



Service Bulletin

File in Section: -

Bulletin No.: PIP5131

Date: June, 2013

PRELIMINARY INFORMATION

Subject: SPARK EV (BEV) 1ET35 Drive Unit Exchange Program

Models: 2014 Chevrolet Spark EV (BEV)
Equipped with 1ET35 Transaxle (RPO MME)

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

Condition/Concern

As part of our ongoing quality improvement process, the 2014 Chevrolet Spark EV 1ET35 Drive Unit will remain on restriction through the GM Technical Assistance Center (TAC).

Recommendation/Instructions

This bulletin will explain the Spark EV 1ET35 electric variable automatic Drive Unit exchange program for the 2014 MY Chevrolet Spark EV. This program will run for 12 months from June 14, 2013 to June 14, 2014 to get important feedback on this new Drive Unit. This bulletin will be revised to announce the end of the exchange program at a later date.

Product teams continually seek valuable information for engineering improvements. To assist in this effort, a Drive Unit exchange program will be used for this product. As additional learning's are developed, more on-vehicle service parts and procedures will be released.

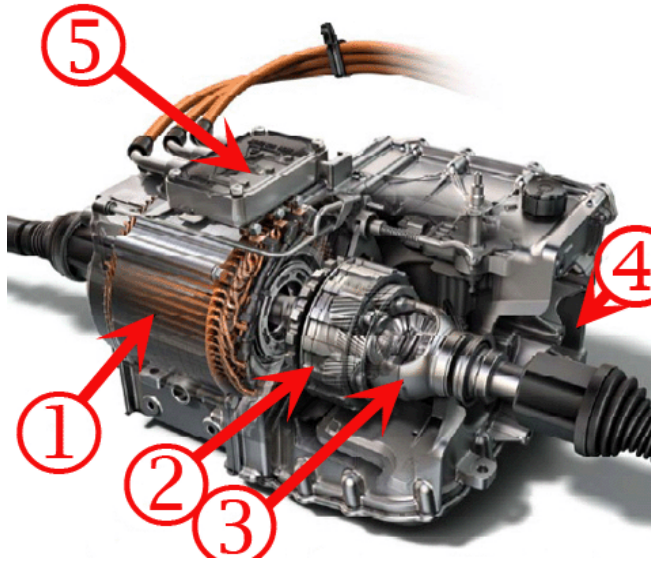
The 2014 Model Year Spark EV 1ET35 Drive Unit exchange program will be administered by the GM Technical Assistance Center (TAC). The servicing technician must provide detailed customer comments, conditions, diagnostic trouble codes (DTCs) and other useful information. To request an exchange, dealerships are required to call Technical Assistance (TAC). Prior to calling TAC, please make sure to complete the Automatic Drive Unit Replacement Authorization Request referenced at the end of this bulletin. Use of this worksheet will minimize the time spent on the telephone and avoid the need of a second call to the TAC. Guidelines for honoring exchange requests under this program are being strictly enforced.

TAC Telephone Number
US
(877) 446-8227 - Action Center prompt
Canada
English - (800) 263-7740 or French - (800) 263-7960

Components that may be removed and serviced without exchange of the Drive Unit are identified in the list below. Any repairs involving Drive Unit components not identified in the table below may require a Drive Unit exchange. Please note that this list is subject to change as the program progresses. You will be notified by the TAC consultant if additional Drive Unit items are considered serviceable. Current Serviceable Drive Unit Related Components:

- Drive Unit oil cooler lines
- Replacement seals for oil cooler joints
- External wiring harness from the vehicle to the Drive Unit
- Drive Motor/Generator Power Inverter Module Cable Housing Cover Seal
- Drive Unit mount

Important: All other components of the Drive Unit require assembly replacement at this time.



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1. Drive Motor generator
2. Planetary Gears
3. Differential
4. Auxiliary Fluid Pump
5. 3-Phase Cable Connections

Important: Drive Unit repairs or failures that are caused by components external to the Drive Unit DO NOT fall under the exchange program. TAC will assist in an assessment of these situations. Also, Drive Units needed for insurance repairs have to be obtained from GMSPO. The exchange program is created as a way to identify and correct internal concerns. External components causing a failure do not provide any useful information in improving a Drive Unit. The Drive Unit received from GMSPO will be a new Drive Unit. As normal process, all warranty claims for Drive Unit replacement must be approved through TAC.

