# SERVICE BULLETIN

MITSUBISHI MOTORS

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

| PURPOSE : CORRECTION | ISSUE NO. : MSB-14EXML54-503A | DATE : 2014-12-05 |
|---|---|---|
| SUBJECT : Error in writing about the trouble shooting of P1A15 regarding the EV-ECU diagnostic procedure | | <DESTINATION/MODEL> (MMNA/USTP/EUR/MMAL/ NZ) <M/Y> 11-15 |
| GROUP : Gr:54(Chassis Electrical) | | i-MiEV(HA3W) |

**1. Description :**

Please refer to the attached document for the correction of the error in writing existing in the applicable service manual.

**2. Affected service manuals :** (Attached sheet 1)

**3. About the details :**

Please refer to the attached document (Attached sheet 6-8))

**Revision History**

| | | MSB No. | Issued Date | |
|---|---|---|---|---|
| Original | | MSB-14EXML54-503 | 2014/11/17 | |
| Revision | A | MSB-14EXML54-503A | 2014/12/5 | ※This time |

Attached sheet 1

<EU/MMAL(Eur spec)/NZ(Eur spec)>

| Applicable manual | Pub. No. | Applicable title (INFO ID) | Content |
|---|---|---|---|
| 2011<br>i-MiEV Workshop Manual CD-ROM | CHAE11E1-CD (Eng)<br>CHAF11E1-CD (Fra)<br>CHAG11E1-CD (Ger)<br>CHAI11E1-CD (Ita)<br>CHAS11E1-CD (Spa)<br>NZ:DRAFT<br>MMAL:DRAFT | CODE No.P1A15: HIGH-VOLTAGE SYSTEM ERROR(1)<br>(M549-20-920-01400-01) | Attached sheet 6 |
| 2012<br>i-MiEV Workshop Manual CD-ROM | CHAE12E1-CD (Eng)<br>CHAF12E1-CD (Fra)<br>CHAG12E1-CD (Ger)<br>CHAI12E1-CD (Ita)<br>CHAS12E1-CD (Spa)<br>NZ:DRAFT<br>MMAL:DRAFT | | |
| 2013.5<br>i-MiEV Workshop Manual CD-ROM | CHAE13E1-CD (Eng)<br>CHAF13E1-CD (Fra)<br>CHAG13E1-CD (Ger)<br>CHAI13E1-CD (Ita)<br>CHAS13E1-CD (Spa)<br>NZ:DRAFT<br>MMAL:AU900414 | CODE No.P1A15: HIGH-VOLTAGE SYSTEM ERROR(1)<br>(M549-20-920-03600-01) | |
| 2015<br>i-MiEV Workshop Manual CD-ROM | CHAE15E1-CD (Eng)<br>CHAF15E1-CD (Fra)<br>CHAG15E1-CD (Ger)<br>CHAI15E1-CD (Ita)<br>CHAS15E1-CD (Spa)<br>NZ:DRAFT<br>MMAL:DRAFT | CODE No.P1A15: HIGH-VOLTAGE SYSTEM ERROR(1)<br>(M549-20-920-13300-01) | Attached sheet 7 |

<MMNA>

| Applicable manual | Pub. No. | Applicable title (INFO ID) | Content |
|---|---|---|---|
| 2013<br>i-MiEV Service Manual CD-ROM | MSCD-018B-2013 | DTC P1A15 HIGH-VOLTAGE SYSTEM ERROR (1)<br>(M549-20-920-03600-01) | Attached sheet 8 |

Attached sheet 6 (1/3)

<Old>

A

**STEP 5. M.U.T.-III freeze frame (FFD) data**

Check the freeze frame data.

**Freeze frame data**

- Item No. 15: EMCU: Condenser voltage

**OK: 220 V or more**

**Q: Is the check result normal?**

**YES :** Go to Step 6.

**NO :** Go to Step 9.

<Added>

(4) Erase the stored DTC.

A

**STEP 6. Diagnosis code recheck**

⚠ ***DANGER***

- ***Check the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***
- ***Wear the specified protection equipment during the check.***

Check again if the diagnosis code is stored in the EV-ECU.

(1) Pull the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-21 EV water PTC heater connector.

(3) Push the service plug.

(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.

(5) Check if the diagnosis code is stored.

<Incorrect>

**Q: Is the diagnosis code stored?**

**YES :** Go to Step 7.

**NO :** Go to Step 25.

<Added>

(4) Erase the stored DTC.

(5)

(6)

<Correct>

**STEP 7. Diagnosis code recheck**

⚠ ***DANGER***

- ***Check the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***
- ***Wear the specified protection equipment during the check.***

Check again if the diagnosis code is stored in the EV-ECU.

