



HP EFI SMART COIL SUB HARNESS P/N 558-312

Overview

PN 558-312 contains two terminated harnesses designed for use with Holley HP Smart Coils (PN 556-112) used on 8 cylinder engines. One end plugs directly into the Holley smart coil. The other end is terminated with a 7-pin metripak connector. This connector plugs into the Holley Universal Coil-On-Plug harness (PN 558-307, not included), Holley LSx main harnesses, or factory GM LSx harnesses. The layout is similar to factory GM LSx coil harnesses with some added length for coil mounting flexibility.

Installation

1. The coil connectors are marked based on engine type (GM/Others with 1-3-5-7 and 2-4-6-8 cylinder banks and Ford 1-2-3-4 and 5-6-7-8 cylinder banks). Install these as marked. The 7 pin metripak connectors (it has 8 cavities and 7 are populated) are labeled "GM EVEN" and "GM ODD". The "GM EVEN" plugs into the "DIS CONNECTOR EVEN" on the 558-307 harness or "IGNITION EVEN" on Holley LSx main harnesses. The "GM ODD" goes into corresponding "ODD" connectors on these harnesses.
2. For all applications, there is a 12 gauge BLACK ground wire that is separate in this harness. Connect this wire to a sturdy ground location that has a direct ground path to the battery. This connection should be independent of other grounds. Do **NOT** connect this ground wire to sheet metal, or other locations that may not have a solid ground path to the battery. If this wire needs to be extended, use 10-12 gauge wire and appropriate connectors.
3. Power and Ground Wiring – When running power and ground wires to these coils, bigger is always better. The RED power feed wire (pin H) and the BROWN ground wire (pin A) at the 7 pin metripak connector, are the two wires that must carry higher current loads. The proper connection of these wires can vary depending on your application. The different requirements for the most common installations are explained below.

3A. Stock and mild LSx applications with coil dwells set to 4.5 milliseconds and below:

Connect the ODD and EVEN connectors to the matching ODD and EVEN connector of the Holley EFI LSx main harness. Make sure the main harness coil grounds are connected to the back of the heads per the Holley EFI wiring instructions.

3B Applications using the 558-307 with coil dwells set to 4.5 milliseconds and below:

The 558-307 universal coil-on-plug harness was designed to provide power and ground to an OEM type LSx coil, and incorporates an 18 gauge RED power wire to the (H pins) of the ODD and EVEN connector. It is advised to cut the existing 18 gauge RED wire, leaving enough wire to connect and replace it with a 14 gauge RED wire as close as possible to the 7 pin metripak ODD and EVEN connector. This power supply should be wired through a relay, and not directly to the battery. **Tie the ground wires (pin A) directly to the cylinder heads and keep that wire as short as possible.**

3C. Applications that exceed 5.0 milliseconds of dwell and run at higher RPM (7500+) **OR** applications that run these coils in a waste-fire mode (no cam sync):

It is recommended to run 10-12 gauge wire power and ground directly to the 558-312 coil harnesses and bypass the metripak connector. Using an appropriate length of 10-12 gauge wire and the supplied splice connector and shrink tubing, replace the existing splice on the 4 coil power wires (RED), bypassing the 7 pin metripak connector. Perform the same operation on the existing splice on the 4 coil ground wires (BROWN). This splice/wiring should replicate what is used for the BLACK wire in these harnesses (**Fig. 1**). This kit contains 4 cavity plugs that can be installed if the power and ground wires are removed from the 7 pin metripak connector. Four crimp splices and heat shrink are included for this purpose.



Figure 1

Connector Pinouts

These are pre-terminated.

Coil Connectors

- **Pin A** – Coil Trigger – Connect to individual ECU EST Outputs. EST A should go to cylinder #1, EST B to cylinder #2, etc.
- **Pin B** – Coil Trigger Ground – These can be all tied together and go to Pin B14 (EST Ground Output).
- **Pin C** – Ground to Cylinder Head – This ground **MUST** go to the cylinder head that the coil is discharging to. It is recommended to tie each cylinder bank together. Do **NOT** connect any other grounds to this point. This **MUST** be the only ground in this location.
- **Pin D** – Battery Ground – This high current ground should go to the battery or to a ground stud that is directly connected to the battery. Do **NOT** ground on sheet metal, etc.
- **Pin E** – High current switched +12V Power – Do **NOT** connect directly to the battery. It is recommended to install to a 40A relay source to power all 8 coils.

Metripak Connector Pinouts

This information is contained with the 558-307 harness.