



## STAR ONLINE PUBLICATION



**Case Number: S2209000003**

**Release Date: March 2022**

**Symptom/Vehicle Issue:** Complete Engine Assembly Replacements Arriving Without Engine Wiring Harness.

**Discussion:** Due to a shortage of wiring harnesses at the engine assembly plant, the following replacement engine assemblies are temporarily being shipped without an engine wiring harness.

- 05158052AG – 2014-2019 Jeep Grand Cherokee (WK)
- 05158048AF – 2019-2019 Ram 1500 (DS)

When installing the replacement engine, you will need to transfer the engine wiring harness from the original engine, onto the new assembly. Please take care when removing the original engine and harness to avoid any potential damage to the wiring harness.

The new engine assemblies will arrive partially disassembled to allow for easier installation of the wiring harness. The remaining components needed to completely assemble the engine once the harness is installed, will be in a separate kit supplied with the engine. The components included in this kit are:

- High Pressure Fuel Supply Lines for the following components
  - Fuel Injectors 1, and 2 on the passenger side bank.
  - Fuel Injectors 4, and 5 on the driver's side bank.
  - Fuel Rail Supply line, injection pump to passenger side rail.
- Pipe Assembly, EGR valve to Intake Manifold.
- Foam Pad, Injection pump impact cover
- Injection pump impact cover.
- Engine harness support bracket.
- Associated nuts and bolts for installing the above components.

Please refer to the following repair procedure to install the original harness on the new engine assembly.

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### Repair Procedure:

**NOTE:** Take care when removing the original engine from the vehicle, and wiring harness from the original engine, to avoid damaging the harness.

**NOTE:** The open ports on the fuel system components (e.g. fuel rails, fuel injectors, and fuel injection pump) will have protective caps installed to ensure system cleanliness. To maintain fuel system cleanliness, do not remove these protective caps until instructed to do so.

1. Once the original engine has been removed from the vehicle, carefully remove the engine wiring harness.
2. Carefully lay the engine harness on top of the new engine.
3. Secure the wiring harness beauty cover over the stud on the passenger side valve cover. Please see (Figure 1).



Figure 1.

4. Route the rear of the harness on the driver's side, under the #6 fuel injector fuel line. Please see (Figure 2).

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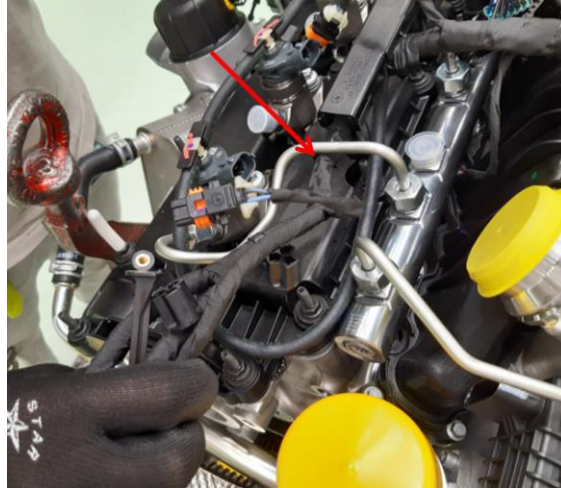


Figure 2.

5. Secure the harness retaining clips to the appropriate studs and ensure the harness is over the fuel return line. Fit the harness cover onto the valve cover studs. Please see (Figures 3&4). Take care not to pinch the fuel return line.