The Drive Unit Tag Number must be supplied to TAC when calling for a Drive Unit exchange.



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Caution: 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.

The High Voltage Disabling procedure will perform the following tasks:

1. Identify how to disable high voltage.
2. Identify how to test for the presence of high voltage.
3. Identify conditions under which high voltage is always present and personal protection equipment (PPE) and proper procedures must be followed.

Important: If vehicle damage does not allow access to the high voltage manual disconnect, disconnect the 12V battery and remove the damaged portion of the vehicle until such time as the HV manual disconnect can be removed and the High Voltage Disabling procedure can be completed.

1. Perform the high voltage disable procedure at the drive motor generator control module assembly or cable connections. Refer to High Voltage Disabling in SI.
2. Perform the high voltage enable procedure when the Drive Unit is installed and ready to be test driven.

Exchange Procedure

1. A thorough diagnosis must be performed in order to prevent unnecessary component replacements. Refer to Diagnostic System Check Vehicle in SI to identify the correct procedure for diagnosing the system.
2. If DTCs are present and the procedure gives direction to remove internal components; STOP! Capture GDS 2 Session Log Freeze Frame Records and data in the Drive Motor Control Module and Hybrid Powertrain Control Module. If possible, test drive the vehicle with the MDI installed and capture data in the Drive Motor Control Module and Hybrid Powertrain Control Module when the concern occurs. TAC or Engineering will request that you e-mail the snapshot to them. See PIP4902 for the process on using GDS 2 to save the data and instructions to upload the Session Logs. Call TAC once the data has been captured.
3. . If DTCs are not present, STOP! Capture GDS 2 Session Log Freeze Frame Records and data in the Drive Motor Control Module and Hybrid Powertrain Control Module while attempting to duplicate the concern. Refer to Symptoms- Automatic Drive Unit in SI.
4. If any diagnostic procedure gives direction to remove internal components, STOP! Call TAC before proceeding. Internal components should not be removed.
5. Prior to calling TAC, complete the Automatic Drive Unit Replacement Authorization Request referenced at the end of this bulletin.
6. Contact TAC to verify that proper diagnosis has been performed. Upon review of the diagnosis, TAC will establish a case reference number and make arrangements for shipping an exchange unit to your dealership if necessary.

Important: DO NOT SHIP A DRIVE UNIT TO THE WARRANTY PARTS CENTER (WPC) WITHOUT AN OFFICIAL WPC REQUEST.

7. After following the proper high voltage disabling procedure outlined in SI, follow procedures for Drive Unit removal.

Important: Failure to return the replaced Drive Unit by the due date will result in the dealership being debited the entire warranty claim (parts and labor). The removed unit must be returned complete in the shipping container. For effective engineering analysis, please do not remove or disassemble any components. Dealerships returning Drive Units that have been even partially disassembled will be judged as violating this procedure and, as such, will be billed for all materials furnished.

Important:

- The replacement Drive Unit will be shipped filled with DEXRON®-HP ATF. The “HP” stands for High Performance. DEXRON® HP transmission fluid is a fully synthetic version of the older DEXRON® III fluid.
- Check and add/drain Drive Unit fluid to the correct level as instructed in Drive Unit Fluid Level and Condition Check in SI before releasing the vehicle. Low or high fluid levels could result in erratic operation and internal Drive Unit damage.
- Use of any ATF other than DEXRON®-HP may result in Drive Unit damage.

Caution: The Drive Unit fluid level must be checked when the Drive Unit fluid temperature is between 30 – 50°C (86–122°F). If the Drive Unit fluid temperature is not within this range, operate the vehicle or allow the fluid to cool as required. Setting the fluid level with a Drive Unit fluid temperature outside this range will result in either an under or over-filled Drive Unit. Drive Unit fluid temperature greater than 50°C will result in an under-filled condition, Drive Unit fluid temperature less than 30°C will result in an over-filled condition. An under-filled Drive Unit will cause premature component wear or damage. An over-filled Drive Unit will cause fluid to discharge out the vent tube, fluid foaming, or pump cavitation.

