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2020 Chevrolet Blazer Service and Repair Manual

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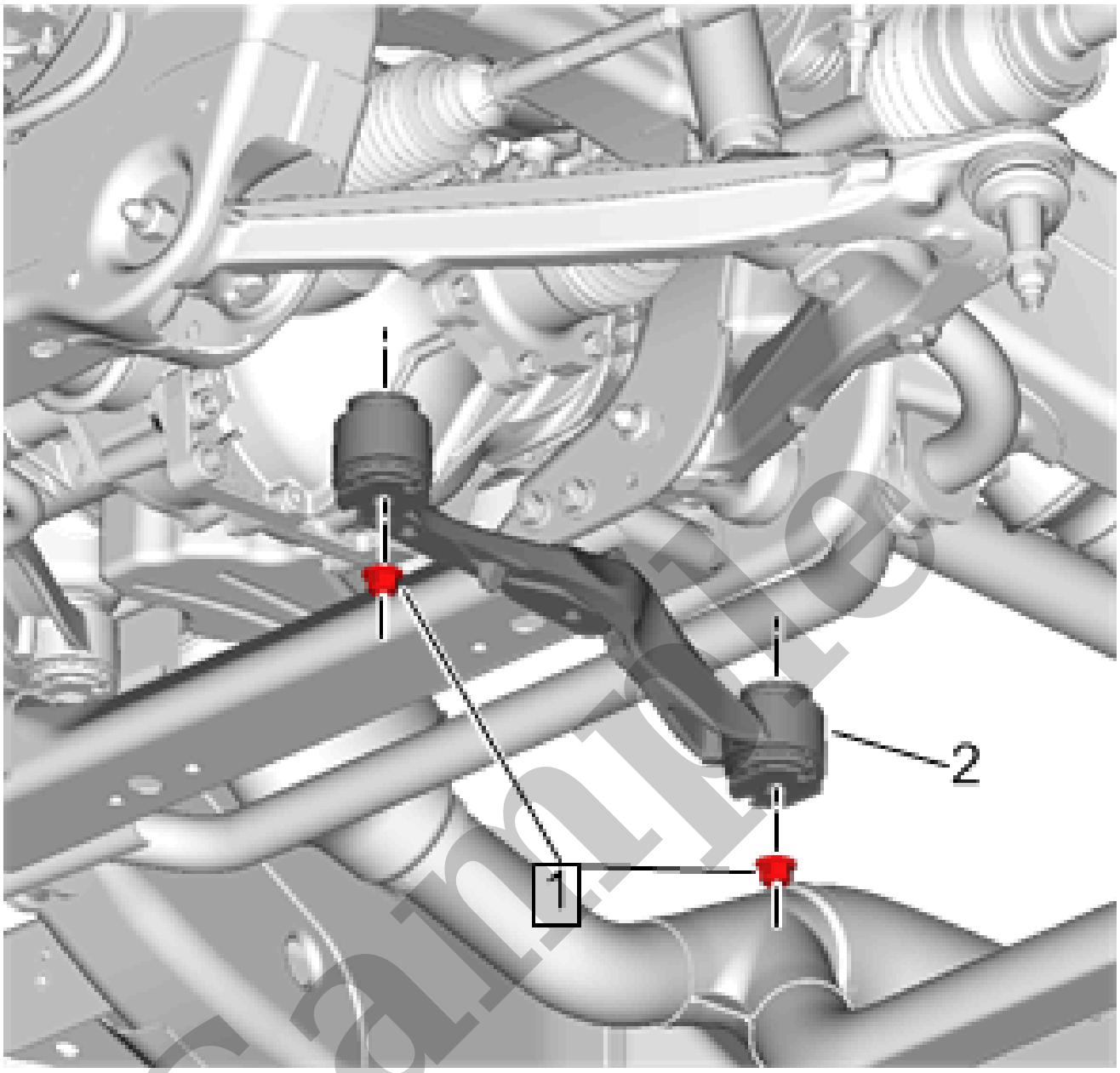
5. From the “MCVM (Mechanical Characterization and Virtual Matching) Operation Selection” screen, select the applicable service procedure to be performed. You will be prompted to provide the necessary Transmission Unique Number (TUN) or Part Unique Number (PUN) when replacing a transmission part.

6. After Solenoid Characterization Reprogramming has completed, turn the ignition OFF for at least 30 seconds and then turn back ON in order to reset the controller.

At this point, the system will read the VIN from the engine control module (ECM) using the multiple diagnostic interface (MDI) and then retrieve the applicable genealogy data tree from the cloud. This data tree accesses the original characterization data so that it may be updated with the new component information. The system acquires characterization data for the given TUN/PUN via the cloud and updates the genealogy tree. The TCM is updated with the correct solenoid characterization data, and the cloud is updated with the new genealogy relationship.

