MITSUBISHI MOTORS

SERVICE BULLETIN

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CHANGE	ISSUE NO. : MSB-13EXML54-002	DATE : 2013-10-17
SUBJECT : DTC P0A09 DCDC CONVERTER (1)		<Affected Destination/Model> (As per attached) <M/Y> 11-12
GROUP : CHASSIS ELECTRICAL (Gr:54D)		i-MiEV(HA3W)

1. Description :

Please refer to the attached document for the information about the change of mention in the applicable service manual. (Some steps are added for the troubleshooting of P0A09)

2. Affected service manuals :

Please refer to the attached document (Attached sheet 1)

3. About the details :

Please refer to the attached document (Attached sheet 5-7)

別紙 1

Attached sheet 1

For overseas market (EU/MMAL/NZ) ※EUR spec is applicable for MMAL and NZ

Applicable manual	Pub. No.	Applicable title (INFO ID)	Contents
2011 i-MiEV Workshop Manual CD-ROM	CHAE11E1-CD (Eng) CHAF11E1-CD (Fra) CHAG11E1-CD (Ger) CHAI11E1-CD (Ita) CHAS11E1-CD (Spa)	Code No. P0A09: DCDC converter (1) (M549-20-520-01200-01)	Attached sheet 5
2012 i-MiEV Workshop Manual CD-ROM	CHAE12E1-CD (Eng) CHAF12E1-CD (Fra) CHAG12E1-CD (Ger) CHAI12E1-CD (Ita) CHAS12E1-CD (Spa)	Code No. P0A09: DCDC converter (1) (M549-20-520-02300-01)	Attached sheet 6

For overseas market (MMNA)

Applicable manual	Pub. No.	Applicable title (INFO ID)	Content
2012 i-MiEV Service Manual CD-ROM	MSCD-018B-2012	DTC P0A09 DCDC converter (1) (M549-20-520-02300-01)	Attached sheet 7

Attached sheet 5 (1/2)

STEP 2. Connector check: A-08X EV control relay (relay box) connecter, B-27 intermediate connector, E-03 on board charger/DC-DC converter connector

<New> STEP 10.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the damaged connector. Or, correct or replace the relay box.

<New> STEP 11.

STEP 3. Check the wiring harness between A-08X EV control relay (relay box) connector terminal No. 1 and E-03 on board charger/DC-DC converter connector terminal No. 8.

Check the power supply line for open circuit.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the wiring harness.

STEP 4. Connector check: E-03 on board charger/DC-DC converter connecter, C-111 EV-ECU connector

<New> STEP 12.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the damaged connector.

STEP 5. Check the wiring harness between E-03 on board charger/DC-DC converter connector terminal No. 4, 11 and C-111 EV-ECU connector terminal No. 116, 127.

Check the signal lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the wiring harness.

<New> STEP 13.

STEP 6. Check the wiring harness between E-03 on board charger/DC-DC converter connector terminal No. 10 and the earth.

Check the earth line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

From attached sheet 5 (2/2) <Added>

~~STEP 7.~~ Check of the high-voltage fuse inside the inverter. <Old>

Q:Is the check result normal?

YES : Go to ~~Step 8.~~ <Old> STEP 11. <New>

NO : Replace the high-voltage fuse.

~~STEP 8.~~ Check of auxiliary battery charging warning lamp <Old>

With the connector connected, apply 12 V to the C-111 EV-ECU connector terminal No. 116.

• Set the electric motor switch from the "LOCK" (OFF) position to the "ON", "START" position.•

OK: The auxiliary battery charging warning lamp goes out.

Q:Is the check result normal?

YES : Replace the on board charger/DC-DC converter. (Refer to .) Then go to ~~Step 10.~~ <Old>

NO : Go to ~~Step 9.~~ <Old> STEP 12. <New> STEP 13. <New>

~~STEP 9.~~ Diagnosis code recheck <Old>

Check again if the diagnosis code is set to the EV-ECU.