Fluid Type and Capacity	
"DEXRON® HP transmission fluid is a fully synthetic version of the older DEXRON® III fluid.	
Service Operation	Approximate Capacity - Litres or Qts.
Remove and Install Pan / Filter -	4.2L or 4.4 Qts
Dry Transmission (Empty)	4.2L or 4.4 Qts

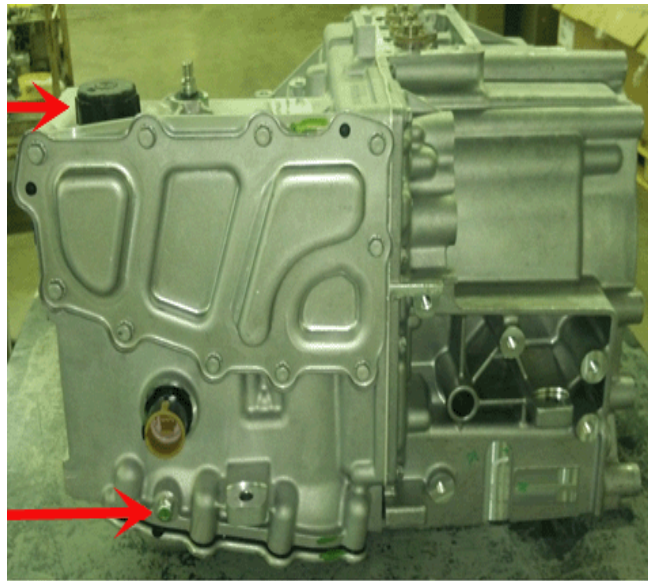
Fluid Level and Condition Check Procedure

The Drive Unit fluid level and condition check procedure includes the steps to check the Drive Unit fluid level, as well as the conditions of the fluid.

The 1ET35 Drive Unit is not equipped with a fill tube or dipstick.

Therefore, a fill cap in the top of the Drive Unit (see top arrow) and level set plug (see lower arrow) sets the fluid level. 0

1. Operate vehicle until Drive Unit fluid temperature is 30–50°C (86–122°F).
2. Raise the vehicle.
3. Remove the front compartment air deflector.
4. Place the Drive Unit in Park.
5. With the scan tool, command the auxiliary Drive Unit Fluid Pump speed to ON for 10 minutes.
6. Remove the Drive Unit case level set plug.
7. Verify fluid slowly drips from the hole that the case level set plug was removed from.
 - a. If the fluid is flowing as a steady stream, wait until the fluid begins to drip from the case level set plug hole.
 - b. If no fluid comes out, add .5 L (.52 Qts.) of fluid until fluid drips out of the case level set plug hole.
8. Install Drive Unit case level set plug and torque to 12 Y (106 lb. in).
9. Turn off the vehicle.
10. Install the front compartment air deflector.



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WPC REQUEST

The WPC will fax a Special Part Request to your dealership requesting return of the Drive Unit to the WPC. The dealership should NOT call Central Transport or Same day Right-O-Way directly. DO NOT wait for the warranty claim to be paid before returning the Drive Unit. The Special Request will provide a request number that must be labeled on the outside of the shipping container. Failure to label the container with the request number may delay the processing of your return. If you do not receive the WPC Special Part Request, contact (248) 371-9939 (French-speaking dealerships in Canada should call the PQC at (866) 654-7654 to obtain the proper paperwork to return the Drive Unit. Failure to return the Drive Unit may result in a debit. Do not ship a Drive Unit to the WPC without an official WPC request.

SHIPPING PREPARATION

1. Remove the drain plug and drain the Drive Unit fluid. Reinstall the drain plug.
2. Remove the Drive Unit from the vehicle as outlined in Drive Unit Replacement in SI.
3. Tighten any fasteners that were loosened or removed during Drive Unit removal to the original torque specification.
4. Remove any plastic shipping plugs or covers from the new unit and install them on the Drive Unit to be returned.
5. If the Drive Unit leaks, mark the leak area directly on the Drive Unit with a permanent marker.
6. Write the TAC case reference number on the repair order.
7. Write the TAC case reference number on the Drive Unit in a visible location.
8. Place the Drive Unit core into the shipping container and attach the completed return shipping tag to the Drive Unit.