(1) Pull the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-20 A/C compressor connector.

(3) Push the service plug.

(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.

(5) Check if the diagnosis code is stored.

<Incorrect>

(5)

(6)

<Correct>

**Q: Is the diagnosis code stored?**

**YES :** Go to Step 8.

**NO :** Replace the A/C compressor (Refer to GROUP 55 - A/C Compressor).

**STEP 8. Diagnosis code recheck**

⚠ ***DANGER***

- ***Check the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***
- ***Wear the specified protection equipment during the check.***

Check again if the diagnosis code is stored in the EV-ECU.

(1) Pull the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-13 onboard charger/DC-DC converter connector. <To 2013 model year> Disconnect the G-24 inverter and on-board charger/DC-DC converter combination (+ terminal) connector, G-25 inverter and on-board charger/DC-DC converter combination (– terminal) connector. <From 2013.5 model year>

(3) Push the service plug.

(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.

(5) Check if the diagnosis code is stored.

<Incorrect>

(5)

(6)

<Correct>

**Q: Is the diagnosis code stored?**

**YES :** Replace the inverter. Then go to Step 30.

**NO :** Replace the onboard charger/DC-DC converter.

**STEP 9. High-voltage fuse No.1 (Main,280A) (traction battery assembly) check**

Check the high-voltage fuse No.1 (Main, 280A).

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Replace the high-voltage fuse No.1 (Main, 280A). Then go to Step 10.

<Added>

***DANGER Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***
***DANGER Wear the specified protection equipment during the check.***



Insert attached sheet 6 (2/3),(3/3)

(3) Push the service plug.
(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.
(5) Erase the stored diagnosis code.
(6) Check if the diagnosis code is stored.

**Q: Is the diagnosis code stored?**
**YES :** Go to Step 8.
**NO :** Replace the A/C compressor (Refer to GROUP 55 - A/C Compressor).

### STEP 6. Diagnosis code recheck

⚠ ***DANGER***

- ***Check the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***
- ***Wear the specified protection equipment during the check.***

Check again if the diagnosis code is stored in the EV-ECU.
(1) Pull the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-21 EV water PTC heater connector.
(3) Push the service plug.
(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.
(5) Erase the stored diagnosis code.
(6) Check if the diagnosis code is stored.

**Q: Is the diagnosis code stored?**
**YES :** Go to Step 7.
**NO :** Go to Step 25.

### STEP 7. Diagnosis code recheck

⚠ ***DANGER***

- ***Check the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***
- ***Wear the specified protection equipment during the check.***

Check again if the diagnosis code is stored in the EV-ECU.
(1) Pull the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-20 A/C compressor connector.

### STEP 8. Diagnosis code recheck

⚠ ***DANGER***

- ***Check the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***
- ***Wear the specified protection equipment during the check.***

Check again if the diagnosis code is stored in the EV-ECU.
(1) Pull the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-13 onboard charger/DC-DC converter connector. <To 2013 model year> Disconnect the G-24 inverter and on-board charger/DC-DC converter combination (+ terminal) connector, G-25 inverter and on-board charger/DC-DC converter combination (− terminal) connector. <From 2013.5 model year>
(3) Push the service plug.
(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.
(5) Erase the stored diagnosis code.
(6) Check if the diagnosis code is stored.

**Q: Is the diagnosis code stored?**
**YES :** Replace the inverter. Then go to Step 30.
**NO :** Replace the onboard charger/DC-DC converter.

A <New>

A

**STEP 9. High-voltage fuse No.1 (Main,280A) (traction battery assembly) check**

⚠ DANGER

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ DANGER

***Wear the specified protection equipment during the check.***

Check the high-voltage fuse No.1 (Main, 280A).

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Replace the high-voltage fuse No.1 (Main, 280A). Then go to Step 10.

Attached sheet 7

(6) Check if the diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Go to Step 8.
**NO :** Replace the A/C compressor (Refer to GROUP 55 – A/C Compressor ).

**STEP 8. Diagnosis code recheck**

***⚠ 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.***

Check again if the diagnosis code is set in the EV-ECU.
(1) Remove the service plug.

***⚠ DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-24 inverter and on board charger/DC-DC converter combination (+ terminal) connector, G-25 inverter and on board charger/DC-DC converter combination (– terminal) connector.
(3) Installation the service plug.
(4) Erase the set diagnosis code.
(5) Set the electric motor switch from the LOCK (OFF) position to the ON, and then to the START position temporarily.
(6) Check if the diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Replace the inverter (Refer to GROUP 54Db – Inverter ). Then go to Step 30.
**NO :** Replace the onboard charger/DC-DC converter (Refer to GROUP 54Dd – Onboard charger/DC-DC converter ).