(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 the diagnosis code set?

YES : Replace the EV-ECU. (Refer to .) Then go to ~~Step 10.~~ <Old> STEP 13. <New>

NO : Intermittent malfunction (Refer to GROUP 00 - How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction .)

~~STEP 10.~~ Diagnosis code recheck <Old>

Check again if the diagnosis code is set to the EV-ECU.

(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 the diagnosis code set?

YES : Return to Step 1.

NO : The diagnosis is complete.

To attached sheet 5 (1/2)

<Added>

STEP 7. Measure the voltage at E-01 on board charger/DC-DC converter connector.
(1) Disconnect the E-01 on board charger/DC-DC converter connector, and measure the voltage at the wiring harness side.
(2) Measure the voltage between the E-01 on board charger/DC-DC converter connector terminal No. 1 and the body earth.
OK: Battery voltage
Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 8.

STEP 8. Connector check: E-01 on board charger/DC-DC converter connector
Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the damaged connector.

STEP 9. Check the wiring harness between fusiblelink and E-01 on board charger/DC-DC converter connector terminal No. 1.
Check the power supply line for open circuit.
Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the wiring harness. Or, correct or replace the fusiblelink.

Attached sheet 6 (1/2)

STEP 2. Measure the voltage at E-03 on board charger/DC-DC converter connector.

(1) Disconnect the E-03 on board charger/DC-DC converter connector, and measure the voltage at the wiring harness side.
(2) Turn the electric motor switch to the "ON" position.
(3) Measure the voltage between the E-03 on board charger/DC-DC converter connector terminal No. 8 and the body earth.

<New> STEP 11.

OK: Battery voltage

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 3.

<New> STEP 12.

STEP 3. Connector check: A-08X EV control relay (relay box) connecter, B-27 intermediate connector, E-03 on board charger/DC-DC converter connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the damaged connector. Or, correct or replace the relay box.

STEP 4. Check the wiring harness between A-08X EV control relay (relay box) connector terminal No. 1 and E-03 on board charger/DC-DC converter connector terminal No. 8.

STEP 13. <New>

Check the power supply line for open circuit.

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

STEP 5. Connector check: E-03 on board charger/DC-DC converter connecter, C-111 EV-ECU connector

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

<New> STEP 14.

STEP 6. Check the wiring harness between E-03 on board charger/DC-DC converter connector terminal No. 4, 11 and C-111 EV-ECU connector terminal No. 116, 127.

Check the signal lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

STEP 7. Check the wiring harness between E-03 on board charger/DC-DC converter connector terminal No. 10 and the earth.

Check the earth line for open circuit.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

From attached sheet 6 (2/2) <Added>

<Old>

~~**STEP 8.**~~ **Check of the high-voltage fuse inside the inverter.**

Q:Is the check result normal?
YES : Go to ~~Step 9.~~ <Old> STEP 12. <New>
NO : Replace the high-voltage fuse.

<Old>

~~**STEP 9.**~~ **Check of auxiliary battery charging warning lamp**

With the connector connected, apply 12 V to the C-111 EV-ECU connector terminal No. 116.

• Set the electric motor switch from the "LOCK" (OFF) position to the "ON", "START" position.•

OK: The auxiliary battery charging warning lamp goes out.

Q:Is the check result normal?
YES : Replace the on board charger/DC-DC converter. (Refer to .) Then go to ~~Step 11.~~ STEP 14. <New>
NO : Go to ~~Step 10.~~ <Old> STEP 13. <New> <Old>

<Old> <Old>

~~**STEP 10.**~~ **Diagnosis code recheck**

Check again if the diagnosis code is set to the EV-ECU.
(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 the diagnosis code set?
YES : Replace the EV-ECU. (Refer to .) Then go to <Old> ~~Step 11.~~ STEP 14. <New>
NO : Intermittent malfunction (Refer to GROUP 00 − How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction .)

