TECHLINK

Mid-February 2024, Volume 26, No. 4

# MDI 2 Advanced Setup Technical Tips Update

With the MDI Manager application software, the MDI 2 can be configured to communicate with a PC using several possible networks, such as a USB cable, ethernet cable, Wireless Local Area Network (WLAN), or Point-to-Point wireless.

gm CUSTOMER CARE AND AFTERSALES

MDI 2 Advanced Setup Technical Tips Update

Connectors on the MDI 2 include:

- **USB Ports** – Connects to a single PC running the MDI Manager software and allows configuration of LAN or WLAN settings required by the dealership local network. USB connection must be made directly with the PC port. Do not connect through a USB hub.
- **Wireless Adapter Port** - Allows for a wireless adapter to be inserted to enable the use of a WLAN or Point-to-Point wireless.
- **Ethernet Port** - Enables the use of an ethernet cable.

USB Port (left), Wireless Adapter Port (center), and Ethernet Port (right) on the MDI 2.
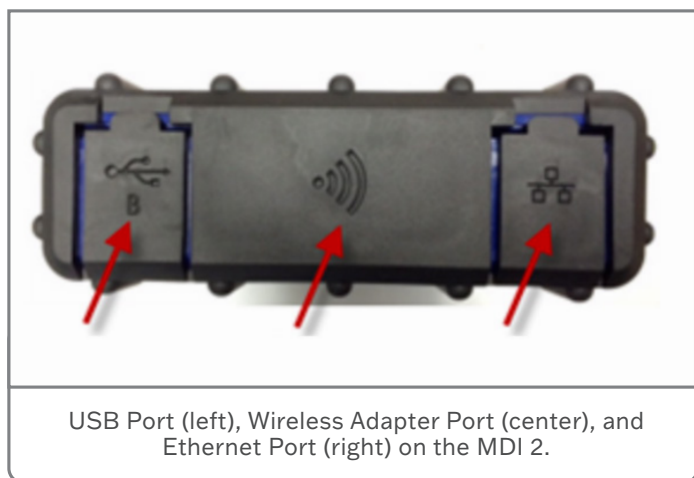
Depending on the configuration setup for wired or wireless communication, it may be necessary to change some of the settings and options on the MDI 2 or PC.

LAN SWITCHING IN BIOS

LAN/WLAN Switching setting
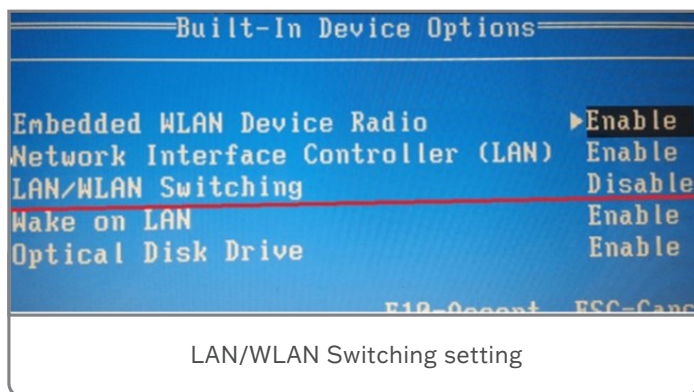
LAN Switching is a feature in Windows used to define how network interface adapters (ethernet or wireless) are to operate. Disabling this setting in BIOS tells the PC not to disable one network (ethernet or wireless) when another network is detected. Using the internet browser, search your PC Make and Model for the function key to enter BIOS during the PC boot.