**STEP 9. High-voltage fuse No.1 (Main,280A) (traction battery assembly) check**

Check the high-voltage fuse No.1 (Main, 280A) (Refer to GROUP 54Dc – On-vehicle Service ).

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Replace the high-voltage fuse No.1 (Main, 280A). Then go to Step 10.

**STEP 10. Use M.U.T.-III diagnosis code of other systems.**

Check if the diagnosis code is set in the EMCU.

**Q: Is the diagnosis code set?**
**YES :** Carry out troubleshooting for the diagnosis code (Refer to GROUP 54Db – Troubleshooting ).
**NO :** Go to Step 30.

**STEP 11. Connector check: G-18, G-19 traction battery connector, G-05, G-06 inverter connector**

***⚠ 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.***
- Check whether terminals are engaged correctly (deformation or discolouration).
- Check whether the terminals are tightened to the specified torque (Refer to GROUP 54Db – Inverter and GROUP 54Dc – Traction battery ).
- Check whether foreign materials are pinched.

**Q: Is the check result normal?**
**YES :** Go to Step 12.
**NO :** Reconnect the terminals or replace the traction battery cable.

**STEP 12. Check the wiring harness between G-05, G-06 inverter connector terminal and G-18, G-19 traction battery connector 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.***

Check the high-voltage line for damage.

**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Replace the traction battery cable.

***! 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.***

<Added>

A

Attached sheet 8 (1/7)

**STEP 3. Use scan tool MB991958 to confirm a diagnostic trouble code of other systems.**
Check if except DTC P0AA1, P1A17 or P1AF2 is stored in the EV-ECU.

**Q: Is the DTC stored?**

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

**STEP 4. Use scan tool MB991958 to confirm a diagnostic trouble code of other systems.**
Check if the DTC is stored in the A/C control unit.

**Q: Is the DTC stored?**

**YES :** Carry out troubleshooting for the DTC.
**NO :** Go to Step 5.

**STEP 5. Using scan tool MB991958, check freeze frame (FFD) data**
Check the freeze frame data.

**Freeze frame data**

- Item No. 15 : EMCU: Condenser voltage

**OK: 220 V or more**

**Q: Is the check result normal?**

**YES :** Go to Step 6.
**NO :** Go to Step 9.

<Old>

Insert attached sheet 8 (2/7)

A

**STEP 6. Check whether the DTC is stored again.**

⚠ ***DANGER***

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ ***DANGER***

***Wear the specified protection equipment during the check.***

Check again if the DTC is stored in the EV-ECU.
(1) Remove the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-21 EV water PTC heater connector.
(3) Installation the service plug.
(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.
(5) Check if the DTC is stored.

<Incorrect>

**Q: Is the DTC stored?**

**YES :** Go to Step 7.
**NO :** Go to Step 16.

<Added>
(4) Erase the stored DTC.
(5)
(6)
<Correct>

A Attached sheet 8 (2/7)

<New>

A

**STEP 6. Check whether the DTC is stored again.**

⚠ ***DANGER***

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ ***DANGER***

***Wear the specified protection equipment during the check.***

Check again if the DTC is stored in the EV-ECU.

(1) Remove the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-21 EV water PTC heater connector.
(3) Installation the service plug.
(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.
(5) Erase the stored DTC.
(6) Check if the DTC is stored.

**Q: Is the DTC stored?**

**YES :** Go to Step 7.
**NO :** Go to Step 16.

Insert attached sheet 8 (4/7)

A

A

Attached sheet 8 (3/7)

**STEP 7. Check whether the DTC is stored again.**

⚠ ***DANGER***

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ ***DANGER***

***Wear the specified protection equipment during the check.***

Check again if the DTC is stored in the EV-ECU.

(1) Remove the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-20 A/C compressor connector.

(3) Installation the service plug.

(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.

(5) Check if the DTC is stored.

<Incorrect>

**Q: Is the DTC stored?**

**YES :** Go to Step 8.

**NO :** Replace the A/C compressor (Refer to GROUP 55 - A/C Compressor .).

<Added>

(4) Erase the stored DTC.

(5)

(6)

<Correct>

<Old>

A Attached sheet 8 (4/7)

A <New>

**STEP 7. Check whether the DTC is stored again.**

⚠ ***DANGER***

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ ***DANGER***

***Wear the specified protection equipment during the check.***

Check again if the DTC is stored in the EV-ECU.

(1) Remove the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-20 A/C compressor connector.
(3) Installation the service plug.
(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.
(5) Erase the stored DTC.
(6) Check if the DTC is stored.