SHIPPING INSTRUCTIONS

1. Place a copy of the WPC request, a copy of the repair order with technician's comments and the completed Drive Unit Replacement Authorization Request into the plastic envelope. The bill of lading and customs papers (for cross border shipments) should also be inserted into the plastic envelope. Remove the original shipping label and attach the plastic envelope with the return shipping label on it to the container.
2. Label the outside of the shipping container with the WPC request number and the TAC case reference number. Refer to Corporate Bulletin Number 99-00-89-019 for detailed shipping information.
3. Contact (248) 371-9939 (French-speaking dealerships in Canada should call the PQC at (866) 654-7654) if questions arise about shipping.
4. Have the driver sign the bill of lading. Retain a copy of the signed bill of lading and attach your copy to the original repair order. This will be your proof of returning the Drive Unit.
5. Ship the Drive Unit with appropriate paperwork to: GM Warranty Parts Center, 45 Northpointe Drive, Orion, MI 48359.

DRIVE UNIT REPLACEMENT AUTHORIZATION REQUEST

Call GM TAC for authorization and to create a TAC case number. Refer to the Drive Unit Worksheet included below.

Parts Information

Model Year	Part Name	Part Number
2014	Drive Motor Assembly	24257888

For DEXRON®-HP part numbers, refer to Adhesives, Fluids, Lubricants, and Sealers in SI

Warranty Information

For vehicles repaired under warranty use:

Labor Operation	Description	Labor Time	Parts Allowance
8464670	Drive Unit Replacement	Use Published Labor Operation Time	\$250
Add	Administrative Allowance	0.2 hr	N/A
Add	Road Test - GDS2 Session Log and Freeze Frame Data	0.3 hr	N/A

<p>Automatic Transmission Replacement Authorization Request</p> <p>Note: If you are requesting a Powertrain/Drivetrain Replacement Authorization due to a part availability concern, please call GM TAC (877) 446-8227</p> <p>Is the vehicle at an independent shop? Yes ___ No___ U.S. only</p> <p>BAC: _____</p> <p>Technician Name: _____</p> <p>Technician Training ID: _____</p> <p>Direct Phone number _____</p> <p>VIN: _____</p> <p>Mileage: _____</p> <p>R.O. #: _____</p> <p>Number of Times in for Same Condition: _____</p> <p>Number of Days Down for Same Condition: _____</p> <p>Customer Concern: _____</p> <p>Point of assembly Failure: _____</p> <p>Has the unit been disassembled? Yes ___ No___</p> <p>Is the vehicle modified with non-production accessories? Yes ___ No___</p> <p>Personal or Commercial use? Yes ___ No___</p> <p>Any signs of abuse or improper maintenance: Yes ___ No___</p> <p>Is this an OEM or Genuine GM Parts Assembly? Yes ___ No___</p> <p>OEM Serial #: _____</p> <p>Genuine GM Parts (Reman) if applicable _____</p>
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P/N: _____

Serial # _____

Mileage since the current Genuine GM Parts assembly was installed: _____

Date when current Genuine GM Parts assembly was installed: _____

Did the customer pay any portion when the Genuine GM Parts assembly was installed? Yes ___ No ___

List all current and history

DTCs:

Did the DTC's reappear? Yes ___ No ___

Did you capture any snapshot DTC freeze frame data? Yes ___ No ___

Was TAC contacted? Yes ___ No ___

TAC case number: _____

TAC

Recommendation:

Why is the Replacement
Necessary?

Is this replacement request the result of a part not serviced? Yes ___ No ___

What step was performed to diagnose the assembly replacement?

Transmission Flush Code: _____

IMPORTANT - CAPTURE THE SERIAL NUMBERS OF BOTH THE FAILED AND THE REPLACEMENT UNITS.

(THE SERIAL NUMBER, IS REQUIRED FOR BOTH THE GLOBAL WARRANTY CLAIM AND THE TAC CASE)

ADDITIONAL SI KEYWORDS:

transmission

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.