Technical Service Bulletin

SUBJECT:	No:	TSB-18-54-008
UPDATES TO DTC P101B AND P101C FOR EV-ECU - SERVICE MANUAL REVISION	DATE:	**August 2018**
	MODEL:	**2016 i-MiEV**

CIRCULATE TO:	[ ] GENERAL MANAGER	[X] PARTS MANAGER	[X] TECHNICIAN
[X] SERVICE ADVISOR	[X] SERVICE MANAGER	[X] WARRANTY PROCESSOR	[ ] SALES MANAGER

PURPOSE

This TSB updates Chassis Electrical section of the affected Service Manual to update Diagnostic Trouble Code Procedures for DTC P101B and P101C.

AFFECTED VEHICLES

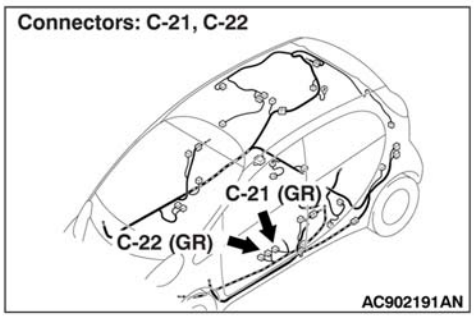
- 2016 i-MiEV

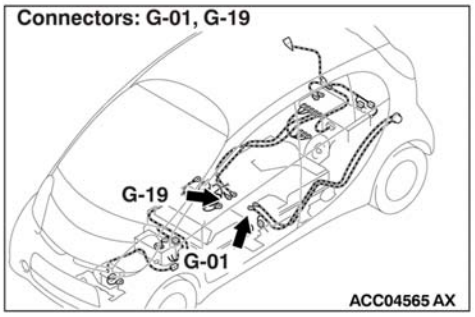
AFFECTED SERVICE MANUAL

- 2016 i-MiEV Service Manual, Group 54 - Chassis Electrical

Continued

Please make the indicated changes to the 2016 i−MiEV Service Manual, Group 54 − Chassis Electrical −> 54D − Electric Motor Unit & Main Drive Lithium−ion Battery−> EV−ECU −> Diagnostic Trouble Code Procedures −> DTC P101B Quick CHG. Contactor P Weld.





⚠ ***DANGER***

- ***When servicing the high voltage system parts, always shut off the high voltage by removing the service plug (Refer to GROUP 00 – Precautions Before Service, Precautions on how to use the high-voltage vehicle).***
- ***When servicing the high voltage system parts, always wear the protective equipment or armor to measure the high voltage (Refer to GROUP 00 – Precautions Before Service, Precautions on how to use the high-voltage vehicle).***

⚠ **CAUTION**

If there is any problem in the CAN bus lines, an incorrect DTC may be set. Prior to this diagnosis, always diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table).

OPERATION

The EV-ECU controls the quick charging relay (+), which energizes the coil of the quick charging contactor (+) inside the main drive lithium-ion battery, to connect or disconnect the high-voltage circuit.

DTC SET CONDITION

- The system determines whether quick charging contactor (+) is stuck when the quick charging terminates. If yes, DTC P101B will be set.

PROBABLE CAUSES

- Damaged wiring harness or connector(s)
- Malfunction of the quick charging contactor (+)
- Malfunction of the quick charging relay (+)
- Malfunction of the EV-ECU

DIAGNOSIS

STEP 1. Using scan tool MB991958, diagnose the CAN bus lines.

Use the scan tool to diagnose the CAN bus lines.

Q: Is the check result normal? <New>

YES : Go to ~~Step 3.~~ <Old> Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C – Troubleshooting). Then go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines
Recheck if DTC P101B is set.
(1) Erase the DTC.
(2) Turn the electric motor switch from LOCK (OFF) position to ON position.
(3) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 3.
NO : This diagnosis is complete.

STEP 3. Use scan tool MB991958 to confirm a DTC of other systems.
Check if DTC P1019 is set in the EV-ECU.

Q: Is the DTC set?
YES : Carry out troubleshooting for the DTC.
NO : Go to Step 4.