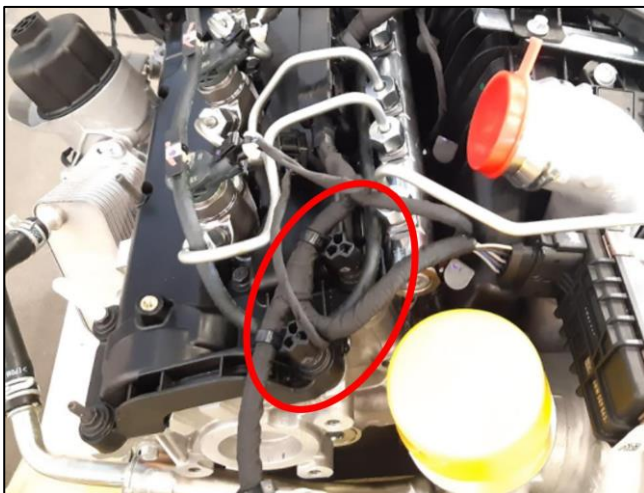


Figure 3

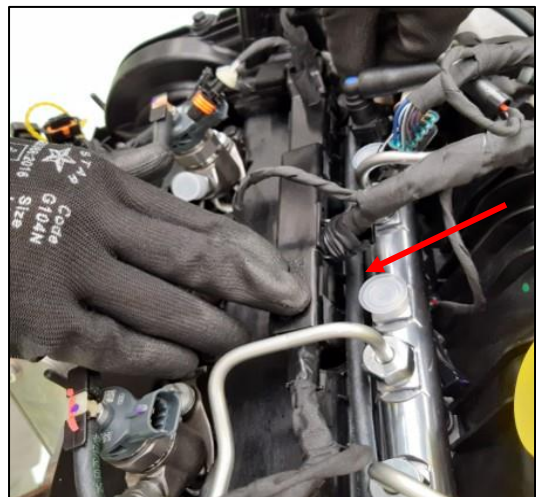


Figure 4

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6. Secure the front of the harness on the driver's side, onto the studs as shown. Please see (Figure 5).

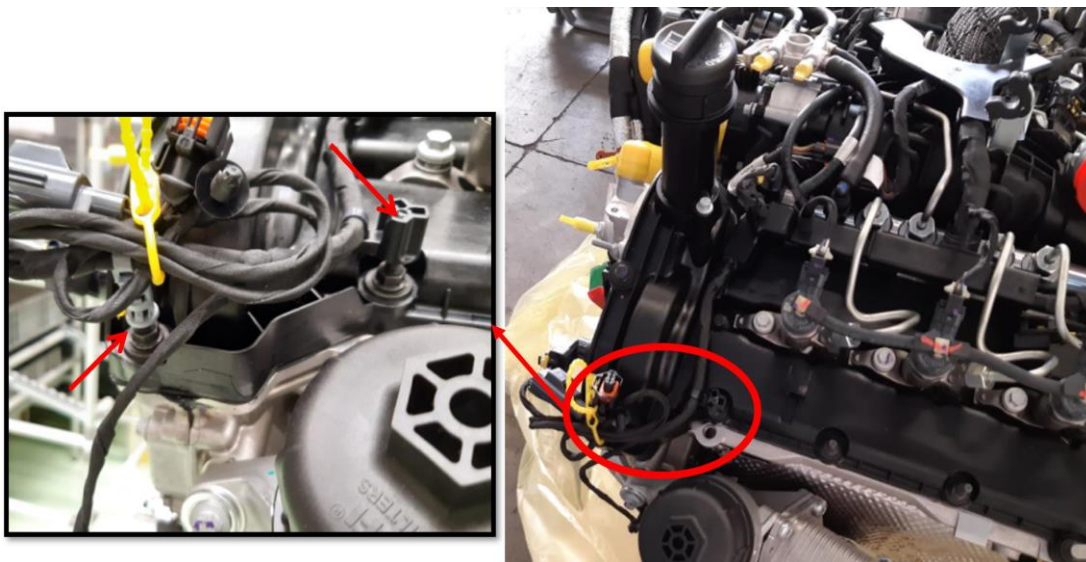


Figure 5

7. Connect the electrical connectors for the following components.
- Oil pressure and temperature sensors.
  - Glow plugs 4, 5, and 6
  - Injectors 4, 5, and 6
  - Swirl valve/throttle body jumper harness connector.
  - Turbo VGT connector
  - Exhaust manifold pressure sensor.
8. Remove the associated protective caps and install the high-pressure fuel lines for injectors 4 and 5. Install the fuel line hand tight.
9. Connect the EGR Cooler, and Throttle Body Temperature sensor electrical connectors. Please see (Figure 6).

