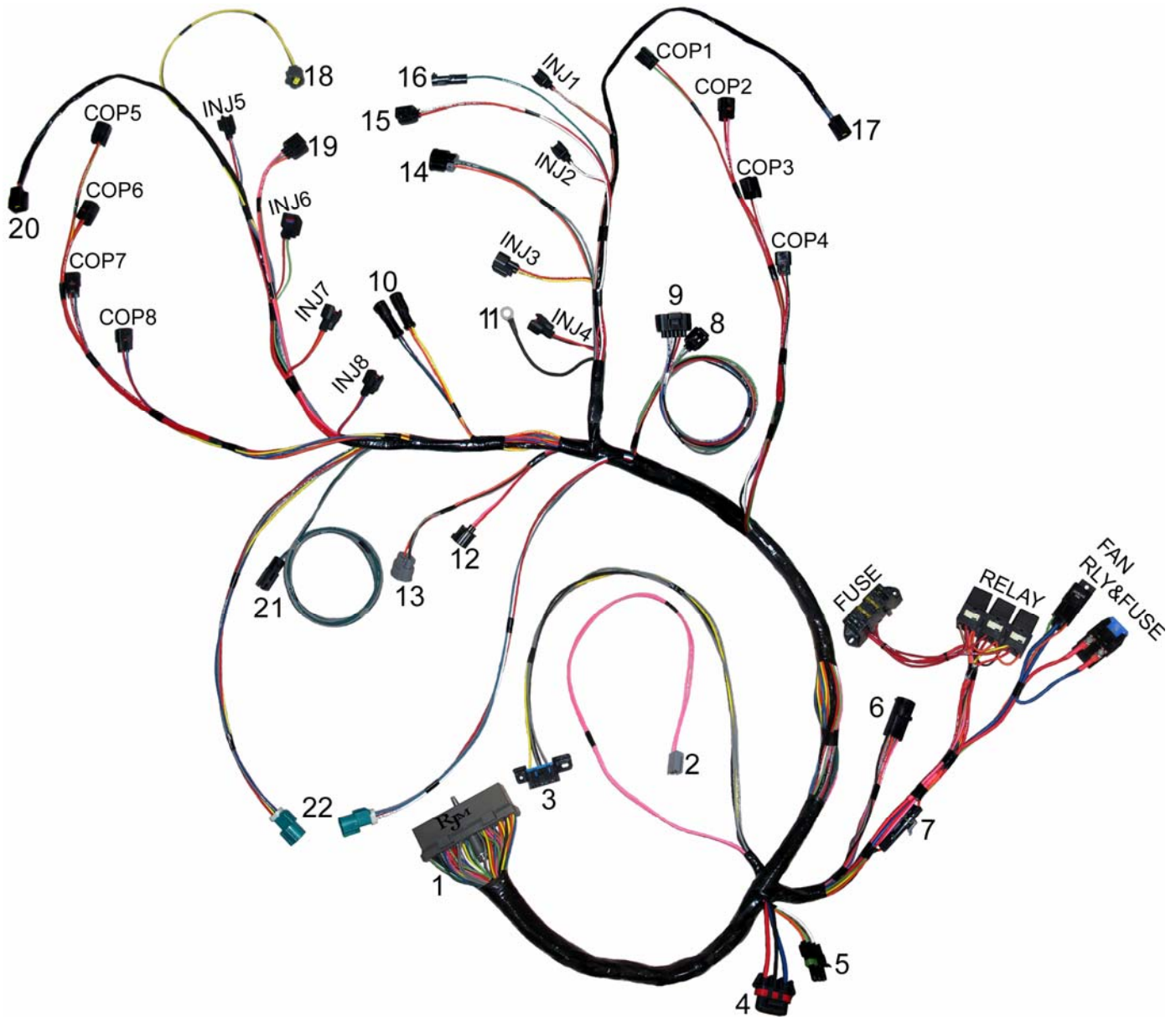
4.6L EFI Harness Installation Manual



- Make sure that all the components you have are compatible before installing them. This harness was designed for 1999-01 Mustang Cobra DOHC 4.6L technology.
- This harness is for Coil-on-Plug ignition system mounted inside the valve covers.
- This harness is set up for the MAF sensor on the passenger side.
- The DOHC harness is built with EV6 fuel injector connectors. If you have a SOHC engine contact RJM to exchange these for the EV1 connectors.
- Ford EFI systems were not intended for use with long tube headers. The Oxygen Sensors will be less accurate due to dissipated exhaust heat further down stream from the cylinder head. However this harness will work with all exhaust systems.
- Use caution when working on the fuel system, which should be 39 PSI before vacuum is applied. To relieve fuel pressure remove the fuel pump fuse, then start engine and allow it to stall. Crank starter for several seconds to insure all pressure has been released.
- Always disconnect the battery when working on vehicle's fuel or electrical systems. Any electrical spikes can damage parts of the fuel injection system.
- Use extreme caution if and when welding on any vehicle with a fuel injection system.