**Q: Is the DTC stored?**

**YES :** Go to Step 8.
**NO :** Replace the A/C compressor (Refer to GROUP 55 - A/C Compressor .).

Insert attached sheet 8 (6/7)
A
A
Attached sheet 8 (5/7)

**STEP 8. Check whether the DTC is stored again.**

⚠ ***DANGER***

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ ***DANGER***

***Wear the specified protection equipment during the check.***

Check again if the DTC is stored in the EV-ECU.

(1) Remove the service plug.

⚠ ***DANGER***

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-24 inverter and on board charger/DC-DC converter combination (+ terminal) connector, G-25 inverter and on board charger/DC-DC converter combination (– terminal) connector.

(3) Installation the service plug.

(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.

(5) Check if the DTC is stored.

<Incorrect>

**Q: Is the DTC stored?**

**YES :** Replace the inverter. Then go to Step 22.

**NO :** Replace the onboard charger/DC-DC converter .

<Added>

(4) Erase the stored DTC.

(5)

(6)

<Correct>

<Added>

***!DANGER***
***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***
***!DANGER***
***Wear the specified protection equipment during the check.***

**STEP 9. High-voltage fuse No.1 (Main,280A) (Main Drive Lithium-ion Battery assembly) check**

Check the high-voltage fuse No.1 (Main, 280A)

.

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Replace the high-voltage fuse No.1 (Main, 280A). Then go to Step 10.

<Old>

**STEP 10. Use scan tool MB991958 to confirm a DTC of other systems.**

Check if the DTC is stored in the EMCU.

**Q: Is the DTC stored?**

**YES :** Carry out troubleshooting for the DTC.

**NO :** Go to Step 22.

A Attached sheet 8 (6/7)

<New>

**STEP 8. Check whether the DTC is stored again.**

⚠ DANGER

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ DANGER

***Wear the specified protection equipment during the check.***

Check again if the DTC is stored in the EV-ECU.

(1) Remove the service plug.

⚠ DANGER

***Isolate bare wires of the disconnected high-voltage circuit with a plastic tape.***

(2) Disconnect the G-24 inverter and on board charger/DC-DC converter combination (+ terminal) connector, G-25 inverter and on board charger/DC-DC converter combination (– terminal) connector.

(3) Installation the service plug.

(4) Set the electric motor switch from the "LOCK" (OFF) position to the "ON", and then to the "START" position temporarily.

(5) Erase the stored DTC.

(6) Check if the DTC is stored.

**Q: Is the DTC stored?**

**YES :** Replace the inverter. Then go to Step 22.

**NO :** Replace the onboard charger/DC-DC converter .

**STEP 9. High-voltage fuse No.1 (Main,280A) (Main Drive Lithium-ion Battery assembly) check**

⚠ DANGER

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ DANGER

***Wear the specified protection equipment during the check.***

Check the high-voltage fuse No.1 (Main, 280A).

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Replace the high-voltage fuse No.1 (Main, 280A). Then go to Step 10.

A Attached sheet 8 (7/7)

**STEP 15. Check on main contactor (+), (-), charging contactor coil resistance of contactor.**

.

**Q: Is the check result normal?**

**YES :** Go to Step 16.

**NO :** Repair the Main Drive Lithium-ion Battery assembly .

<Correct> Replace <Incorrect>

**STEP 16. Measure the resistance of the G-21 EV water PTC heater connector.**

⚠ ***DANGER***

***Carry out the check on the high-voltage circuit while reading carefully the precautions on handling a high-voltage vehicle.***

⚠ ***DANGER***

***Wear the specified protection equipment during the check.***

(1) Remove the service plug.
(2) Disconnect the G-21 EV water PTC heater connector.
(3) Measure it on the resistance at the EV water PTC heater side.
(4) Measure the resistance between the G-21 EV water PTC heater connector terminal No.1 and No.2.

**OK: 1 MΩ or more**

**Q: Is the check result normal?**

**YES :** Go to Step 17.

**NO :** Check the high-voltage fuse No.3 . Replace the EV water PTC heater (Refer to GROUP 55 - EV Water PTC Heater .).

**STEP 17. Measure the resistance at A-113 EV water PTC heater connector.**

(1) Disconnect the A-113 EV water PTC heater connector and measure it on the resistance at the EV water PTC heater side.
(2) Measure the resistance between the A-113 EV water PTC heater connector terminal No.3, 4, 5 and the body ground.

**OK: No continuity**

**Q: Is the check result normal?**

**YES :** Go to Step 18.

**NO :** Replace the EV water PTC heater (Refer to GROUP 55 - EV Water PTC Heater .).