(K-0023)
INSTALLATION INSTRUCTIONS

2009+ 5.7L 6.1L 6.4L HEMI WITH 545RFE TRANS

HOT-ROD STYLE
Harness Image:

This engine is found in 2009 and up Ram Pickups, Durangos, Grand Cherokees, Chargers, Challengers and 300c's. You will want to get the Accelerator Pedal from the donor vehicle.

This harness uses a 2009 or 2010 Ram ECU.

*** Works with the 2003-2010 545RFE truck transmission ONLY! ***
Installation Instructions:

Our hotrod style harness is designed for the computers, fuse block and relays to be installed inside the vehicle under the dash. The harness is designed with a firewall grommet to pass the harness through the firewall and wrap around the engine from behind the right-side fuel rail.

Firewall Grommet

Locate a 2-1/4” hole in the firewall behind and slightly below the right-side injector rail.

Starting with the harness inside the passenger compartment, pass the harness out through the firewall hole starting with the largest connector (the transmission solenoid on an automatic harness).

Push the grommet out through the firewall then pull it back to seat it in the hole.

Harness Position

The main trunk should be positioned directly behind and slightly below the passenger fuel rail when installed. The branches that contain the coils and injectors should be zip-tied to the fuel rail so that all coils and injectors plug in with no strain on the plugs. Lining up the 2 front injector connectors first will allow the rest of the connectors to land on the engine near their final location.

Accessory items and items on the front of the engine block should hang over the front and be close to the correct sensors. Items on the sides of the block will fall down behind the heads and up under the exhaust manifolds. Transmission and O2 sensors will run down and back on either side of the transmission.

Basic Harness Positioning:
Basic Wiring Hookup

After the harness is placed on the engine and plugged in to the sensors, there are just a few connections to get the engine up and running:

1. **Harness Engine Ground** – The hotrod harness has a 3/8” main ground terminal. Bolt this terminal to the engine block.

2. **Red** (12v Hot at All Times) – This wire needs to be taken directly to the positive post on the battery. Long runs to the battery (ex. Trunk mount) may benefit from using 10ga wire. **DO NOT** take this lead to the starter post.

3. **Pink** (12v Run and start, ignition key on position) – This wire needs to be taken to the Ignition switch “On” or “Run” position. It is important that this maintains an unbroken connection to 12v while moving the key to the start position.

4. **Yellow** (12v in Start position only) – This is the wire that is used to trigger the starter. You must use the included starter solenoid wiring for the engine to start properly. *(Mopar muscle cars: You will need to use a momentary push-button starter switch with this wire on one post and 12v on the other post, the dual ignition circuit of a late 60’s to early 70’s Mopars will not work with a modern fuel injection system)*

5. **Brown** (Fuel Pump Hot Feed) – This is the power source to run the fuel pump. This is computer controlled so the pump will only run to prime when you turn on the key and when the engine is running. You will need to provide approx. 60psi of regulated pressure to the fuel rail. We recommend using any in-tank or external pump that will generate over 60psi and a 1999 Corvette fuel filter/regulator *(p/n: 1029-9146)* to create the correct fuel pressure.

6. **Battery Cables** (not included) – We recommend you make battery cables as follows:

   **Positive**
   a. Battery post to starter post.
   b. Battery post to alternator post (can be combined with starter cable).
   c. Battery post to interior fuse block.

   **Negative**
   a. Battery post to engine block.
   b. Battery post to frame.
   c. Battery post to body.
   d. Engine block to frame.
   e. Engine block to body.
   f. Body to frame.

Those are the minimum connections required to get the engine up and running.
Open Wire List – The Open wires are all located just inside the firewall near the grommet. They come out of the harness at the same location as the Datalink and Accelerator Pedal.

1. **Red** (12v Hot at all times) – Described on previous page.
2. **Pink** (12v Run and Start) – Described on previous page.
3. **Yellow** (12v Start position only) – Described on previous page.
4. **Brown** (Fuel Pump hot feed) – Described on previous page.

5. **Blue/White** (A/C compressor) – This is a wire connected directly to the A/C compressor clutch. Applying 12v to this wire will engage the clutch. This is usually hooked up at the end of the A/C system as shown in the following image.

![Diagram of Blue/White wire connection to A/C compressor clutch]

6. **White/Black** (Tachometer Signal) – This is a tap off coil #7 that can be used to create a signal for a tachometer. The pulse from this wire is the same as a **2-cylinder** engine. The tachometer will need to be set to 2-cylinder mode or you will need to use an external signal modifier (such as the Dakota Digital SGI-8) to correct the signal to work with your tachometer.

7. **Green** (Speedometer Signal) – This wire can be used to provide a speed signal to a programmable Speedometer.
Connector List:

1. **Computer Connectors** – 4 connectors for 545RFE automatic transmission.