<Old>

~~**STEP 11.**~~ **Diagnosis code recheck**

Check again if the diagnosis code is set to the EV-ECU.
(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 the diagnosis code set?
YES : Return to Step 1.
NO : The diagnosis is complete.

To attached sheet 6 (1/2)

<Added>

STEP 8. Measure the voltage at E-01 on board charger/DC-DC converter connector.
(1) Disconnect the E-01 on board charger/DC-DC converter connector, and measure the voltage at the wiring harness side.
(2) Measure the voltage between the E-01 on board charger/DC-DC converter connector terminal No. 1 and the body earth.
OK: Battery voltage
Q: Is the check result normal?
YES : Go to Step 11.
NO : Go to Step 9.

STEP 9. Connector check: E-01 on board charger/DC-DC converter connector
Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the damaged connector.

STEP 10. Check the wiring harness between fusiblelink and E-01 on board charger/DC-DC converter connector terminal No. 1.
Check the power supply line for open circuit.
Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the wiring harness. Or, correct or replace the fusiblelink.

Attached sheet 7 (1/2)

STEP 7. Check the wiring harness between E-03 on board charger/DC-DC converter connector terminal No. 10 and the ground.

Check the ground line for open circuit.

Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the wiring harness.

<Added> From attached sheet 7 (2/2)

<Old>

STEP 11. <New>

~~STEP 8.~~ Check of the high-voltage fuse inside the inverter.

Q:Is the check result normal?

YES : Go to ~~Step 9.~~ <Old> STEP 12. <New>

NO : Replace the high-voltage fuse.

<New> <Old>

STEP 12.

~~STEP 9.~~ Check of auxiliary battery charging warning light

With the connector connected, apply 12 V to the C-111 EV-ECU connector terminal No. 116.

• Set the electric motor switch from the "LOCK" (OFF) position to the "ON", "START" position.•

OK: The auxiliary battery charging warning light goes out.

<New>

<Old> **Q:Is the check result normal?**

STEP 14.

YES : Replace the on board charger/DC-DC converter. (Refer to .) Then go to ~~Step 11.~~ <Old>

NO : Go to ~~Step 10.~~ STEP 13. <New>

<New> <Old> <Old>

STEP 13.

~~STEP 10.~~ Check whether the DTC is reset.

Check again if the DTC is set to the EV-ECU.

(1)Erase the stored 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 the DTC P0A09 set?

<New>

STEP 14.

YES : Replace the EV-ECU. (Refer to .) Then go to ~~Step 11.~~ <Old>

NO : Intermittent malfunction (Refer to GROUP 00 − How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction .)

<New> <Old>

STEP 14.

~~STEP 11.~~ Check whether the DTC is reset.

Check again if the DTC is set to the EV-ECU.

(1)Erase the stored 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 the DTC P0A09 set?

YES : Return to Step 1.

NO : The diagnosis is complete.

To attached sheet 7 (1/2)

<Added>

STEP 8. Measure the voltage at E-01 on board charger/DC-DC converter connector.

(1) Disconnect the E-01 on board charger/ DC-DC converter connector, and measure the voltage at the wiring harness side.

(2) Measure the voltage between the E-01 on board charger/DC-DC converter connector terminal No. 1 and the body ground.

OK: Battery voltage

Q: Is the check result normal?

YES : Go to Step 11.

NO : Go to Step 9.

STEP 9. Connector check: E-01 on board charger/DC-DC converter connector

Q: Is the check result normal?

YES : Go to Step 10.

NO : Repair the damaged connector.

STEP 10. Check the wiring harness between fusiblelink and E-01 on board charger/DC-DC converter connector terminal No. 1.

Check the power supply line for open circuit.

Q: Is the check result normal?

YES : Go to Step 11.

NO : Repair the wiring harness. Or, correct or replace the fusiblelink.