Parameter	System State	Expected Value	Description
Immobilizer Auto Learn Counter	—	Counts	This parameter displays the number of auto learn cycles that have been successfully completed within the immobilizer system.
Immobilizer Automatic Learn Timer	—	hh:mm:ss	This parameter indicates that either the auto learn timer (used in the auto learn procedure to enable VTD password learning) or the seed and key timer (used in the seed and key procedure to enable VTD password learning) is active.
Immobilizer Password Learn	—	Disabled	This indicates learning of the Immobilizer password received from the platform electronics is enabled. Immobilizer password learning is first enabled in assembly plant (prior to the manufacturer's enable counter being set to zero) may be re-enabled using 1 of 2 procedures.
Immobilizer Password Learn Scan Tool Delay	—	Active/Inactive	Scan Tool Learn Delay Active indicates that the security code has been accepted but the scan tool learn delay is active and will not allow learning enabled, programming security code, or resetting security code.
Immobilizer Security Code Accepted	—	Yes	This parameter displays if the Immobilizer Security code was accepted by the ECM.
Immobilizer Security Code Function	—	Present	This parameter displays if the immobilizer security code was supported by the ECM.
Immobilizer Security Code Lockout	—	Inactive	This parameter displays if the Immobilizer Security code is locked out of the ECM.
Immobilizer Security Code Programmed	—	Yes	This parameter displays if the Immobilizer Security code is currently being programmed in the ECM.
Immobilizer Security Information Programmed	—	Yes	This parameter displays if the Immobilizer Security code has been programmed in the ECM.
Immobilizer System Status	—	Varies	This parameter displays the Immobilizer System status in the BCM.
Immobilizer Valid Response Received	—	ms	This parameter displays the actual time observed for a valid immobilizer response.

Parameter	System State	Expected Value	Definition
Ambient Light Sensor	—	Varies	The scan tool displays volts. This parameter displays the ambient light sensor signal voltage.
Ambient Light Status	—	Night	The scan tool displays Unknown, Night, or Day. This parameter displays the ambient light level status.
Automatic Headlamps Disable Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp disable switch status.
Automatic Transmission Manual Shift Switch	—	Off	The scan tool displays Off or On. This parameter displays the transmission tap up tap down switch status.
Backup Lamps Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the backup lamps relay status.
Battery Current Sensor	—	Varies	The scan tool displays the battery current in amperes.
Battery Low at Start	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the battery level is low when the vehicle starts.
Battery Reconnect Detected	—	No	The scan tool displays No or Yes when a battery disconnect/reconnect event has been detected.
Battery Voltage	—	Varies	The scan tool displays the current battery voltage.
BCM-Controlled Charging Voltage	—	Active	The scan tool displays Active or Inactive.
BCM-Requested Charging Voltage Reduction	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the BCM has detected a low battery voltage condition.
Boot Software Part Number	—	Varies	The scan tool displays the boot software part number.

3. 

Front Differential Carrier Bracket- Left Side(2) »Install

YOUR CURRENT VEHICLE

Differential Drive Pinion Gear and Ring Gear Description and Operation

Differential Drive Pinion Gear and Ring Gear Description and Operation

Drive Pinion and Ring Gear Identification

Production drive pinion and ring gears are manufactured by using a 2 cut or a 5 cut method. The 2 cut drive pinions and ring gears can be identified by having a groove cut into the outside edge of the ring gear and a ring on the stem of the drive pinion. The gear tooth contact patterns that are produced from each style of gear set differ slightly. A 2 cut gear will produce a pattern that is bias from the toe to the heel of the tooth (drive side), while a 5 cut gear will produce a square pattern from the toe to the heel of the (drive side). When diagnosing the gear tooth contact pattern, regardless of what type of gear set it is, a correct pattern will be centered within the area of the tooth, from the toe to the heel and from the top to the bottom. For the proper gear tooth wear pattern, refer to Gear Tooth Contact Pattern Inspection.

Test Procedure

1. Using the appropriate cleaning solvent, remove the lubricant from the differential housing and from the teeth of the ring gear.

Perform the Diagnostic Repair Verification after completing the repair.

- Audio Player and USB and Auxiliary In and Memory Card Receptacle Replacement
- Control Module References for human machine interface control module replacement, programming, and setup.

        - If 1 V or greater, repair the short to voltage on the circuit.
        - If less than 1 V, replace the K74 Human Machine Interface Control Module.
    - **If between 9–11 V**

3. Test for less than 1 V between the signal circuit terminal A and ground.
    - **If greater than 1 V**

    1. Ignition OFF, X1 harness connector at the K74 Human Machine Interface Control Module. Ignition ON.
    2. Test for less than 1 V between the signal circuit and ground.
        - If 1 V or greater, repair the short to voltage in the circuit.
        - If less than 1 V, replace the K74 Human Machine Interface Control Module.

    - **If less than 1 V**

4. Ignition OFF, disconnect the X1 harness connector at the K74 Human Machine Interface Control Module.
5. Test for infinite resistance between the B24 Cellular Phone Microphone signal circuit terminal A and ground.
    - **If less than infinite resistance**

      Repair the short to ground in the circuit
    - **If infinite resistance**

6. Test for less than 2 Ω in the signal circuit end to end.
    - **If 2 Ω or greater**

      Repair the open/high resistance in the circuit
    - **If less than 2 Ω**

7. Replace the B24 Cellular Phone Microphone.
8. Ignition ON, infotainment system ON.
9. Begin voice recognition for the infotainment system and clearly speak one of the available commands.
10. Verify the infotainment system responds correctly to the command.
    - **If the infotainment system does not respond correctly to the command.**

    1. Clearly speak a different command.
    2. Verify the infotainment system responds correctly to the command.