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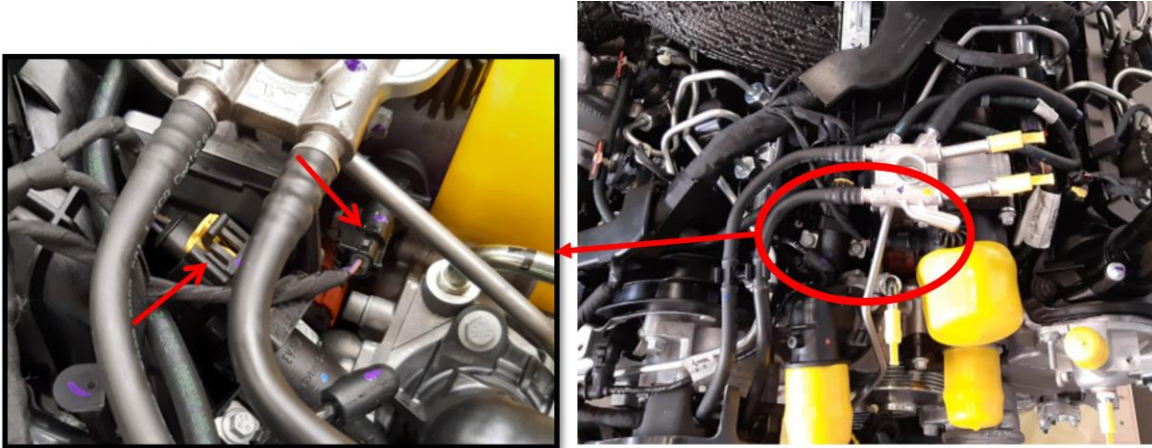


Figure 6

10. Carefully disconnect the vacuum line from the vacuum pump fitting on the passenger side upper timing cover and position it out of the way. Do not fully remove the vacuum line.
11. Remove the associated protective caps and install the high-pressure fuel supply line from the injection pump to the passenger side fuel rail. Install the fuel line hand tight. Be sure to route the fuel line under the harness and fuel return line.
12. Install the high-pressure fuel supply line retaining clamp to the valve cover stud with the supplied nut, and secure hand tight. Please see (Figure 7).

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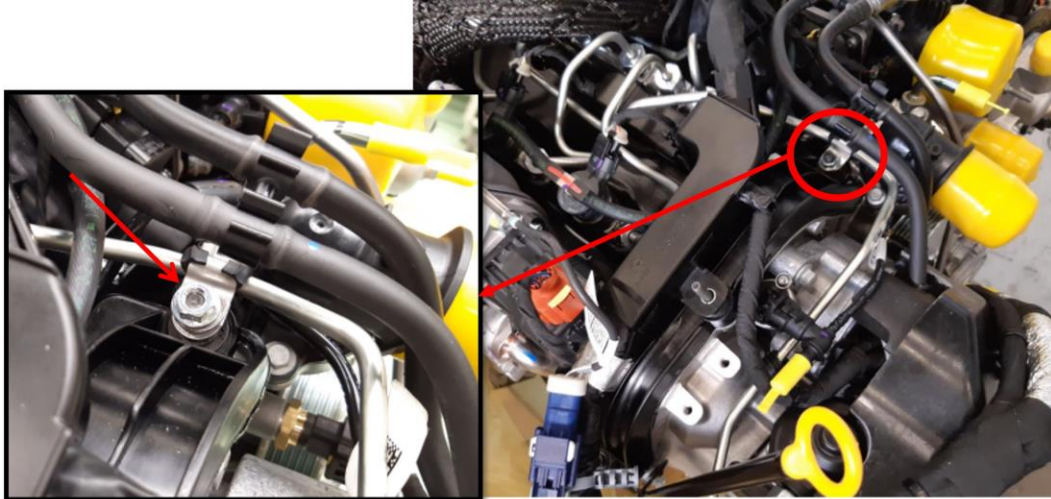