STEP 4. Using scan tool MB991958, check data list
Check the service data associated with the quick charging con-tactor (+) status.

Data list
- Item No. 67: Quick charge contactor (+)
  OK: Displays the OFF

<old>

Replace with updated steps on the following pages

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Go to Step 5.

STEP 5. Connector check: C-21, C-22 main drive lithium-ion battery connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the damaged connector.

STEP 6. Measure the resistance at C-21, C-22 main drive lithium-ion battery connector
Check the quick charging contactor (+) in the main drive lith-ium-ion battery (Refer to GROUP 54Dc – Main Drive Lith-ium-ion Battery).

Q: Is the check result normal?
YES : Go to Step 7.
NO : Replace the main drive lithium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery). Then go to Step 7.

STEP 7. Measure the resistance between the G-01 EV charging cable (+) terminal and the G-19 main drive lithium-ion battery cable (+) terminal

⚠ ***DANGER***

- ***When high voltage system components are serviced, be sure to remove service plug to shut down high voltage (Refer to GROUP 00 – Precautions Before Service, Precautions on how to use the high-voltage vehicle).***
- ***When removing service plug, wear the specified protective equipment.***

(1) Disconnect the G-01 EV charging cable (+) terminal and G-19 main drive lithium-ion battery cable (+) terminal, and measure at main drive lithium-ion battery side.
(2) Measure the resistance between the G-01 EV charging cable (+) terminal and G-19 main drive lithium-ion battery cable (+) terminal.

OK: No continuity

Q: Is the check result normal?

YES : Go to Step 8.
NO : Replace the main drive lithium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery). Then go to Step 8.

STEP 8. Check whether the DTC is set again.

Check again if the DTC is set in the EV-ECU.
(1) Erase the set DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is DTC P101B set?

YES : Replace the EV-ECU. Then go to Step 9.
NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction).

STEP 9. Check whether the DTC is set again.

Check again if the DTC is set in the EV-ECU.
(1) Erase the set DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is DTC P101B set?

YES : Return to Step 1.
NO : The diagnosis is complete.

STEP 2. Using scan tool MB991958, check data list
Check the service data associated with the quick charging con-tactor (+) status.

Data list
- Item No. 67: Quick charge contactor (+)

  OK: Displays the OFF

Q: Is the check result normal?

YES : Go to Step 3.
NO : Carry out troubleshooting for the DTC P1019, P101A. Then go to Step 3.

STEP 3. Use scan tool MB991958 to confirm a DTC of other systems.
Check if DTC P1019, P101A is set in the EV-ECU.

Q: Is the DTC set?

YES : Carry out troubleshooting for the DTC. Then go to Step 4.
NO : Go to Step 4.

STEP 4. Connector check: C-21, C-22 main drive lithium-ion battery connector

Q: Is the check result normal?

YES : Go to Step 5.
NO : Repair the damaged connector. Then go to Step 5.

STEP 5. Measure the resistance at C-21, C-22 main drive lithium-ion battery connector
Check the quick charging contactor (+) in the main drive lith-ium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery).

Q: Is the check result normal?

YES : Go to Step 6.
NO : Replace the main drive lithium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery). Then go to Step 6.

STEP 6. Measure the resistance between the G-01 EV charging cable (+) terminal and the G-19 main drive lithium-ion battery cable (+) terminal

⚠ ***DANGER***

- ***When high voltage system components are serviced, be sure to remove service plug to shut down high voltage (Refer to GROUP 00 – Precautions Before Service, Precautions on how to use the high-voltage vehicle).***
- ***When removing service plug, wear the specified protective equipment.***

(1) Disconnect the G-01 EV charging cable (+) terminal and G-19 main drive lithium-ion battery cable (+) terminal, and measure at main drive lithium-ion battery side.
(2) Measure the resistance between the G-01 EV charging cable (+) terminal and G-19 main drive lithium-ion battery cable (+) terminal.

OK: No continuity

Q: Is the check result normal?

YES : Go to Step 7.
NO : Replace the main drive lithium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery). Then go to Step 7.

