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Major System: ELECTRIC VEHICLE **Created:** 11/12/2025
Current Language: English **Last Modified:** 11/14/2025
Other Languages: NONE **Author:** Ryan Hendrickson
Viewed: 64

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Coding Information

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Title: No Start Diagnostics for Electric Vehicle

Applies To: eCE and eMV

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

11/14/2025 - Initial Article Release

DESCRIPTION

This document will guide the user through determining why the vehicle is not able to enable the high voltage system or enter Drive Ready mode.

SYMPTOMS

Diagnostic Trouble Codes & Dashboard Indicator Lights:

DTC/Light	Description
N/A	N/A

Customer Observations or Concerns:

Lights on the cluster
12V gauge on cluster remains low.
Will not illuminate Drive Ready indicator (green truck).

Definitions

Defined values for High Voltage State in Service Diagnostic Solutions (SDS).

- HV_Off - Key is off.
- HV_Init - Key is on, high voltage system is initializing and completing prechecks, prechecks not yet complete.
- HV_Ready - Key is on, high voltage system completed prechecks and enabled high voltage to the high voltage modules.
- HV_Drive - Key is on, green Drive Enable Indicator is illuminated in cluster and TPIM now allows driving.
- HV_Charge - Key is off, charger connected, charging possible.
- HV_Shutdown - Key recently turned off, modules completing housekeeping before powering down.

	Key Position	Low Voltage Present at High Voltage Modules	High Voltage Present at High Voltage Modules	Drive Enabled
HV_Off	Off	No	No	No
HV_Init	Run	Yes	No	No
HV_Ready	Run	Yes	Yes	No
HV_Drive	Run	Yes	Yes	Yes
HV_Charge	Off	Yes	Yes	No

Starting Procedure

Information also found in OMM ([eMV](#), [eCE](#))

1. Apply the parking brake. Turn OFF the headlights and all accessories.
2. Turn key to ON position. Using 12V battery voltage gauge in cluster, verify that voltage is at least 12.9 volts. If the gauge does not reach 12.9 volts within 5 seconds, turn key to OFF position, wait until bus completely shuts down, then retry Step 1.
3. Set the drive mode selector to Neutral (N).
4. Depress and hold brake pedal. Then, set Key to START position.



5. Verify that Drive Enable indicator illuminates GREEN. If Drive Enable indicator does not illuminate within 5 seconds after pressing START, wait 5 seconds and then retry Step 4. (This is normal when the air brake system has no pressure.)
6. While brake pedal is depressed, select appropriate gear: Drive (D) or Reverse (R).

SPECIAL TOOLS / SOFTWARE

Tool Description	Tool Number	Comments
EZ-Tech	N/A	Any supported EZ-Tech
Service Diagnostics Solutions (SDS)	Version 1.6.18 or higher	N/A
NEXIQ USB-Link 2 or 3	NQ124032 or NQ121052	N/A
Electric Vehicle "Y" Adapter Cable	08-801-01	Works with USB-LINK 2 or 3
Digital Multimeter	ZTSE4357	Fluke 88

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes
N/A	N/A	N/A	N/A

DIAGNOSTIC STEPS

WARNING! To prevent personal injury and / or death, or damage to property, park vehicle on hard flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in both directions.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent personal injury and / or death, or damage to property, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent personal injury and / or death, NEVER service a high voltage vehicle without completing high-voltage safety training. Before working on vehicle, read and obey all High-Voltage Safety and Lock-Out Tag-Out procedures and information.

WARNING! To prevent personal injury and / or death, wear and use approved high-voltage Personal Protective Equipment (PPE) when near a high-voltage electric vehicle. Inspect PPE before use. Do not use gloves or other PPE with expired dates, holes, cracks, or damage. NEVER touch energized orange highvoltage cables or high-voltage components without wearing approved highvoltage PPE.

WARNING! To prevent personal injury and / or death, read all information in the Safety Information and High-Voltage Safety sections of the service manual.

WARNING! To prevent personal injury and / or death, or damage to property, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

Step	Action	Decision
1	<p>DIAGNOSTIC:</p> <p>Identify if any fault codes are present.</p> <ol style="list-style-type: none"> Using SDS, connect to the vehicle and review active faults. Are any DTCs present related to the following source addresses? <p>Source address list:</p> <ul style="list-style-type: none"> 25-HVAC HMI 46-EHPS 48-EABC 68-Heater 69-Heater 78-Fan 90-VCU 128-OCI 129-AC VFD 130-SCU 	<p>Yes. Follow the appropriate FCAP/GUIDE for the active faults.</p> <hr/> <p>No. Proceed to step 2</p>

136-Heater 137-AC compressor 161-Heater 163-ePTO 176-DCDC Converter2 179-DCDC Converter1 181-EMP1 182-EMP2 186-HVDM 187-HVDM 188-HVDM 189-HVDM 190-HVDM 202-BTMS 239-TPIM 243-BMS	
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Step	Action	Decision
2	DIAGNOSTIC: Identify if this can achieve High Voltage State HV_Ready. 1. Key on and connect with SDS. Using SDS monitor signal <i>High Voltage State</i> . 2. Is the value at HV_Ready after the key has been on at least 30 seconds?	Yes. Continue to step 3.
		No. Value showing HV_Off. Continue to step 6.
		No. Value showing HV_INIT. Continue to step 9.
		No. Value showing HV_Drive. Repeat this step without turning the key to the crank position.

