



Service Bulletin

Subject: JK Hemi Conversion Sales Guide

Applicable Models: 2007-2018 Jeep JK Wrangler

Overview: This will cover what information is necessary to get from the customer when selling a Hemi kit, information the customer should be provided with, and answers to some common questions.

Necessary info for ALL Hemi orders: In order for the PCM to be programmed properly, a photo of the VIN plate on the vehicle, the model year of the Wrangler, the engine being installed, and the which transmission the vehicle is equipped with from the factory are all required pieces of information on the sales order. The VIN photos should be printed off and stapled to a copy of the sales order for the shop.

Information the customer should have:

- The PCM calibration was developed assuming a completely stock crate engine. We cannot support engine modifications or power-adders. If the PCM needs to be recalibrated by AEV due to the calibration being modified in an attempt to “tune” the powertrain, AEV charges a \$250 reprogramming fee
- The AEV conversion was designed around the passenger car variants of the Hemi engine rather than the truck engines. Donor engines should come from a Charger, Challenger, or Grand Cherokee. The truck engines have a lot of different parts that have to be changed in addition to what is on the Bill of Materials. We cannot provide a complete list of what needs to be changed for a truck engine to work, but as an example the 5.7L’s have an entirely different Front Engine Accessory Drive (FEAD), the intake manifold is incompatible, and the 6.4L truck engines have a different compression ratio from the high performance 6.4L, making the PCM calibration incompatible.



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- The JK needs to be equipped with the Connectivity Group from the factory. This is essentially the system that allows for hands-free phone calls through U-connect. If the vehicle does not have these features, they can be added.
- AEV no longer offers a kit to install a manual transmission with the Hemi. There is a way to install an automatic transmission and Hemi in a JK that has a manual transmission from the factory, but support information is limited and installation instructions do not exist.
- This is a rare question to encounter, but AEV did have a \$400 core charge on 6.4L intake manifolds in order to modify factory intakes for use with our kits. That is no longer the case so if someone asks we no longer charge and we also no longer reimburse for intakes sent to us.
- 6.4L intakes will need to have gaskets transferred from the intake that the engine came with and the AEV modified 6.4L intake. If this is not done oil will leak out of the intake manifold.

Quirks of the Hemi Conversion (all years)

- The oil life reminder system will be rendered inoperable by the conversion
- The dealership Wi-Tech scan tool cannot read this PCM, though most of the inexpensive universal scan tools available at most auto parts stores will read codes without issue
- It is strongly recommended that the factory V6 PCM be kept after the conversion for use during service visits. It is needed in order to program new keys and is recommended to be plugged in as a “dummy” during any dealership programming procedure on the vehicle
- The code P0633 will set in every AEV Hemi conversion, this will not affect drivability of the vehicle or activate any warning lights, it just exists in the background

3.8L-Specific Information (2007-2011)

- Chrysler used several different valve bodies with this transmission, color-coded by the color of the electrical connector visible on the outside. To be compatible with the kit the color of the connector needs to be white or clear. Later generations used black, brown, or gray connectors which are incompatible and can lead to odd shifting characteristics. The valve bodies are interchangeable on the transmission itself, so if they do get a transmission with the wrong valve body they can just swap the valve body



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- AEV offers a fan conversion harness to install the higher flowing fans from a later generation 3.6L Wrangler. However, most overheating issues are caused by an actual problem in the cooling system rather than insufficient fan power. Prior to installing this conversion, the base cooling system should be verified if there have been chronic overheating issues

3.6L-Specific Information (2012-2018)

- The transmission WILL go into limp mode if the axle gear ratio does not match what is programmed in the vehicle, make sure the programmed gear ratio is accurate for what is physically installed in the axles.

Engine Selection Information:

- VVT 5.7L engines were first introduced in the 2009 model year, any 5.7L prior to then would be a non-VVT engine. We can no longer source the PCM's used in the non-VVT conversion.
- VVT engines produce more peak power, but most importantly they have much more area under the power curve and can make more power throughout the RPM range versus a non-VVT engine
- All 6.4L engines have VVT, all 6.1L engines are non-VVT

PCM information:

- 2007-2011 with VVT engines use Mopar PCM 5150500AA, use factory service information on 2010 Grand Cherokee 5.7L for pin locations, wire colors may not match.
- 2012-2018 use Mopar PCM 5150611AC, use factory service information on 2012 Grand Cherokee 5.7L for pin locations, wire colors may not match.
- 2007-2011 JK's with non-VVT engines used part number 5150258AC from a 2008 Grand Cherokee, these PCM's have become increasingly difficult to source.