STEP 7. Check whether the DTC is set again.

Check again if the DTC is set in the EV-ECU.
(1) Erase the set DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is DTC P101B set?

YES : Replace the EV-ECU. Then go to Step 8.
NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction).

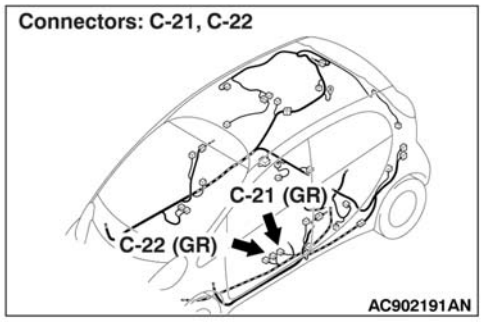
STEP 8. Check whether the DTC is set again.

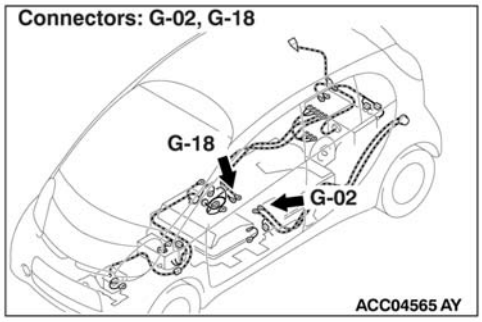
Check again if the DTC is set in the EV-ECU.
(1) Erase the set DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is DTC P101B set?

YES : Return to Step 1.
NO : The diagnosis is complete.

Please make the indicated changes to the 2016 i−MiEV Service Manual, Group 54 − Chassis Electrical −> 54D − Electric Motor Unit & Main Drive Lithium−ion Battery −> EV−ECU −> Diagnostic Trouble Code Procedures −> DTC P101C Quick CHG. Contactor N Weld.





⚠ ***DANGER***

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- ***When servicing the high voltage system parts, always wear the protective equipment or armor to measure the high voltage (Refer to GROUP 00 – Precautions Before Service, Precautions on how to use the high-voltage vehicle).***

⚠ **CAUTION**

If there is any problem in the CAN bus lines, an incorrect DTC may be set. Prior to this diagnosis, always diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table).

OPERATION

The EV-ECU controls the quick charging relay (–), which energizes the coil of the quick charging contactor (–) inside the main drive lithium-ion battery, to connect or disconnect the high-voltage circuit.

DTC SET CONDITION

- The system determines whether quick charging contactor (–) is stuck when the quick charging terminates. If yes, DTC P101C will be set.

PROBABLE CAUSES

- Damaged wiring harness or connector(s)
- Malfunction of the quick charging contactor (–)
- Malfunction of the quick charging relay (–)
- Malfunction of the EV-ECU

