MITSUBISHI MOTORS

SERVICE CAMPAIGN BULLETIN

SUBJECT:	No:	SC−15−001
ON BOARD CHARGER − SERVICE CAMPAIGN	DATE:	**September, 2015**
	MODEL:	**2010 i−MiEV**

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

PURPOSE

The On Board Charger (OBC) installed in certain 2010 i−MiEV vehicles may have an improperly manufactured condenser on the control board that is susceptible to failure. If failure occurs, certain OBC related functions such as charging of the Main Drive lithium−ion battery and/or the 12V battery may be prohibited.

This campaign bulletin instructs dealers to replace the OBC on all affected vehicles with a countermeasure unit.

AFFECTED VEHICLES

Three 2010 i−MiEVs: JA3EE1HA3W0001662, JA3EE7HA3W0001664 and JA3EE1HA3W0001760.

REQUIRED OPERATIONS

Repairs must be completed by a certified i−MiEV technician.

⚠ WARNING **Since this procedure involves the handling of high voltage components (330V), there is a possibility of electric leakage and/or risk of electric shock. Caution must be used to avoid serious injury, especially during removal, disassembly, or disconnection of the high voltage wiring (orange in color). Ensure the service plug is unplugged prior to working with the high voltage wiring.**

IMPORTANT

Affected new or used inventory vehicles must be repaired before the vehicle is delivered. Dealers must check their inventory vehicles' VINs on the Warranty Super Screen to verify whether the vehicle is involved in this service action.

IMPORTANT

Please ensure the Main Drive battery is fully charged prior to vehicle delivery. This will limit customer inconvenience and maximize customer satisfaction.

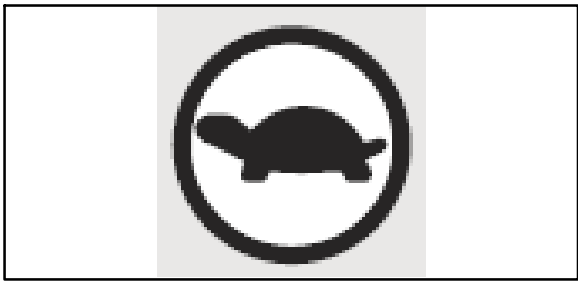
SPECIAL EQUIPMENT

The following equipment is needed to remove and install the OBC and air bleed the radiator coolant:

- Kit, OTC Hybrid Meter − 3990
- Gloves Set, Electric Insulated − MB99264801
- VCI (Vehicle Communication Interface) or VCI Lite − MB991824 or MB992744V.
- MEDIC Laptop/Tablet with A/C power adapter − 520924, or FZG1MK2.
- MUT−III main harness 'A' (blue connector at the DLC end) − MB991910 or MB992745V.
- USB 2.0 cable − MB991827 or RRAR1MBR−108L.

continued

OBC REPLACEMENT PROCEDURE

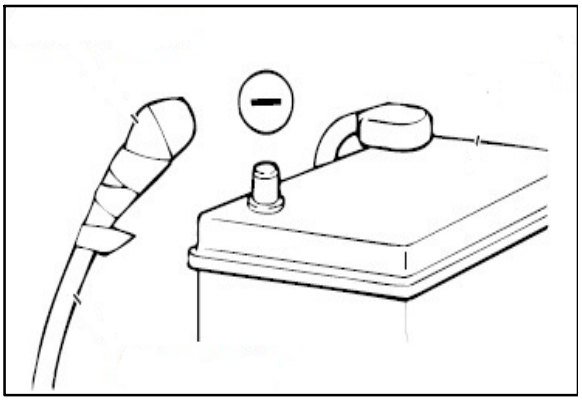


1. Partially discharge the Main Drive lithium−ion battery.
   a. Set the electric motor switch to the “ON” position. Confirm the “READY” light is displayed. Set the heater to the highest temperature and the blower speed to MAX. Allow the battery to discharge until the power down warning light (turtle) is illuminated on the gauge cluster.
   b. Open the liftgate.

2. Set the electric motor switch to “LOCK” (Off). Wait one minute before proceeding to Step 3.

   REMINDER: If not equipped with MMCS Navigation, please record all radio station presets and reprogram when repair is completed.