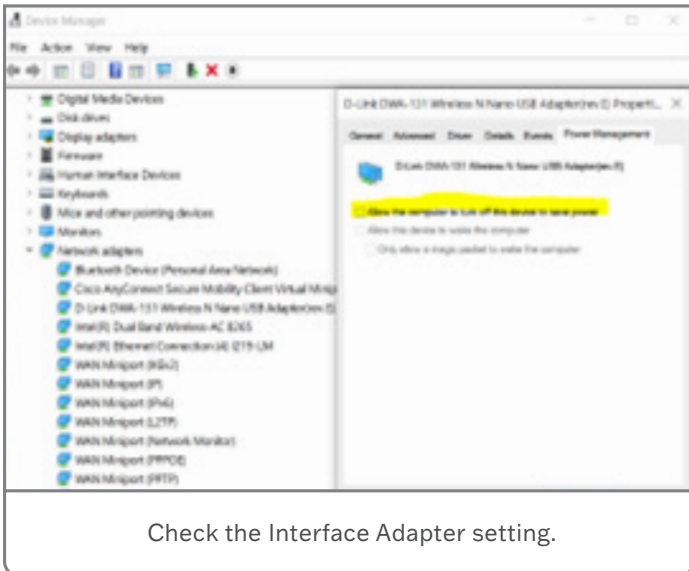## LAN SWITCHING AT ADAPTER INTERFACE

LAN switching at adapter interface
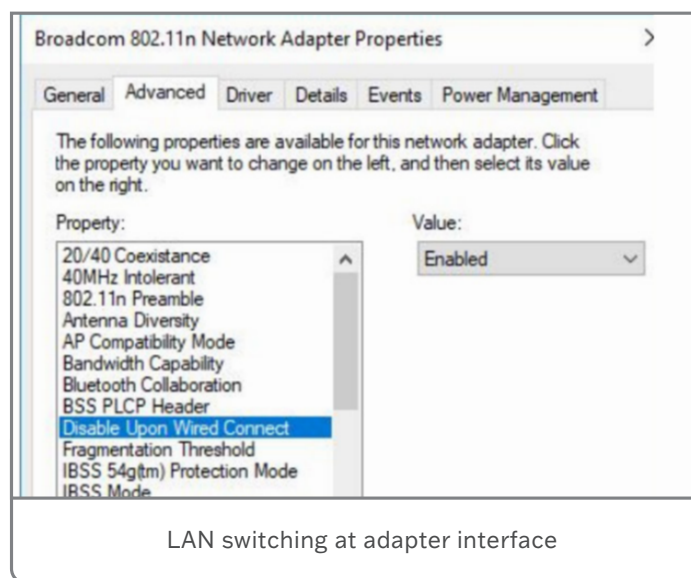
On some PCs, LAN switching at the wireless adapter may be disabled in Windows. This feature may not be available on all adapters.

PC SLEEP SETTING

It is very important to change the default Power Management option for your interface to the MDI 2. With the proper setup, if a test takes longer to execute than the PC Power and Sleep Option configuration, your interface adapter will not be allowed to sleep.

For additional information on setup of the MDI 2 using the MDI Manager, refer to the MDI 2 User Manual or contact the Techline Customer Support Center (TCSC).

Check the Interface Adapter setting.

MDI MANAGER CONFIGURATION

The MDI Manager application is used only for MDI configuration, firmware updates and enabling functionality. Connection to a device from the MDI Manager does not use SAE J2534.

Device status is shown under the MDI 2 icon and indicates the required step to perform first before connecting to a device.

Device status on MDI Manager

The MDI 2 can be configured to use USB, ethernet and wireless connections. USB and Point-to-Point wireless modes are pre-configured as the default. The easiest way to configure the Ethernet (RJ45) configuration for the MDI 2 is via a Link Local IP address. Other ways involve using a USB-to-Ethernet adapter or a local Hub.

A yellow icon indicates that pairing is required for a Point-to-Point connection. A wireless configuration via an Access Point (AP) requires that the 802.11 b,g,n AP SSID is visible and set up with WPA2 security.

ETHERNET INTERFACE USING A LINK LOCAL IP ADDRESS WITH MDI 2

This step assumes that your laptop is equipped with an RJ45 port.

The MDI Manager is used to configure the interfaces to the MDI 2. There are three mediums for connecting with the device: two wired (USB and RJ45) and one wireless in two modes – AP (Access Point) mode and P2P (Point-to-Point) mode.