Step	Action	Decision
3	DIAGNOSTIC: Identify if this can achieve High Voltage State HV_Drive. 1. Key on and connect with SDS. Using SDS monitor signal High Voltage State. 2. While at state HV_Ready, apply service brakes, turn ignition key to the crank position and hold it in the crank position for 3 seconds, then return the ignition key to the run position. 3. Is the value now showing HV_Drive?	Yes. Vehicle is operating normally. Verify all steps and retest for original concern.
		No. Continue to step 4.

Step	Action	Decision
4	<p>DIAGNOSTIC:</p> <p>Evaluate for sufficient air in the air tanks.</p> <ol style="list-style-type: none"> 1. Key on and review air tank pressure showing in the instrument cluster. 2. Are both air pressure readings 30 psi or greater? 	<p>Yes. Continue to step 5.</p>
		<p>No. Diagnose low air pressure reading(s).</p>

Step	Action	Decision
5	<p>DIAGNOSTIC:</p> <p>Monitor crank signal input to body controller.</p> <ol style="list-style-type: none"> 1. Connect with Diamond Logic Builder. Enable Diagnose Mode. Monitor signal Key_Switch_Starter_Input. Turn the ignition key from run to crank and back to run. Note: This is typically pin 1606-S but can vary depending on model and build date. 2. Does the value for the signal change to show an input present at the time the ignition key is in the crank position? 	<p>Yes. Open a case with technical service and share the steps completed.</p>
		<p>No. Diagnose circuit from ignition switch to the appropriate pin at the body controller.</p>

Step	Action	Decision
6	<p>DIAGNOSTIC:</p> <p>Determine if power is present at VCU.</p> <ol style="list-style-type: none"> 1. Disconnect VCU connector, insert pin test tool into cavity 24 of the connector, key on. 2. Is battery voltage present? 	<p>Yes. Open a case with technical service and share the steps completed.</p>
		<p>No. Continue to step 7.</p>

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Step	Action	Decision
7	DIAGNOSTIC: Determine is power is present at diode pack. 1. Disconnect VCU Ignition Diode, connector 6036, insert pin test tool in cavity 3, key on. 2. Is battery voltage present?	Yes. Continue to step 8.
		No. Diagnose missing power on pin 3.

Step	Action	Decision
8	DIAGNOSTIC: Determine if circuit is open between VCU connector 6025 and diode pack connector 6036. 1. Disconnect VCU connector 6025 and use pin test tool to connect to pin 24. 2. Disconnect diode pack connector 6036 and use pin test tool to connect to cavity 4. 3. Measure resistance between the two pins. 4. Is the measured resistance 5 ohms or less?	Yes. Replace the diode pack and retest.
		No. Repair open circuit between diode pack and VCU.

Step	Action	Decision
9	DIAGNOSTIC:	Yes. Continue to step 12.

	<p>Test for proper voltage at 12 volt batteries.</p> <ol style="list-style-type: none"> Using a Digital Multimeter (DMM), ZTSE4357, measure voltage across the 12 volt battery posts. Is the reading greater than 12.2 volts? 	<p>No. Continue to step 10.</p>
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Step	Action	Decision
10	<p>DIAGNOSTIC:</p> <p>Perform 12 Volt Battery and Charging Cable Inspection.</p> <ol style="list-style-type: none"> Perform 12 Volt Battery and Charging Cable Inspection eCE link / eMV link. Are batteries, wiring, and electrical connections clean, tight, and free of damage? 	<p>Yes. Continue to step 11.</p> <hr/> <p>No. Repair electrical system as needed. After repairs are complete, retest for symptom.</p>

Step	Action	Decision
11	<p>DIAGNOSTIC:</p> <p>Perform 12 Volt System Battery Test.</p> <ol style="list-style-type: none"> Perform 12 Volt System Battery Test eCE link / eMV link. Do all batteries pass test? 	<p>Yes. Open a case with technical service and share the steps completed.</p> <hr/> <p>No. Charge or replace batteries as needed. After repairs are complete, retest for symptom.</p>

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Step	Action	Decision
12	<p>DIAGNOSTIC:</p> <p>Determine if 12V and / or High-Voltage (HV) disconnect switches are in the ON position.</p> <ol style="list-style-type: none"> 1. Inspect 12V and HV disconnect switches eCE link / eMV link. 2. Are both switches in the ON position? 	<p>Yes. Open a case with technical service and share the steps completed.</p> <p>No. Turn both disconnect switches ON. After repairs are complete, retest for symptom.</p>

REPAIR STEPS

Follow the correct procedures outlined in the [Service Manual](#) to correct the condition identified.

WARRANTY INFORMATION

Warranty Claim Coding:

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

Standard Repair Times:

Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

[Master Service Information Site](#)

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Feedback Information

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