



Service Bulletin

Bulletin No.: 19-NA-211

Date: September, 2019

TECHNICAL

Subject: Loss of Propulsion or No Start with Malfunction Indicator Lamp (MIL) Illuminated and DTC P0A45 or P1B04 Set

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Chevrolet	Malibu E2	2016	2018	—		1.8L — RPO LKN	5ET50 — RPO MKE
	Volt D2	2016	2018			1.5L — RPO L3A	5ET50 — RPO MKV

Involved Region or Country	North America, South Korea
Condition	Some customers may comment on a loss of propulsion and/or a no start with the MIL illuminated.
Cause	<p>The Drive Motor 2nd Position Rotor Bearing Cage may have failed or the internal transmission wiring harness for the Drive Motor 2 Position Sensor may have backed out terminal(s), poor terminal connections, corrosion, poor crimps, damaged terminals and/or high resistance in one or more circuits. The technician may find one or more of the following DTCs set in the T6 Power Inverter Module, also referred to as the Drive Motor Generator Power Inverter Module and Hybrid/EV Powertrain Control Module 1:</p> <ul style="list-style-type: none"> • DTC P0A45 Drive Motor 2 Position Sensor Circuit • DTC P1B04 Drive Motor 2 Position Sensor Circuit Tracking Lost <p>Note: At least one of these two DTCs must have set for this bulletin to apply.</p>
Correction	Review the Safety Information and perform the Service Procedure.

Safety Information

Important: Always perform the High Voltage Disabling procedure prior to servicing any High Voltage component or connection. Personal Protection Equipment (PPE) and proper procedures must be followed.

Danger: Ensure all High Voltage safety procedures are followed. Failure to follow the procedure exactly as written may result in serious injury or death.

Danger: Before working on any high voltage system, be sure to wear the following Personal Protection Equipment:

- Safety glasses with appropriate side shields when within 50 feet (15.24 m) of the vehicle, either indoors or outdoors.
- Certified and up-to-date Class "0" Insulation gloves rated at 1000V with leather protectors.

- Visually and functionally inspect the gloves before use.
- Wear the Insulation gloves at all times when working with the high voltage battery assembly, whether the system is energized or not.

The High Voltage Disabling procedure only de-energizes the high voltage circuits and components outside of the Hybrid/EV battery pack. Dangerous voltage levels always exist within the Hybrid/EV battery pack.

The technician must verify that the high voltage disabling procedure was successful by measuring the applicable connectors for a safe voltage level with a DMM.

Service Procedure

1. Perform the Diagnostic System Check - Vehicle. Refer to **Diagnostic System Check - Vehicle** in SI.
2. Is DTC P0A45 or P1B04 set?
 - ⇒ If DTC P0A45 or P1B04 are set, go to Step 3. Continue even if the DTCs are Set as "Current" or Set as "History."

- ⇒ If the vehicle is setting additional faults for **both** Drive Motor 1 Position Sensor Circuits and Drive Motor 2 Position Sensor Circuits simultaneously, or several additional DTCs are set, contact GM Technical Assistance Center (TAC) for diagnostic help **before** proceeding.
3. Disable the High Voltage. Refer to **High Voltage Disabling** in SI.
 4. There are two known product issues causing DTC P0A45 and/or DTC P1B04 to Set.
Drive Motor 2nd Position Rotor Bearing Cage failure.
Drive Motor 2 Position Sensor Wiring Harness electrical faults.
 - 4.1. **First:** The Technician will need to inspect for Drive Motor 2nd Position Rotor Bearing Cage failure.
 - 4.2. **Second:** If the rotor bearing cage is found intact, then the Technician will need to replace the Drive Motor 2 Position Sensor Circuit wiring harness for electrical faults such as backed out terminals, corrosion, poor crimps, damaged terminals and/or high resistance.
 - 4.3. Go to Step 5.
 5. Remove the transmission. Refer to **Transmission > Automatic Transmission - 5ET50 MKV > Repair Instructions - On Vehicle > Transmission Replacement** in SI.
 6. Remove the Drive Motor 2nd Position. Refer to **Transmission > Automatic Transmission - 5ET50 MKV > Repair Instructions Off - Vehicle > Drive Motor Removal - 2nd Position** in SI.
 7. Disassemble the Drive Motor 2nd Position. Refer to **Transmission > Automatic Transmission - 5ET50 MKV > Repair Instructions Off - Vehicle > Drive Motor Removal - 2nd Position > Drive Motor Disassemble - 2nd Position** in SI.