For an ethernet connection using a static IP Link Local address, configure the MDI 2 with an IP address in the same range as 169.254.1.x with subnet 255.255.0.0. The IP of the CGM is 169.254.1.0, so the address can be anything in the 1-254 range for the last octet.

WIRED ETHERNET CONNECTION USING A LINK LOCAL IP ADDRESS WITH MDI 2

In this configuration the steps below illustrate how to assign a static link local address for the MDI 2. This setup procedure allows a secondary (USB connection is auto configured) wired interface to the MDI 2
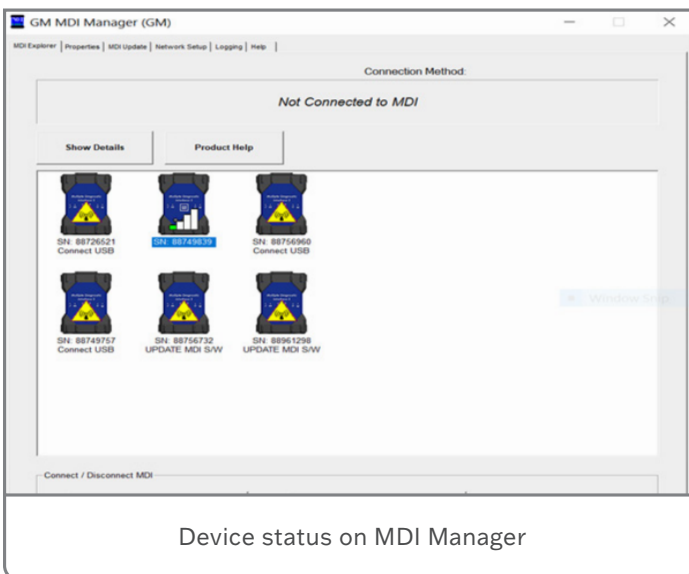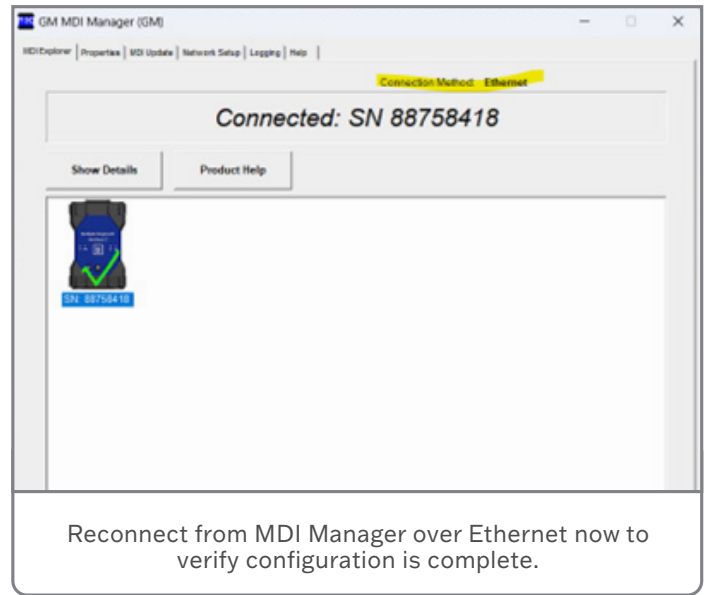
To configure an Ethernet Link Local IP Address for MDI 2:

1. Plug the USB cable into the PC and the MDI 2.

2. Plug in an RJ45 cable between the MDI 2 and the PC.

3. Apply 12 volts to the MDI 2 via the self-test adapter or by connecting to the vehicle Data Link Connector to power the MDI 2