Figure 7

13. Reinstall the vacuum line previously removed in step 10, onto the vacuum pump.
14. Secure the harness to the high-pressure fuel supply, and fuel injection pump supply lines. Connect the electrical connectors for the FQS and Coolant Temperature Sensor. Please see (Figure 8).

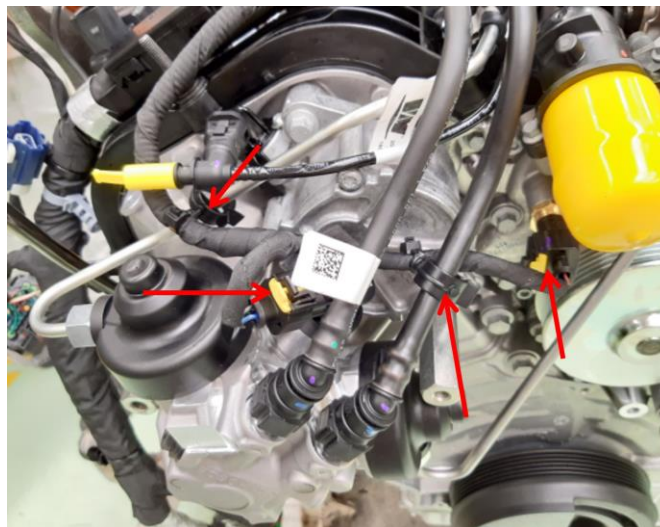


Figure 8.

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15. Remove the associated protective caps, and install the high-pressure fuel lines on fuel injectors 1 and 2. Install hand tight.
16. Connect the electrical connectors for the glow plugs, and fuel injectors for cylinders 1, and 2.
17. Connect the electrical connectors for the EGR valve and EGR temperature sensor.
18. Install the supplied engine harness support bracket using the supplied M6 bolts and secure the harness to the bracket. Please see (Figure 9). Tighten the bolts to 8 ft/lbs. (10.8 nm).