DIAGNOSIS

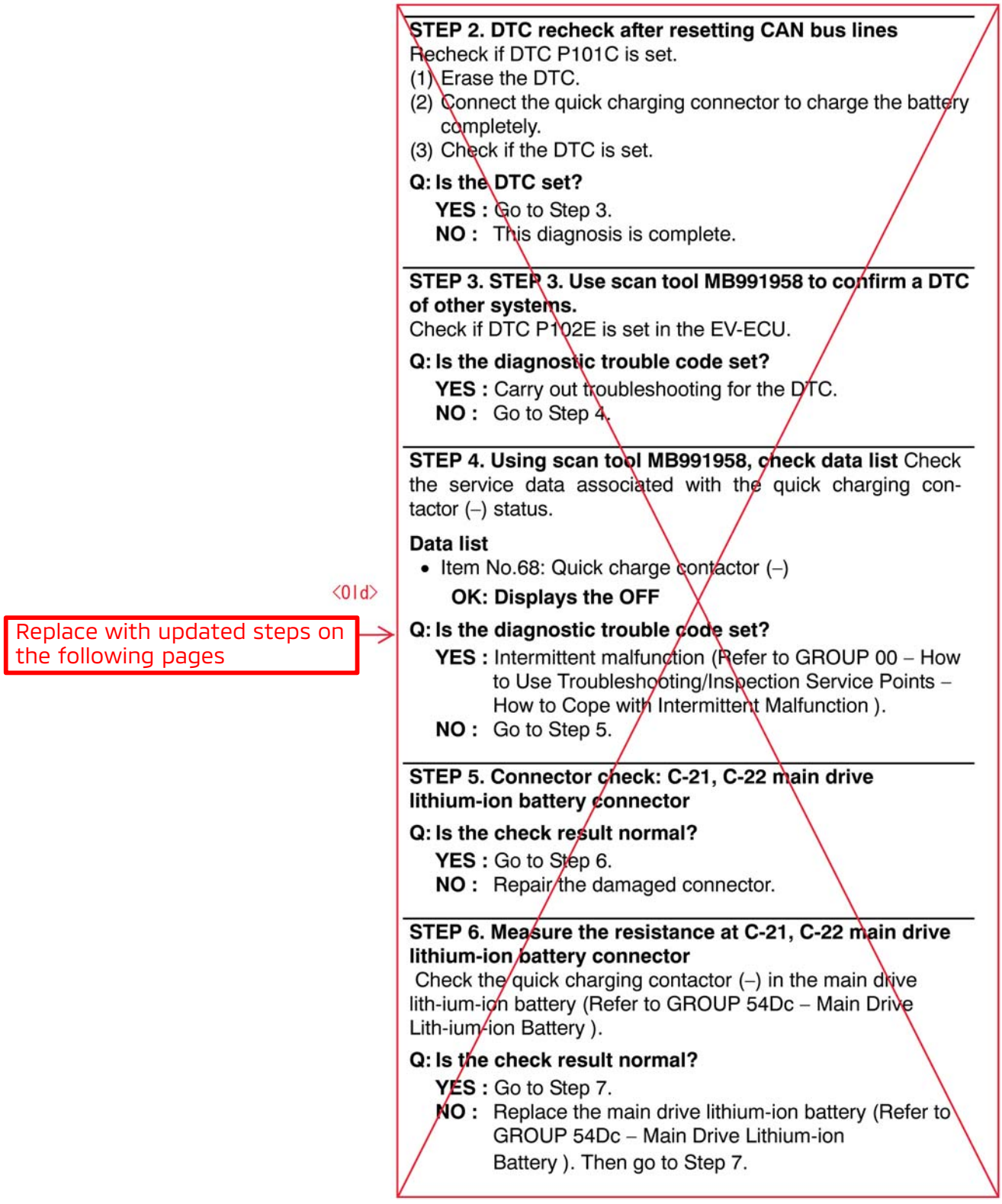
STEP 1. Using scan tool MB991958, diagnose the CAN bus lines.

Use the scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to ~~Step 3.~~ 〈Old〉 〈New〉 Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C – Troubleshooting). Then go to Step 2.



STEP 2. DTC recheck after resetting CAN bus lines
Recheck if DTC P101C is set.
(1) Erase the DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 3.
NO : This diagnosis is complete.

STEP 3. STEP 3. Use scan tool MB991958 to confirm a DTC of other systems.
Check if DTC P102E is set in the EV-ECU.

Q: Is the diagnostic trouble code set?
YES : Carry out troubleshooting for the DTC.
NO : Go to Step 4.

STEP 4. Using scan tool MB991958, check data list Check the service data associated with the quick charging contactor (–) status.

Data list
- Item No.68: Quick charge contactor (–)
  OK: Displays the OFF

<old>

Replace with updated steps on the following pages

Q: Is the diagnostic trouble code set?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Go to Step 5.

STEP 5. Connector check: C-21, C-22 main drive lithium-ion battery connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the damaged connector.

STEP 6. Measure the resistance at C-21, C-22 main drive lithium-ion battery connector
Check the quick charging contactor (–) in the main drive lith-ium-ion battery (Refer to GROUP 54Dc – Main Drive Lith-ium-ion Battery).