Pre-Installation Instructions:

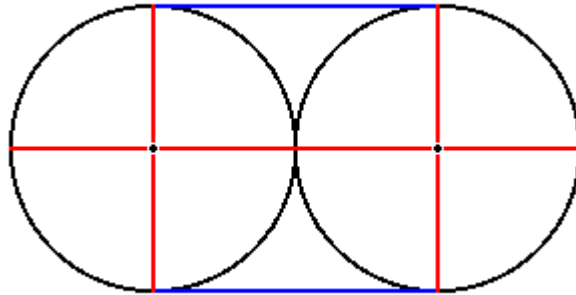
Before installation spread out the harness in a well lit open area to identify all the connectors and review the rest of this manual.



1) Computer connector	11) Engine Ground	20) Camshaft Position Sensor
2) Inertia Fuel Cutoff Switch	12) EGR Vacuum Regulator (EVR)	21) Vehicle Speed Sensor (VSS)
3) Data Link Connector (DLC)	13) EGR sensor connector (DPFE)	22) Oxygen sensors (HEGO)
4) Battery & Fan connections	14) Throttle Position sensor (TPS)	INJ1-8 Fuel Injectors
5) Dash connections	15) Idle Air Bypass (IAB)	COP1-8 Ignition Coil on Plug
6) Fuel Pump connection	16) Alternator connection	FUSE Main Fuse Block
7) Tachometer Adapter connection	17) Crank Position Sensor	RELAY Main Relay Block
8) Intake Air Temp sensor (IAT)	18) Coolant Temp Sensor (CTS)	FAN RLY Cooling Fan Relay
9) Mass Air Flow sensor (MAF)	19) Fuel Rail Pressure Sensor	FAN FUSE Cooling Fan Fuse
10) Knock sensors		

Installation Instructions:

- 1 Cut a 3" x 1.5" oval hole using the template provided below. Use a 1.5" hole saw and connect the 2 round holes to make an oval.



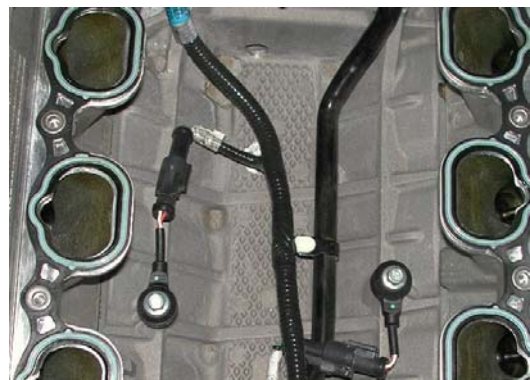
- 2 Pass the harness through the firewall and lay it on top of the engine. Make all engine connections before mounting the computer or covering the harness. This insures a quality installation.
- 3 Install all eight fuel injector connectors starting at the back and working your way around. Connecting the injectors now will help get the majority of the harness into position. **NOTE:** The DOHC harness is built with EV6 fuel injector connectors. If you have a SOHC engine contact RJM to exchange these for the EV1 connectors



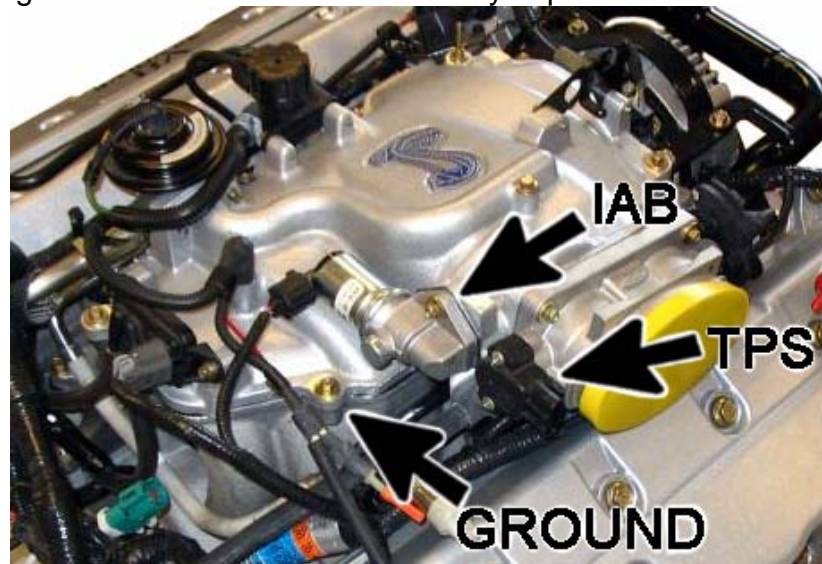
- 4 Remove the panel on the valve covers to connect the COP ignition coils. Connecting the coils now will help get the majority of the harness into position.