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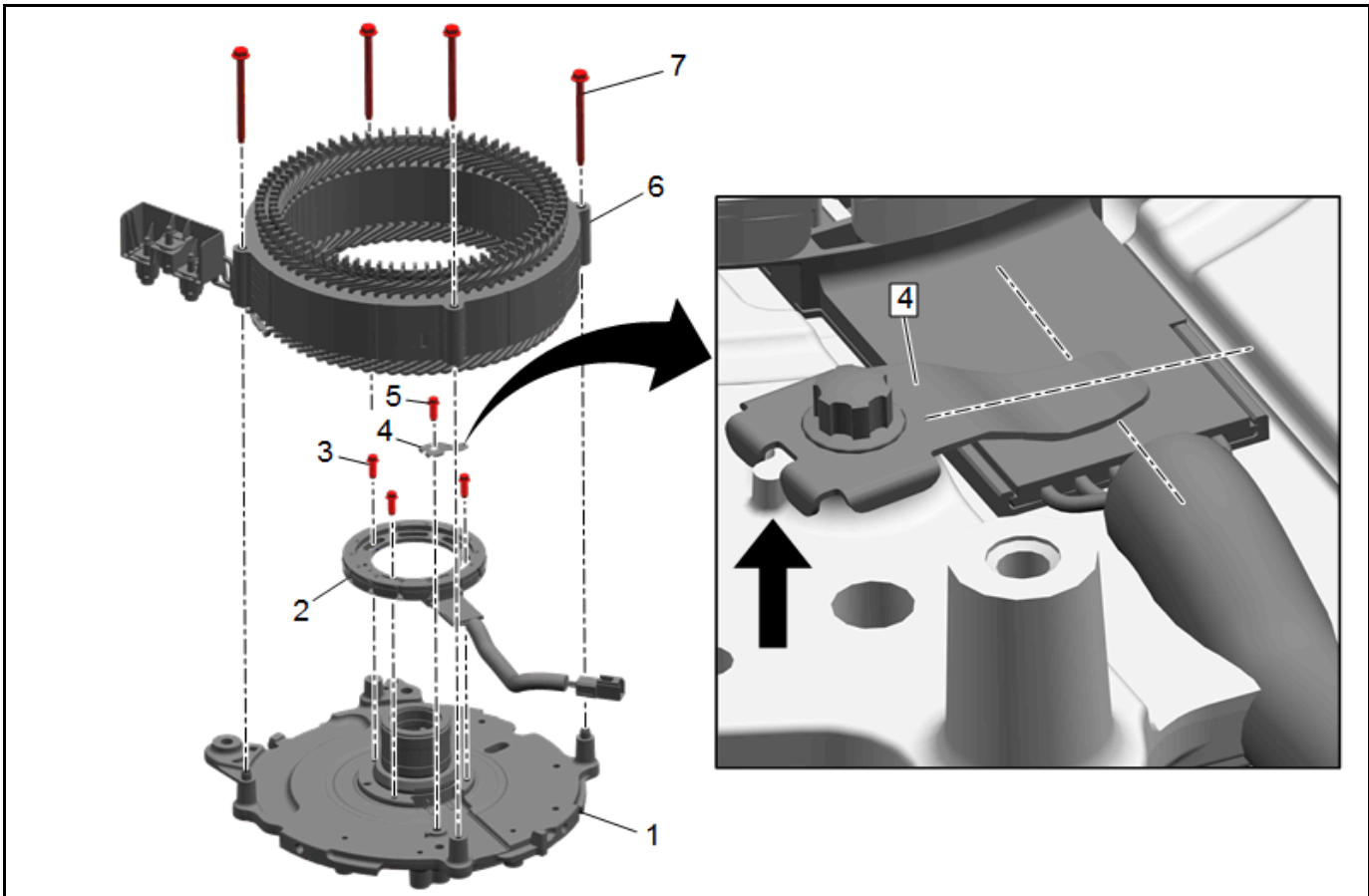


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8. Inspect for Drive Motor 2nd Position rotor bearing cage failure/damage.
 - ⇒ If the Drive Motor 2nd Position Rotor Bearing has failed, locate and remove **all** of the pieces of the failed bearing throughout the entire transmission case. Any leftover debris can cause another loss of propulsion event by causing a short circuit in either of the motors. Refer to **Transmission Case Cleaning and Inspection** in SI.
Go to Step 9.
 - ⇒ If the Drive Motor 2nd Position Rotor Bearing has not failed, Go to Drive Motor Position Sensor Circuits in this Bulletin.