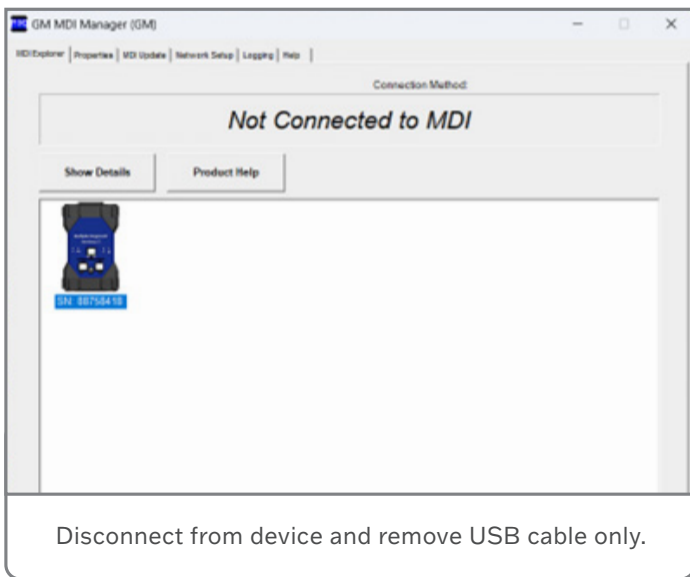4. Start the MDI Manager software by clicking the MDI Manager icon.

5. On the MDI Explorer tab, select the MDI 2 and click the Connect button. A check mark appears over the MDI 2 icon to indicate that the connection has been made (connection by default is over USB.)

6. Select the Network Setup tab.

7. Select the Wired Ethernet tab.

8. Select the Enable Wired Ethernet Interface from the MDI 2 Manager check box in the Interface Control box to enable the interface. Once the interface is enabled, the IP Address Configuration box and the Apply and Cancel buttons become active. Enter 169.254.1.x(1-254) as the IP address for the MDI 2 and 255.255.0.0 for the Mask. The GM CGM ECU has a default link local IP address of 169.254.1.0.

9. The MDI Manager software will store the changes made for each interface. Select the Apply button to save the changes.

10. Follow the Configuring a Static IP Link Local Address for PC Ethernet Adapter steps below to configure the PC Ethernet Adapter.

11. Remove the USB cable and leave the Ethernet cable connected to the MDI 2 and PC.

12. Verify the configuration is successful.

13. Disconnect from device and remove USB cable only

Disconnect from device and remove USB cable only.

14. Reconnect from MDI Manager over Ethernet now to verify configuration is complete.

TIP: Your PC to the network/internet must be via the wireless interface and the PC to MDI 2 connection via the Ethernet ports

Reconnect from MDI Manager over Ethernet now to verify configuration is complete.

on both the PC and MDI 2 via a RJ45 cable. If the laptop does not have an ethernet port, a USB-Ethernet adapter can be configured in the same way as the onboard PC ethernet board to use link local IP address.
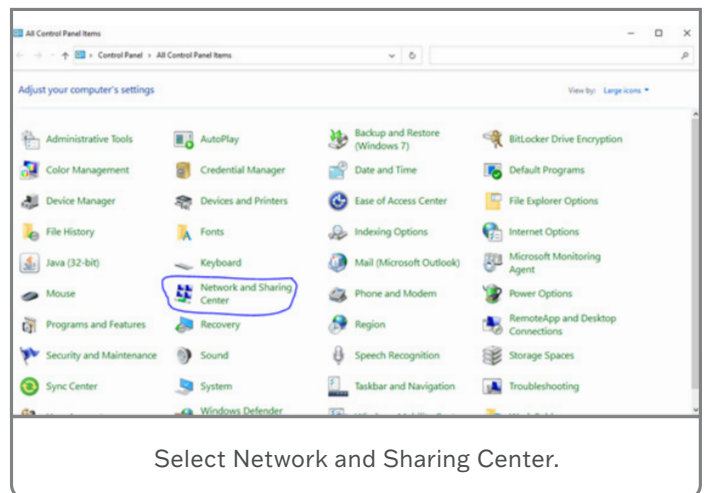
CONFIGURING A STATIC IP LINK LOCAL ADDRESS FOR PC ETHERNET ADAPTER