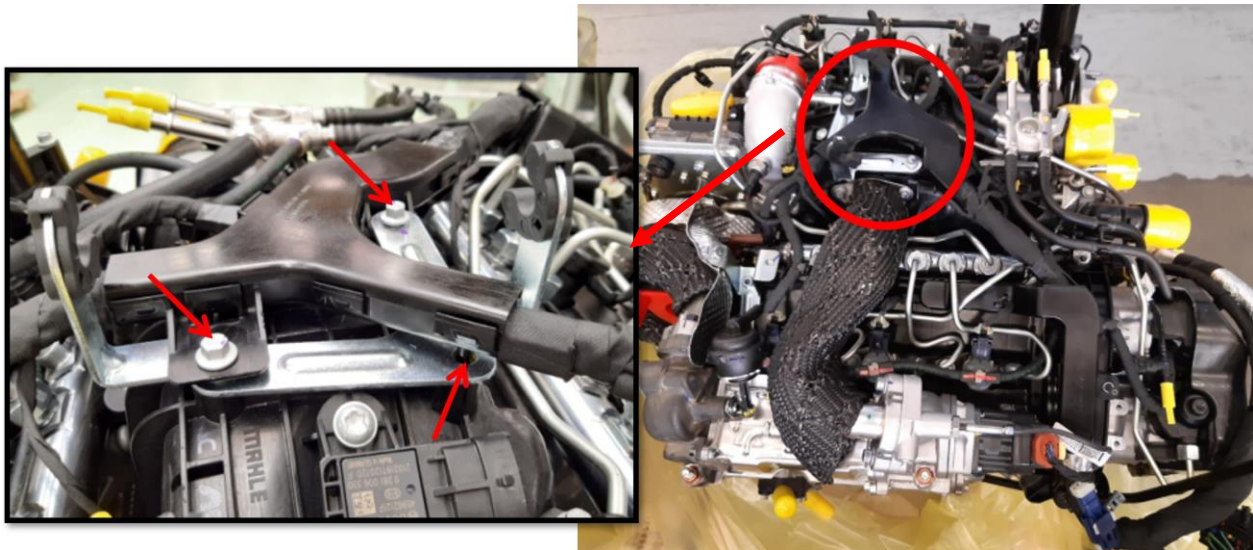


Figure 9

19. Tighten all high-pressure fuel line nuts for the fuel injectors and fuel rail supply line that were installed hand tight. Torque the fuel line nuts in the following sequence.
  - a. Torque to 8 ft/lbs. (11 nm).
  - b. Torque to 30 ft/lbs (40 nm).
20. Torque the passenger side high-pressure fuel rail supply line retaining clamp nut to 8 ft/lbs. (10.8 nm).
21. Connect the electrical connectors for the #3 glow plug and fuel injector. Secure the harness to the #3 fuel injector supply line. Please see (Figure 10).

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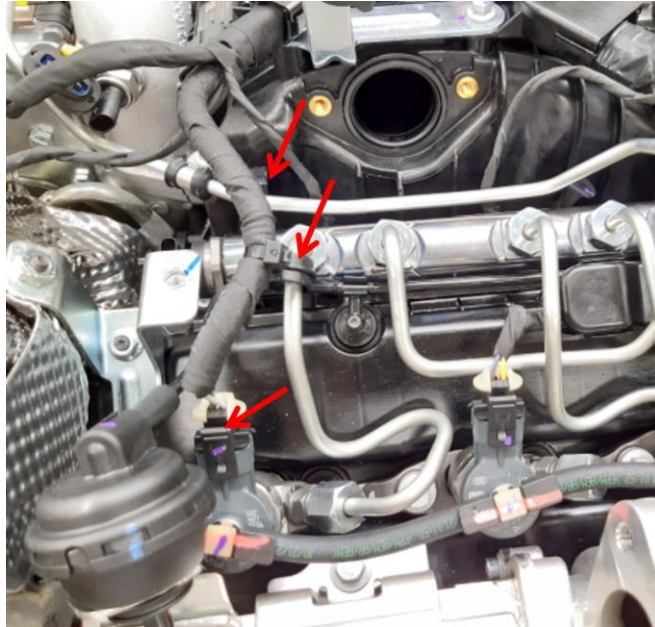


Figure 10

22. Connect the electrical connectors for the following components.
  - a. Fuel rail pressure sensor.
  - b. CAC Inlet temperature sensor.
  - c. Boost pressure sensor
  - d. Passenger bank swirl valve position sensor.
23. Install the EGR cooler to intake manifold pipe assembly using the supplied M6 and M8 bolts.  
Torque to the following:
  - a. M6 bolts (pipe to intake manifold connection). Torque to 8 ft/lbs. (10.8 nm).
  - b. M8 bolts (pipe to EGR cooler assembly connection). Torque to 18 ft/lbs. (24.5 nm).
24. Install the injection pump impact cover foam pad over the injection pump and install the injection pump impact cover using the 4 M8x50 bolts. Torque the bolts to in the following sequence.
  - a. Torque to 8 ft/lbs. (10.8 nm).
  - b. Torque to 18 ft/lbs. (24.5 nm).
25. Continue with the installation of the engine.

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**NOTE:** Once the engine installation is complete, please be sure to program the new injector flow rate codes into the PCM via the wiTECH Injector Quantity Code programming routine in PCM Misc. Functions. The new injector codes can be found on the lower barcode sticker, on the injection pump impact cover. Please see (**Figure 11**).



Figure 11

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