2. **Relays**
   a. **Auto Shutdown Relay** – Power to injectors and coils.
   b. **Fuel Pump Relay** – Power to fuel pump.
      i. **Fuel Pump Hot Feed** – Connect to hot side of fuel pump.
   c. **Starter Relay** – Power to starter solenoid.
      i. **Starter Solenoid** – On top of starter. You MUST use our starter wiring for the engine to start/run properly.
   d. **Transmission Relay** – Power to the transmission.

3. **Fuse Block** – See attached diagram.

4. **Driver side Branch** – Run this up the left side fuel rail to the front of the engine.
   a. **Driver Coils and Injectors** – Run down the left-side fuel rail.
   b. **Capacitor** – Noise reduction, bolted to back of left head (p/n: 05149011AA)
   c. **Driver Knock Sensor** – Midway up the side of the engine block on the left side.
   d. **Throttle Control Module** – Front of intake.
   e. **Engine Temp Sensor** – Front top of block to the left of water pump.
   f. **A/C Compressor** – Accessory on front of block on the left side.
   g. **Driver Upstream O2 Sensor** – In the left exhaust pipe as close to the block as possible.

5. **Passenger side Branch** – Run this up the right-side fuel rail to the front of the engine.
   a. **Passenger Coils and Injectors** – Run down the right-side fuel rail.
   b. **Passenger Knock Sensor** – Midway up the side of the engine block on the right side.
   c. **Crank Sensor** – Rear of engine block on right side.
   d. **Cam Sensor** – Front top of block to the right of water pump.
   e. **Oil Pressure Sensor** – Front of block directly above oil filter.
   f. **Oil Temperature Sensor** – Right side of block directly above oil filter.
   g. **Generator** – Accessory on front of block on the right side.
   h. **Intake Air Temp** – In the intake air tube.
   i. **Transmission Line Pressure** – Right side of the transmission, near the back.

6. **Center Back of Engine**
   a. **Map Sensor** – Rear top of intake.
   b. **MDS/VCT** – Plugs in to harness that comes out from underneath the back of the intake.
   c. **Short Runner Valve** – Plugs in to back of intake manifold.
   d. **Engine Ground** – Use transmission bell-housing bolt at back of engine block.
   e. **Starter Solenoid** – On top of starter. You MUST use our starter wiring for the engine to start/run properly.
   f. **Transmission Solenoid** – Left side of transmission, halfway back.
   g. **Input Speed Sensor** – Left side of transmission, in front of Transmission Solenoid.
   h. **Output Speed Sensor** – Left side of transmission, behind the Transmission Solenoid.

7. **Under Dash Connections**
   a. **Data Link Connector** – Mount under dash for scanning.
   b. **Brake Light Switch** – Above brake pedal.
   c. **Accelerator Pedal Position Sensor** – Plugs in to top of pedal under the dash.
   d. **Open Wires** – Listed on previous page.
## Connector Identification:

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Image</th>
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<tbody>
<tr>
<td>A/C Compressor</td>
<td><img src="image" alt="A/C Compressor" /></td>
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<tr>
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<td>Datalink</td>
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<td>ECU Connectors</td>
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<td>Generator / Alternator</td>
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<td>Injectors and Coils</td>
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<td>Knock Sensors</td>
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<td>O2 Sensors</td>
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<td><img src="image1" alt="Map Sensor Image" /></td>
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<thead>
<tr>
<th>Oil Pressure and Temp Sensors</th>
<th>Accelerator Pedal</th>
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<td><img src="image8" alt="Output Speed Sensor Image" /></td>
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<thead>
<tr>
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<th>Brake Light Switch</th>
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<tbody>
<tr>
<td><img src="image9" alt="Transmission Line Pressure Image" /></td>
<td><img src="image10" alt="Brake Light Switch Image" /></td>
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<tr>
<th>MDS/VCT</th>
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<td><img src="image11" alt="MDS/VCT Image" /></td>
<td><img src="image12" alt="Short Runner Valve (SRV) Image" /></td>
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2009+ HEMI 5.7L/6.4L MDS/VCT AUTO

FUSE BLOCK

Battery Feed

Transmission Relay
14 Violet
20 Amp

ASD Relay
14 Orange
30 Amp

Starter Relay
14 Red
30 Amp

Fuel Pump Relay
16 Red
15 Amp

Trans Solenoid 1
16 Brown
10 Amp

Ignition (Run & Start)

Brake Switch #3
18 Orange
10 Amp

Brake Switch #1
18 Red
10 Amp

ALDL-16 C1-10, 29
18 Red
10 Amp

FP Relay C1-11 & 12
16 Green
10 Amp
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