Follow the steps below to assign a link local IP address for your ethernet adapter.
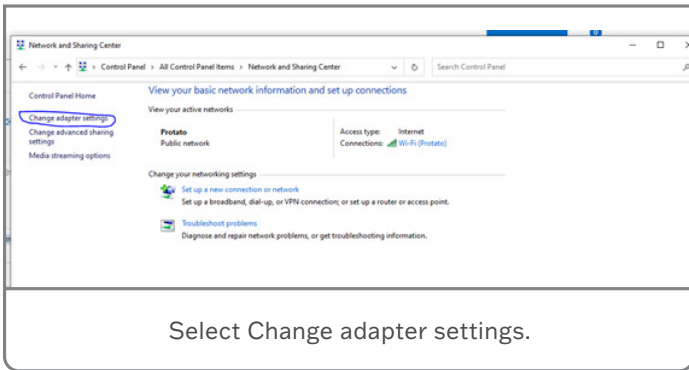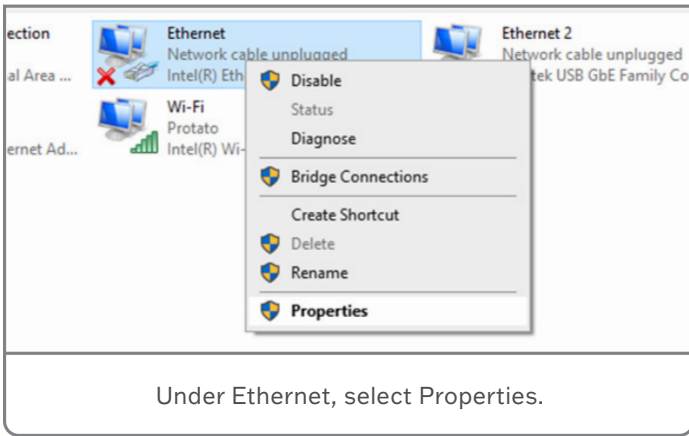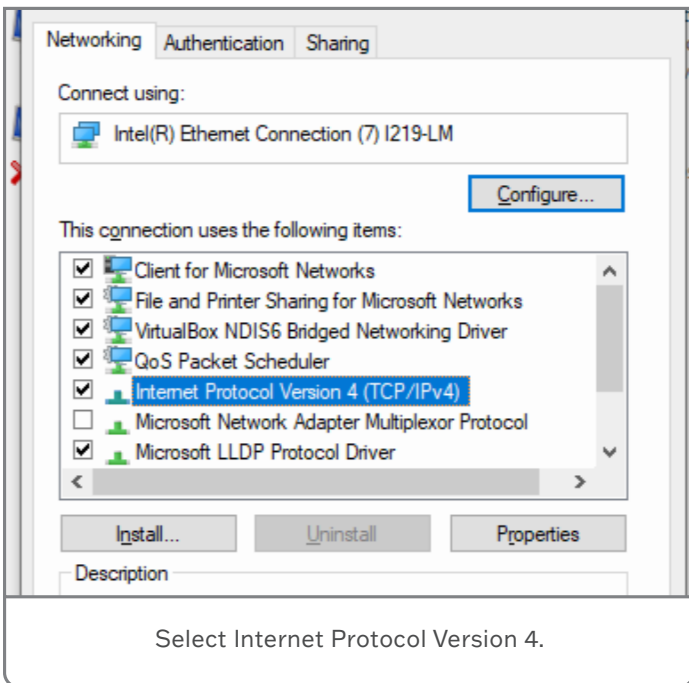

Select Network and Sharing Center.

1. Select Network and Sharing Center.

Select Change adapter settings.

2. Select Change adapter settings.

Under Ethernet, select Properties.

3. Under Ethernet, select Properties.

Select Internet Protocol Version 4.

4. Select Internet Protocol Version 4

Select Internet Protocol Version 4.

5. Select OK to save the new settings.

For additional information on setup of the MDI 2 using the MDI Manager, refer to the MDI 2 User Manual available in Service Information or contact the Techline Customer Support Center (TCSC) at 1-800-828-6860 (English) or 1-800-503-3222 (French).

▶ **Thanks to Chris Henley**

Ceramic Glow Plug Replacement

Successfully replacing ceramic glow plugs in diesel engines requires carefully handling of the plugs and following the proper service procedures in order to prevent potential performance issues.