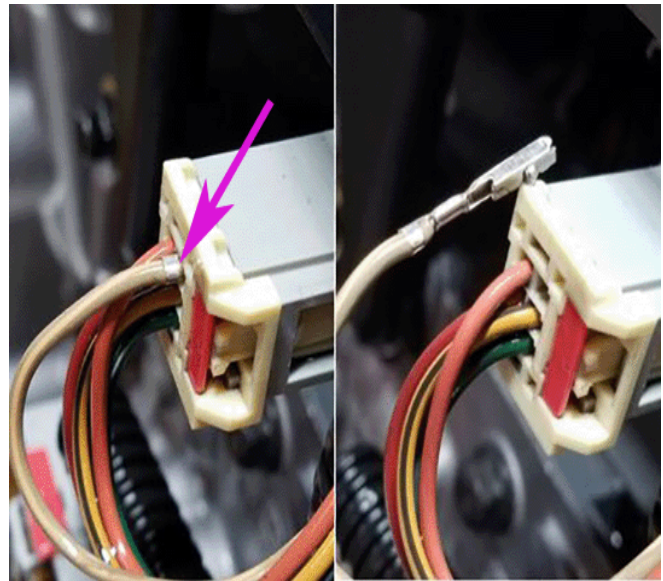
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Important: When installing the new Drive Motor 2 Position Sensor, the black clip must be oriented 90 degrees to the sensor body as shown in the image above. Failure to do so could cause a DTC P0A46 Drive Motor 2 Position Sensor Performance to Set, with a loss of propulsion.

9. Replace the following components for the Drive Motor 2nd Position: Rotor, Stator, and Motor Position Sensor Stator. Refer to *Drive Motor Assemble - 2nd Position* in SI.
10. Install the Drive Motor 2nd Position. Refer to *Drive Motor Installation - 2nd Position* in SI.
11. Install the transmission. Refer to *Transmission Replacement* in SI.
12. Enable the high voltage system. Refer to *High Voltage Enabling* in SI.
13. Perform the Diagnostic Repair Verification. Refer to *Diagnostic Repair Verification* in SI.

Drive Motor Position Sensor Circuits

Overview



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The Drive Motor Power Inverter Module is an assembly which contains two motor control modules and the Hybrid/EV Powertrain Control Module 1. The drive motor position sensor is monitored by its respective motor control module.

The motor control module monitors the angular position, speed and direction of the drive motor rotor based upon the signals of the resolver-type position sensor. The drive motor position sensor circuits operate at very low current. These circuits are susceptible to moisture intrusion, backed out terminal(s) (shown), poor terminal connections or damage, poor crimps and corrosion. The harness **cannot be repaired** for any of these conditions, it **must be replaced**.

1. Verify the date code on the replacement harness is **after** 04/07/2018 **prior** to installation.
2. Replace the transmission wiring harness with Part Number 24285318 HARNESS, A/TRNS WRG SHF POSN SWITCH. Refer to **Automatic Transmission Wiring Harness Replacement** in SI.
3. Perform the Diagnostic Repair Verification. Refer to **Diagnostic Repair Verification** in SI.

Additional Keywords

DTC P0C57: Drive Motor 2 Position Sensor Circuit 1 Low Voltage

DTC P0C58: Drive Motor 2 Position Sensor Circuit 1 High Voltage

DTC P0C61: Drive Motor 2 Position Sensor Circuit 2 Low Voltage

DTC P0C62: Drive Motor 2 Position Sensor Circuit 2 High Voltage

Parts Information

Major Components

Description	Part Number	Quantity
HARNESS, A/TRNS WRG SHF POSN SWITCH	24285318	1
ROTOR, DRV MOT (2ND POSN)	24274987	1
STATOR, DRV MOT (2ND POSN)	24286565	1
STATOR, DRV MOT POSN SEN	24259003	1

Mandatory Replacement Parts — Reference Table

Description	Part Number	Quantity
Seal, PIM Hose	23323369	1
Transmission Mount Bolt	11547918	3
Exhaust Gasket	23238284	1
Stabilizer Shaft Link Nut	11609282	2
Front Lower Control Arm Ball Joint Nut	11609282	2
Transmission Mount Strut Bolt	11589275	1
Bolt, Drivetrain & Front Suspension C/MBR FRT	11547242	2
Bolt, Drivetrain & Front Suspension C/MBR RR	11547242	4
Washer, Front Wheel Drive Shaft (57 OD, 53THK)	11611964	2
Seal, Trans Fluid Cooler Pipe (Slimline Washer 3/8")	25874797	1
Seal, Trans Fluid Cooler Pipe	23278166	1
Automatic Transmission Case Extension Bolt	11547223	2
Drive Motor Rotor Bearing Retaining Ring	24254001	1
Drive Motor Support - 2nd Position	24277039	1
Drive Motor Position Sensor Bolt	24259568	4
Drive Motor Stator Bolt	24256582	4
Automatic Transmission Torque Dampener and Differential Housing Gasket	24254013	1

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
8463570	Automatic Transmission Wiring Harness Replacement	Use Published Labor Operation Time
8466840	Drive Motor Rotor Replacement - 2nd Position	Use Published Labor Operation Time

Version Information

Version	1
Modified	Released September 12, 2019