Q: Is the check result normal?
YES : Go to Step 7.
NO : Replace the main drive lithium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery). Then go to Step 7.

STEP 7. Measure the resistance between the G-02 EV charging cable (–) terminal and the G-18 main drive lithium-ion battery cable (–) terminal

⚠ ***DANGER***

- ***When high voltage system components are serviced, be sure to remove service plug to shut down high voltage (Refer to GROUP 00 – Precautions Before Service, Precautions on how to use the high-voltage vehicle).***
- ***When removing service plug, wear the specified protective equipment.***

(1) Disconnect the G-02 EV charging cable (–) terminal and G-18 main drive lithium-ion battery cable (–) terminal, and measure at main drive lithium-ion battery side.
(2) Measure the resistance between the G-02 EV charging cable (–) terminal and G-18 main drive lithium-ion battery cable (–) terminal.

OK: No continuity

Q: Is the check result normal?

YES : Go to Step 8.
NO : Replace the main drive lithium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery . Then go to Step 8.

STEP 8. Check whether the DTC is set again.

Check again if the DTC is set in the EV-ECU.
(1) Erase the set DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is DTC P101C set?

YES : Replace the EV-ECU. Then go to Step 9.
NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction).

STEP 9. Check whether the DTC is set again.

Check again if the DTC is set in the EV-ECU.
(1) Erase the set DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is DTC P101C set?

YES : Return to Step 1.
NO : The diagnosis is complete.

STEP 2. Using scan tool MB991958, check data list Check the service data associated with the quick charging con-tactor (–) status.

Data list

- Item No.68: Quick charge contactor (–)

OK: Displays the OFF

Q: Is the diagnostic trouble code set?

YES : Go to Step 3.
NO : Carry out troubleshooting for the DTC P102E, P102F. Then go to Step 3.

STEP 3. STEP 3. Use scan tool MB991958 to confirm a DTC of other systems.
Check if DTC P102E, P102F is set in the EV-ECU.

Q: Is the diagnostic trouble code set?

YES : Carry out troubleshooting for the DTC. Then go to Step 4.
NO : Go to Step 4.

STEP 4. Connector check: C-21, C-22 main drive lithium-ion battery connector

Q: Is the check result normal?

YES : Go to Step 5.
NO : Repair the damaged connector. Then go to Step 5.

STEP 5. Measure the resistance at C-21, C-22 main drive lithium-ion battery connector
Check the quick charging contactor (–) in the main drive lith-ium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery).

Q: Is the check result normal?

YES : Go to Step 6.
NO : Replace the main drive lithium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery). Then go to Step 6.

STEP 6. Measure the resistance between the G-02 EV charging cable (–) terminal and the G-18 main drive lithium-ion battery cable (–) terminal

⚠ ***DANGER***

- ***When high voltage system components are serviced, be sure to remove service plug to shut down high voltage (Refer to GROUP 00 – Precautions Before Service, Precautions on how to use the high-voltage vehicle).***
- ***When removing service plug, wear the specified protective equipment.***

(1) Disconnect the G-02 EV charging cable (–) terminal and G-18 main drive lithium-ion battery cable (–) terminal, and measure at main drive lithium-ion battery side.
(2) Measure the resistance between the G-02 EV charging cable (–) terminal and G-18 main drive lithium-ion battery cable (–) terminal.

OK: No continuity

Q: Is the check result normal?

YES : Go to Step 7.
NO : Replace the main drive lithium-ion battery (Refer to GROUP 54Dc – Main Drive Lithium-ion Battery). Then go to Step 7.

STEP 7. Check whether the DTC is set again.

Check again if the DTC is set in the EV-ECU.
(1) Erase the set DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is DTC P101C set?

YES : Replace the EV-ECU. Then go to Step 8.
NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction).

STEP 8. Check whether the DTC is set again.

Check again if the DTC is set in the EV-ECU.
(1) Erase the set DTC.
(2) Connect the quick charging connector to charge the battery completely.
(3) Check if the DTC is set.

Q: Is DTC P101C set?

YES : Return to Step 1.
NO : The diagnosis is complete.