Ceramic glow plug

Here are a few tips on ceramic glow plug replacement on the 1.6L I4 diesel engine (RPO LH7), Duramax 3.0L I6 diesel engine (RPO LM2, LZ0) and Duramax 6.6L V8 diesel engine (RPO L5P, L5D) available in 2017-2019 Cruze; 2017-2024 Silverado 2500/3500, Sierra 2500/3500; 2018-2019 Equinox, Terrain; 2019-2022 Silverado 4500/5500/6500; 2020-2024 Silverado 1500, Sierra 1500; and 2021-2024 Tahoe/Suburban and Yukon models.

- Measure the resistance of a new glow plug. An open circuit in a glow plug indicates that the glow-plug tip is broken and should not be installed in an engine.

- Do not install a glow plug into an engine if the glow plug has been dropped.

- Pull on the tip of a new glow plug before installation. Be sure your hands are clean before handling the glow plug.

- Always use the EN-52074 Glow Plug Bore Reamer when replacing a ceramic glow plug on the 1.6L, 3.0L and 6.6L

diesel engines. A glow plug hole bore cleaning tool will remove the soot built up on the inside of the glow plug hole. Once a glow plug is removed, the soot collected in the bore must be removed. Otherwise, the soot could "side load" the new glow plug and induce a premature failure. The only exception to this is when servicing a glow plug on a 2.0L or 2.8L diesel engine.
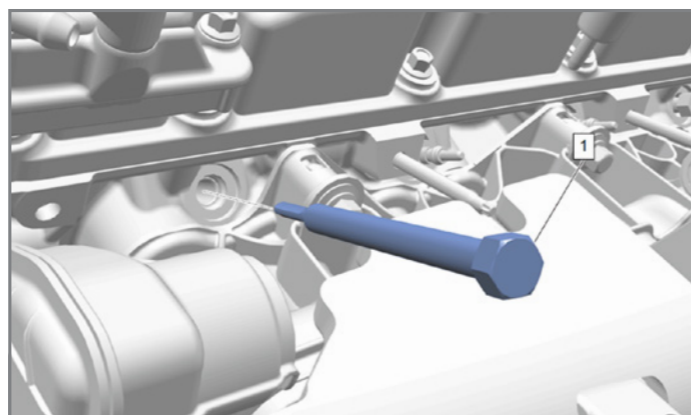
EN-52074 Glow Plug Bore Reamer

- Never use any type of grease or anti-seize compound on a new glow plug. Using any lubricant could lead to over-tightening of the glow plug.

- When installing a glow plug, make sure that it is in line with the glow-plug hole. Any side load placed on the glow plug could cause a crack in the ceramic, which would lead to premature failure.

- Do not use power tools to install a glow plug.

- Do not overtighten a glow plug. An overtightened glow plug could initiate a crack in the ceramic, leading to premature failure.

For more information, refer to Bulletin #23-NA-032.

▶ **Thanks to Larry Yaw**

Misrouted Oxygen Sensor Wiring Harness

An engine misfire condition and an illuminated Check Engine MIL may be found on some 2024 Silverado 2500HD/3500HD and Sierra 2500HD/3500HD models equipped with the 6.6L V8 engine (RPO L8T).

This following DTCs also may be set in the Engine Control Module (ECM): P0300 (Engine Misfire Detected), P0030 (HO2S Heater Control Circuit Bank 1 Sensor 1), P0031 (HO2S Heater Control Circuit Low Voltage Bank 1 Sensor 1), P0032 (HO2S Heater Control Circuit High Voltage Bank 1 Sensor 1), P0053 (HO2S Heater Resistance Bank 1 Sensor 1), P0132 (Heated Oxygen Sensor Circuit High - Bank 1 Sensor 1), P0135 (HO2S Heater Performance Bank 1 Sensor 1), P0137 (Heated Oxygen Sensor 2 Circuit Low - Bank 1 Sensor 2), P0155 (HO2S Heater Performance Bank 2 Sensor 1), P0171 (Fuel Trim System Lean) and P0172 (Fuel Trim System Rich).

