# SERVICE BULLETIN

MITSUBISHI MOTORS

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

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|---|---|---|
| PURPOSE : INFORMATION | ISSUE NO. : MSB-12EXML54-002 | DATE : 2012-12-21 |
| SUBJECT : Addition of the check procedure according to the trouble phenomenon of EMCU, motor | | <Destination/Model> (EUR/MMNA/USTP/MMAL/NZ) i-MiEV(HA3W) <M/Y> 11-13.5 |
| GROUP : ELECTRIC MOTOR UNIT AND TRACTION BATTERY | | |

**1. Description:**

See the attached document for the information about the change of mention in the applicable service manual.

**2. Applicable manual:**

See the attached document

**3. Details:**

See the attached document

＜EU/MMAL/NZ＞

| 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) | TROUBLE SYMPTOM CHART<br>(M549-30-740-01900-01) | Attached sheet 4 |
| | | Inspection Procedure 1: MCU power supply system (M549-30-730-01200-01)after | |
| 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) | TROUBLE SYMPTOM CHART<br>(M549-30-740-01901-01) | |
| | | Inspection Procedure 1: EMCU power supply system (M549-30-730-01201-01)after | |
| 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) | TROUBLE SYMPTOM CHART<br>(M549-30-740-01901-01) | |
| | | Inspection Procedure 1: EMCU power supply system (M549-30-730-03400-01)after | |

＜MMNA＞

| Applicable manual | Pub. No. | Applicable title (INFO ID) | Content |
|---|---|---|---|
| 2012<br>i-MiEV Service Manual CD-ROM | MSCD-018B-2012 | TROUBLE SYMPTOM CHART<br>(M549-30-740-01901-01) | Attached sheet 5 |
| | | EMCU power supply system<br>(M549-30-730-01201-01)after | |
| 2013.5<br>i-MiEV Service Manual CD-ROM | MSCD-318B-2013M | TROUBLE SYMPTOM CHART<br>(M549-30-740-03100-01) | |
| | | EMCU power supply system<br>(M549-30-730-03400-01)after | |

**STEP 3. Connector check: C-110 EV-ECU connector, E-06 inverter connector**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the damaged connector.

**STEP 4. Check the wiring harness between C-110 EV-ECU connector terminal No. 76 and E-06 inverter connector terminal No. 9.**

- Check the K-LINE for short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the wiring harness.

**STEP 5. Measure the voltage at E-06 inverter connector.**

(1) Disconnect the connector and measure at the wiring harness side.
(2) Measure the voltage between the E-06 inverter connector No.9 and the body earth.

**OK: 5 V or more**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Replace the EV-ECU. (Refer to .) Then go to Step 8.

**STEP 6. Voltage measurement at C-110 EV-ECU connector**

(1) Disconnect the connector and measure at the wiring harness side.
(2) Measure the voltage between the C-110 EV-ECU connector terminal No. 76 and the body earth.

**OK: 5 V or more**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Replace the inverter. (Refer to .) Then go to Step 8.

**STEP 7. Diagnosis code recheck**

Check again if the diagnosis code is set to the EMCU.
(1) Erase the stored diagnosis code.
(2) Set the electric motor switch from the "LOCK" (OFF) position to the "ON" position.
(3) Check if the diagnosis code is set.

**Q: Is any diagnosis code set?**
**YES :** Go to Step 1.
**NO :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction .)

**STEP 8. Diagnosis code recheck**

Check again if the diagnosis code is set to the EMCU.
(1) Erase the stored diagnosis code.
(2) Set the electric motor switch from the "LOCK" (OFF) position to the "ON" position.
(3) Check if the diagnosis code is set.

**Q: Is any diagnosis code set?**
**YES :** Go to Step 1.
**NO :** The diagnosis is complete.

## TROUBLE SYMPTOM CHART

M1549307400019

| Check item | Inspection procedure | Reference page |
|---|---|---|
| EMCU power supply system | 1 | |
| Vehicle vibration | 2 | |

Added

**Inspection Procedure 2: Vehicle vibration**

**COMMENTS ON TROUBLE SYMPTOM**
The vehicle should be repaired when the driver feels a sense of discomfort during longitudinal repeated vibrations.

*NOTE: A slight vibration may occur in the electric motor unit. There is no fault.*

**PROBABLE CAUSES**
- Improper installation of the motor mount
- Improper installation of the rear suspention
- Malfunction of the motor (electric motor unit)
- Malfunction of the EMCU

## DIAGNOSIS PROCEDURE

**STEP 1. Check the trouble symptom.**
- Check installation motor (electric motor unit) and transaxle assembly
- Check installation of the motor mount
- Check installation of the rear suspention

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Reinstall it. Then go to Step 4 .

**STEP 2. Check the G-07 inverter (U terminal) connector, G-08 inverter (V terminal) connector and G-09 inverter (W terminal) connector for the insulation resistance.**

⚠ ***DANGER***
- ***When high voltage system components are serviced, be sure to pull service plugs to shut down high voltage before serving.***
- ***When pulling service plugs, wear the specified protective equipment.***

⚠ **CAUTION**
**When the insulation resistance is measured, set the range of the special tool electric insulation tester (MB992355) to 500 V. When the insulation resistance is measured at the range more than 500 V, the component may be damaged.**
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Use the special tool electric insulation tester (MB992355) to set the range to 500 V.
(3) Insulation resistance between each connector terminal and body earth.