- 5 Connect the 2 Knock sensors under the intake manifold. You might need to remove the alternator or intake manifold to reach them. The left side wire colors are PUR & Dk-GRN, while the right side colors are ORG & YEL.



- 6 Bolt the engine ground to the back of the cylinder head or last intake bolt on the passenger side. **NOTE:** This is extremely important!



- 7 Reinstall the intake plenum and throttle body if it was removed previously. Now would also be a good time to finish the vacuum system. Connect Throttle Position Sensor (TPS) and Idle Air Bypass (IAB) before leaving the intake.
- 8 DOHC engine connect Coolant Temp sensor (CTS) on the drivers side of the coolant crossover tube.

If you have a SOHC engine the CTS will be in the front of the intake manifold on the passenger side, you will need to unwrap the harness and reroute this connector.



- 9 Carefully route for the Camshaft Position sensor (CAM) on the front of the drivers side cylinder head. Keep it away from the serpentine belt and exhaust header. Use the split loom and zip ties to keep it safe.

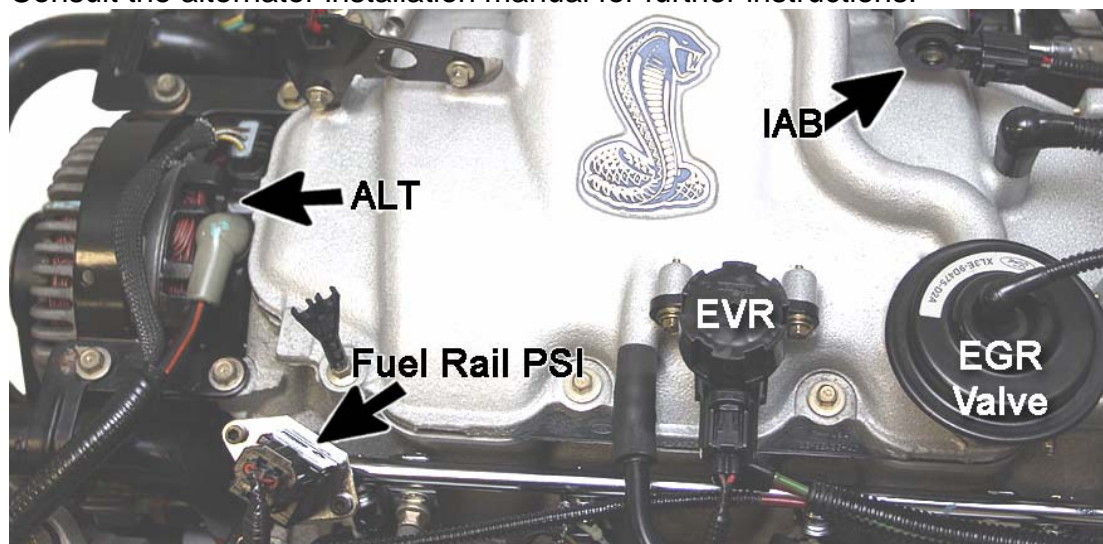
- 10 Carefully route for the Crank Position sensor near the bottom front of the engine. Keep it away from the serpentine belt and exhaust header. Use the split loom and zip ties to keep it safe.



- 11 Install the Mass Air Flow (MAF) sensor, air filter and air tubes. Connect the MAF and Intake Air Temp (IAT) sensor to the harness.



- 12 #16 supplies ignition power for your alternator. It is **NOT** meant to charge the vehicle, but to turn the alternator ON when the engine is running. You will need the correct adapter harness to match your alternator (3G, 4G or 6G). Consult the alternator installation manual for further instructions.

