CERTAIN 2021-2022 MODEL YEAR MUSTANG MACH-E VEHICLES — HIGH VOLTAGE BATTERY JUNCTION BOX (HVBJB) REPLACEMENT AND POWERTRAIN CONTROL MODULE (PCM), BATTERY ENERGY CONTROL MODULE (BECM), AND SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C (SOBDMC) SOFTWARE UPDATE

SERVICE PROCEDURE

1. Replace the High Voltage Battery Junction Box (HVBJB). Follow the Workshop Manual (WSM) procedures in Section 414-03A.

2. Connect a battery charger to the 12V battery.

   • Use of a heavy-duty charger is recommended to maintain proper battery voltage during this procedure.

NOTE: Verify that the negative cable of the charger is installed on a chassis or engine ground, and not the 12 volt battery negative terminal to prevent the battery saver mode from activating on the vehicle.

NOTE: If the diagnostic software does not load or if the vehicle cannot be identified properly, make sure there is a good internet connection and the Vehicle Communication Module (VCM) is properly connected to the Data Link Connector (DLC.)

3. Log into Ford Diagnostic and Repair System (FDRS).

NOTE: Vehicle information is automatically retrieved by the diagnostic software and a Network Test is run. Vehicle identification data appears on the screen when this is complete.

4. Click 'Read VIN from Vehicle' or manually enter the VIN.

NOTE: Available modules are shown on the LH side of the screen, and available procedures are listed on the RH side of the screen. Modules that are communicating are highlighted in green.

5. Select **Toolbox** tab.

6. From the list on the LH side of the screen, select the **PCM**.

7. From the list on the RH side of the screen, select **PCM - Powertrain Control Module (PCM) Software Update**.

8. Click **RUN**. Follow all on-screen instructions carefully.

NOTE: The following modules will also be programmed during the PCM update:
- Hybrid Powertrain Control Module (SOBDMC)
- Battery Energy Control Module (BECM)

NOTE: The following modules may also be programmed during the PCM update:
- Anti-Lock Brake System (ABS) Module
- Secondary On-Board Diagnostic Control Module A (SOBDM)
- Secondary On-Board Diagnostic Control Module B (SOBDMB)

9. Once PCM Update has completed, check the software tab to make sure that the above listed modules do not have any available software updates.

10. From the list on the RH side of the screen, select **Self-Test** and click **RUN**.

11. Click the **Run Selected Tests** button in the lower right.

12. Click the **Clear & Retest** button at the top of the screen to clear DTCs in all modules.

13. Disconnect the battery charger from the 12V battery once the programming has completed.

NOTE: If applicable, advise the customer that this vehicle is equipped with an adaptive transmission shift strategy which allows the vehicle's computer to learn the transmission's unique parameters and improve shift quality. When the adaptive strategy is reset, the computer will begin a re-learning process. This re-learning process may result in firmer than normal upshifts and downshifts for several days.

Important Information for Module Programming

NOTE: When programming a module, use the following basic checks to ensure programming completes without errors.

• Make sure the 12V battery is fully charged before carrying out the programming steps and connect FDRS/scan tool to a power source.

NOTE: A good internet connection is necessary to identify the vehicle and to load the diagnostic software.

• Inspect Vehicle Communication Module II/III (VCM II/III)/Vehicle Communication and Measurement Module (VCMM) and cables for any damage. Make sure scan tool connections are not interrupted during programming.
• A hardwired connection is strongly recommended.
• Turn off all unnecessary accessories (radio, heated/cooled seats, headlamps, interior lamps, HVAC system, etc.) and close doors.
• Turn the accessories back on after programming has completed.
• Disconnect/depower any aftermarket accessories (remote start, alarm, power inverter, CB radio,etc.).
• Follow all scan tool on-screen instructions carefully.
• Disable FDRS/scan tool sleep mode, screensaver, hibernation modes.
• Create all sessions key on engine off (KOEO). Starting the vehicle before creating a session will cause errors within the programming inhale process.

Recovering a module when programming has resulted in a blank module

a. Disconnect the VCM II/III or VCMM from the data link connector (DLC) and your PC.

b. After ten seconds, reconnect the VCM II/III or VCMM to the DLC and the PC. Launch FDRS. The VCM II/III or VCMM icon should turn green in the bottom right corner of the screen. If it does not, troubleshoot the FDRS to VCM connection.

c. If you are using the same FDRS as the initial programming attempt, select the appropriate VIN from the Vehicle Identification menu. If you are using a different FDRS, select "Read VIN from Vehicle" and proceed through the Network Test.

d. In the Toolbox menu, navigate to the failed module and Download/Run Programmable Module Installation (PMI). Follow the on-screen prompts. When asked if the original module is installed, select "No" and continue through the installation application.

e. Once programming has completed, a screen may list additional steps required to complete the programming process. Make sure all applicable steps are followed in order.

IMPORTANT NOTE: Federal law prohibits selling motor vehicle parts or components that are under safety, compliance, or emissions recall. Unless a part is requested to be returned to Ford, all parts replaced under this FSA must be scrapped in accordance with all applicable local, state and federal environmental protection and hazardous material regulations. Refer to the Parts Retention, Return, & Scrapping section of the FSA dealer bulletin for further information.