The misfire condition may be caused by a misrouted Bank 1 Sensor 1 oxygen sensor wiring harness that is contacting the exhaust pipe. Inspect the oxygen sensor wiring for any contact with the exhaust pipe or heat shield. The fuse related to the circuit also may be open and should be replaced.

If there is damage to the oxygen sensor wiring, replace the Bank 1 Sensor 1 oxygen sensor and ensure that the sensor wiring is routed away from the exhaust pipe. Refer to Heated Oxygen Sensor Replacement – Bank 1 Sensor 1 in the appropriate Service Information.

Refer to Bulletin #24-NA-042 for additional information, including part numbers.

▶ **Thanks to Bryan Salisbury**

EN-52074 Glow Plug Bore Reamer
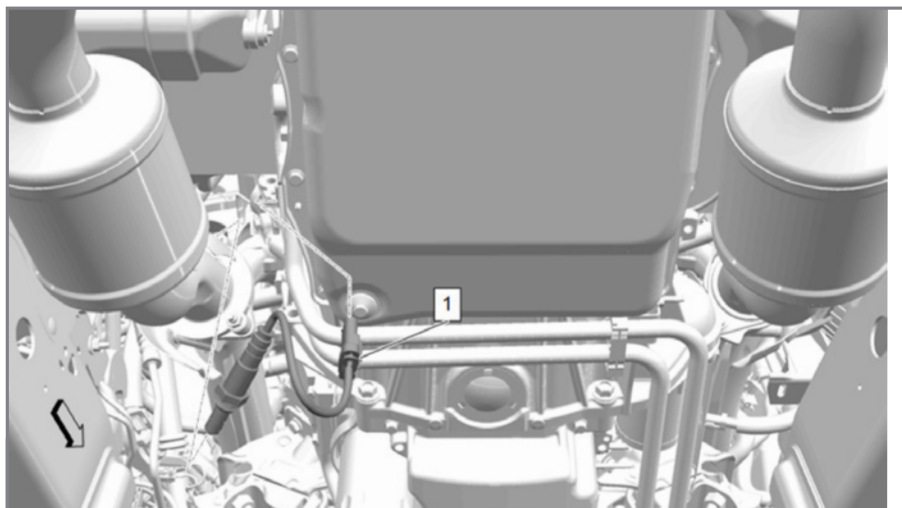
Check the oxygen sensor wire for contact with the exhaust pipe or heat shield.

Inoperative Components After Front View Camera Replacement

Several features, including Forward Collision Alert and Lane Keep Assist, may not operate properly on 2018-2024 Equinox and Terrain models (equipped with RPOs UKU, UHX, UHY, UEU, UE4, UKC, UKJ) after replacing the Front View Camera.

If the B174W Front View Camera is not properly programmed after replacing the camera, Forward Collision Alert may be inoperative, it may not be possible to set the gap for Adaptive Cruise Control, the Lane Keep Assist indicator may not turn

Front View Camera

on/off when pressing the Lane Keep Assist switch and the Auto High Beam function (IntelliBeam) may be erratic. DTC B395D (Camera Misaligned) also may be set.

After replacing the B174W Front View Camera, the following 3 programming steps must be performed in order:

1. Load the SPS Calibrations – On the SPS Supported Controllers screen, select B174W Frontview Camera - Windshield – Programming and follow the on-screen instructions.

2. SPS Set Up and Configuration – On the SPS Supported Controllers screen, select B174W Frontview Camera - Windshield – Configuration/Setup and follow the on-screen instructions.

3. Perform the Camera Learn/Calibration using GDS2 – Initiate the learn procedure for B174W Frontview Camera - Windshield. The scan tool must remain connected and on the calibration screen during the entire process. Do not back out of the screen or press any buttons.

If any of these steps are skipped or performed out of order, it may cause the related components to not operate properly.

Refer to #PIT6140 for more details.

▶ **Thanks to Kenneth Cole**