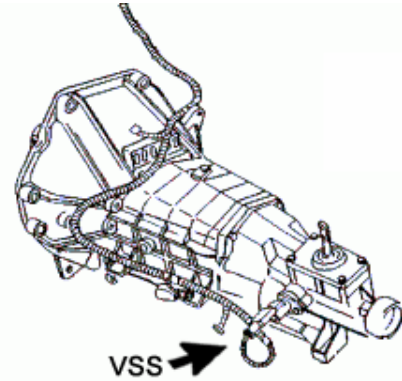


- 13 Connect the Fuel Rail Pressure sensor on the drivers side of the fuel supply rail. **NOTE:** This must be connected if you are using the returnless fuel system. However it could be deleted from the computer program if you are using an aftermarket fuel pump and pressure regulator.

- 14 Connect the DPFE sensor and EGR Vacuum Regulator (EVR) at the back of the engine. **NOTE:** The EGR system could be deleted from the computer program, if you have done so skip these connections. Make sure there are no vacuum or exhaust leaks when removing the EGR system. These must be connected if they were not removed from the program.



- 15 Plug in the Vehicle Speed Sensor (VSS) into the back of the transmission under the vehicle. Keep away from hot exhaust and moving parts like driveshaft.



- 16 Weld exhaust bungs into both sides of the exhaust approximately 9-12 inches from the last cylinder head exhaust port or 3" from the collector. Clean any debris from oxygen sensor ports and threads.
- a) Use a small amount of anti-seize on the O2 sensors threads when installing.
 - b) Connect the oxygen sensors to their connectors and attach any free harness to the firewall or frame to keep them from falling against the exhaust.



- 17 After the engine connections are made, you can route the under dash section and mount the EEC Computer, Inertia Switch, Relays & Fuse block.

- 18 Connector #1 is for the computer. Make sure the computer pins are not bent or damaged, then connect the harness with a 10mm socket. **NOTE:** Do not use air or power tools to install this connector!



- 19 Mount the Data Link connector under the dash in a location easily accessible for future diagnostic tests.



- 20 You must use an Inertia Fuel Cut-Off Switch to turn off the fuel pumps in the event of a crash. Mount the Inertia Switch completely upright and connect it to the harness. Mounting the switch any other way or bypassing this switch can cause a fire in the event of a crash. Before moving on, tap the switch until the red button springs up, and then reset it. This will get you familiar with how it works.



- 21** Connector #4 is for Battery and Fan connections.
- a) Red power supply wire: Connect this wire to Battery positive or the starter solenoid. You do not need to add a fuse; the harness is 100% protected.
 - b) Black ground wire: Connect this wire to a solid metal structure on the vehicle. The frame rail near the battery is best; make sure it is cleaned of paint or any other coating.
 - c) Blue fan wire: Connect this to the positive side of the cooling fan. You will need to ground the fan, do not connect the fan ground to this harness. This harness is designed for a single high speed fan, you may want to retune the computer programming fan control to your liking.

Color	Marked	Purpose
Red	BATTERY FEED	Power Supply for EFI system
Black	GROUND	Ground for EFI system
Blue	COOLING FAN	Powers an electronic cooling fan

- 22** Connector #5 is for Dash connections, connect the supplied wires:
- a) Orange wire marked "KEYED RUN": Connect this wire to the keyed ignition switch. This wire must have +12 volts with the key in RUN and START positions.
 - b) Green wire connects to the brake switch. This wire will tell the computer when you are braking, which will prevent stalling and improve the engine idle.
 - c) White wire connects to an aftermarket speedometer. This wire will tell the speedometer how fast the vehicle is going.

NOTE: Do not leave bare wires open under the dash if you skip the brake switch or speedometer!

Color	Marked	Purpose
Orange	KEYED RUN	Turn on EFI system when key is on
Green	TO BRAKE SWITCH	Tell computer when vehicle is braking
White	SPEED SIGNAL	Output signal for an electronic speedometer

- 23** Connector #6 is for the fuel system. The RJM 4.6L main harness is compatible with both returnless and return style fuel systems. The harness includes the return fuel pump power wire. This pink wire marked "INERTIA → F-P" is for powering your fuel pump(s). You will need to splice this wire if you are using more than 1 fuel pump. Make sure the fuel pump(s) are well grounded. Install aftermarket fuel pressure regulator and plumb fuel lines with appropriately rated line. RJM has an optional returnless fuel harness available to connect the Fuel Pump Driver Module and stock Ford fuel pump assembly.

- 24** Connector #7 is an inline connector used for running a tachometer with an optional aftermarket "Tach Adapter." Consult your Tach Adapter installation manual for further instructions.

- 25** Please take the time to run a Self-Test at #3 prior to starting the engine. This will clue you in to any connections you missed, and give you a base line to compare future tests against.