**OK: 10 MΩ or more**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Check the motor (electric motor unit) for the insulation resistance or replace the motor (electric motor unit).

**STEP 3. Measure the resistance at G-07 inverter (U terminal) connector, G-08 inverter (V terminal) connector and G-09 inverter (W terminal) connector**

⚠ ***DANGER***
- ***When high voltage system components are serviced, be sure to pull service plugs to shut down high voltage before serving.***
- ***When pulling service plugs, wear the specified protective equipment.***

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between G-08 inverter (U terminal) connector terminal and G-09 inverter (V terminal) connector terminal.
(3) Measure the resistance between G-09 inverter (V terminal) connector terminal and G-10 inverter (W terminal) connector terminal.
(4) Measure the resistance between G-08 inverter (U terminal) connector terminal and G-10 inverter (W terminal) connector terminal.

**OK: Approximately 3 Ω or less**

**Q: Is the check result normal?**
**YES :** Replace the inverter. Then go to Step 4.
**NO :** Replace the motor (electric motor unit).

**STEP 4. Check the trouble symptom.**
Check of the vehicle vibration.

**Q: Is the check result normal?**
**YES :** The diagnosis is complete.
**NO :** Reinvestigate the other parts.

**STEP 6. Check whether the DTC is reset.**
Check again if the DTC is set to the EMCU.
(1) Erase the DTC.
(2) Set the electric motor switch from the "LOCK" (OFF) position to the "ON" position.
(3) Check if the DTC is set.

**Q: Is any DTC U1920 set?**
**YES :** Go to Step 1.
**NO :** The diagnosis is complete.

## TROUBLE SYMPTOM CHART

Old

M1549307400019

| Trouble symptom | Reference page |
|---|---|
| MCU power supply system | |

New

| Trouble symptom | Inspection procedure | Reference page |
|---|---|---|
| EMCU power supply system | 1 | |
| Vehicle vibration | 2 | |

Old

EMCU power supply system <12MY>

New

**Inspection Procedure 1:** EMCU power supply system <12MY>

Added



**Inspection Procedure 2: Vehicle vibration**

**COMMENTS ON TROUBLE SYMPTOM**

The vehicle should be repaired when the driver feels a sense of discomfort during longitudinal repeated vibrations.

*NOTE: A slight vibration may occur in the electric motor unit. There is no fault.*

**PROBABLE CAUSES**

- Improper installation of the motor mount
- Improper installation of the rear suspention
- Malfunction of the motor (electric motor unit)
- Malfunction of the EMCU

## DIAGNOSIS

**STEP 1. Check the trouble symptom.**

- Check installation motor (electric motor unit) and transaxle assembly
- Check installation of the motor mount
- Check installation of the rear suspention

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

**YES :** Go to Step 2.
**NO :** Reinstall it. Then go to Step 4 .

Added

**STEP 2. Check the G-07 inverter (U terminal) connector, G-08 inverter (V terminal) connector and G-09 inverter (W terminal) connector for the insulation resistance.**

⚠ ***DANGER***

- ***When high voltage system components are serviced, be sure to pull service plugs to shut down high voltage before serving.***
- ***When pulling service plugs, wear the specified protective equipment.***

⚠ **CAUTION**

**When the insulation resistance is measured, set the range of the special tool electric insulation tester (MB992355) to 500 volts. When the insulation resistance is measured at the range more than 500 volts, the component may be damaged.**

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Use the special tool electric insulation tester (MB992355) to set the range to 500 vollts.
(3) Insulation resistance between each connector terminal and body ground.

**OK: 10 MΩ or more**

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

**YES :** Go to Step 3.
**NO :** Check the motor (electric motor unit) for the insulation resistance or replace the motor (electric motor unit).

Added

**STEP 3. Measure the resistance at G-07 inverter (U terminal) connector, G-08 inverter (V terminal) connector and G-09 inverter (W terminal) connector**

⚠ ***DANGER***

- ***When high voltage system components are serviced, be sure to pull service plugs to shut down high voltage before serving.***
- ***When pulling service plugs, wear the specified protective equipment.***

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between G-08 inverter (U terminal) connector terminal and G-09 inverter (V terminal) connector terminal.
(3) Measure the resistance between G-09 inverter (V terminal) connector terminal and G-10 inverter (W terminal) connector terminal.
(4) Measure the resistance between G-08 inverter (U terminal) connector terminal and G-10 inverter (W terminal) connector terminal.

**OK: Approximately 3 Ω or less**

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

**YES :** Replace the inverter. Then go to Step 4.
**NO :** Replace the motor (electric motor unit).

**STEP 4. Check the trouble symptom.**
Check of the vehicle vibration.

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

**YES :** The diagnosis is complete.
**NO :** Reinvestigate the other parts.