⚠ WARNING **To avoid causing any trouble to the electric motor unit components, do not disconnect the 12V battery negative (−) terminal for one minute after turning off the electric motor switch to “LOCK” (Off).**



3. Open the hood. Remove the 12V battery cover and disconnect the negative (−) terminal of the battery. Insulate disconnected negative (−) terminal post with electrical tape.

4. Slide the front passenger side seat to its rearmost position. Reach under the seat and release the floor carpet hook and loop fastener to expose the service lid.
5. Remove the two service lid thumb screws and the service lid.

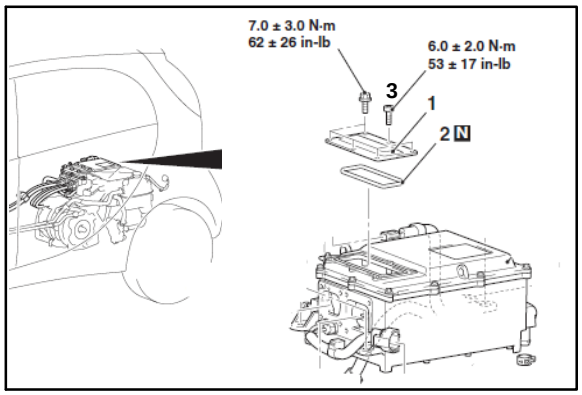
⚠ WARNING **Use the electric insulated gloves to protect from electric shock.**

⚠ CAUTION **Prior to removing the service plug, wait five minutes or more after disconnecting the 12V battery negative (−) battery cable instructed in Step 3.**

6. Use the electric insulated gloves and pull up on the lever to remove the service plug.

   Place the service plug in a secure location to prevent inadvertent reinstallation.
7. Apply duct tape over the terminal to prevent intrusion of foreign material.

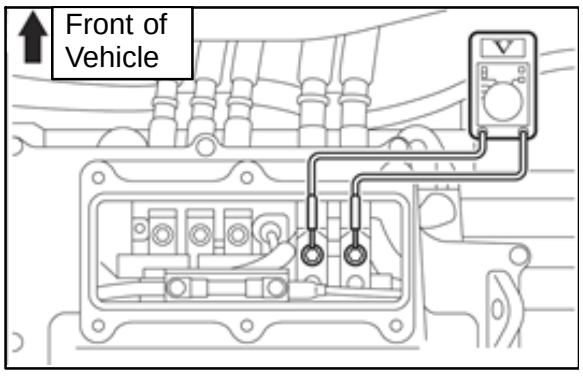
8. Fold the rear seatbacks forward into the passenger compartment.
9. Remove and store the rear access cover.
10. Unscrew the four wing nuts from the power unit inspection lid and open the lid.



11. Remove the service lid (1) on the Motor Control Unit (MCU).

NOTE: The service lid o−ring (2) must be replaced.

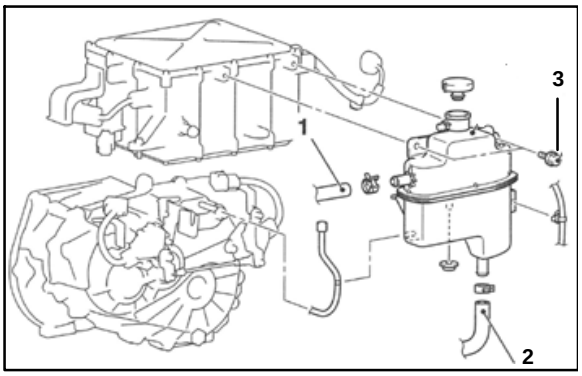
NOTE: One bolt securing the center of the service lid (3) is a Torx bolt (T30).



12. Using a high voltage multimeter, ensure the measured voltage at the terminals shown in the picture, is approximately 0V. If it is not approximately 0V, then wait until the measurement is approximately 0V.

⚠ WARNING **Be careful because the coolant may be hot.**

⚠ CAUTION **Do not disconnect the radiator hoses (1) and (2) connected to the radiator condenser tank when performing Step 13.**



13. Separate the rear radiator condenser tank from the OBC by removing the two bolts (3).

14. Set aside the rear radiator condenser tank and secure it with a string.

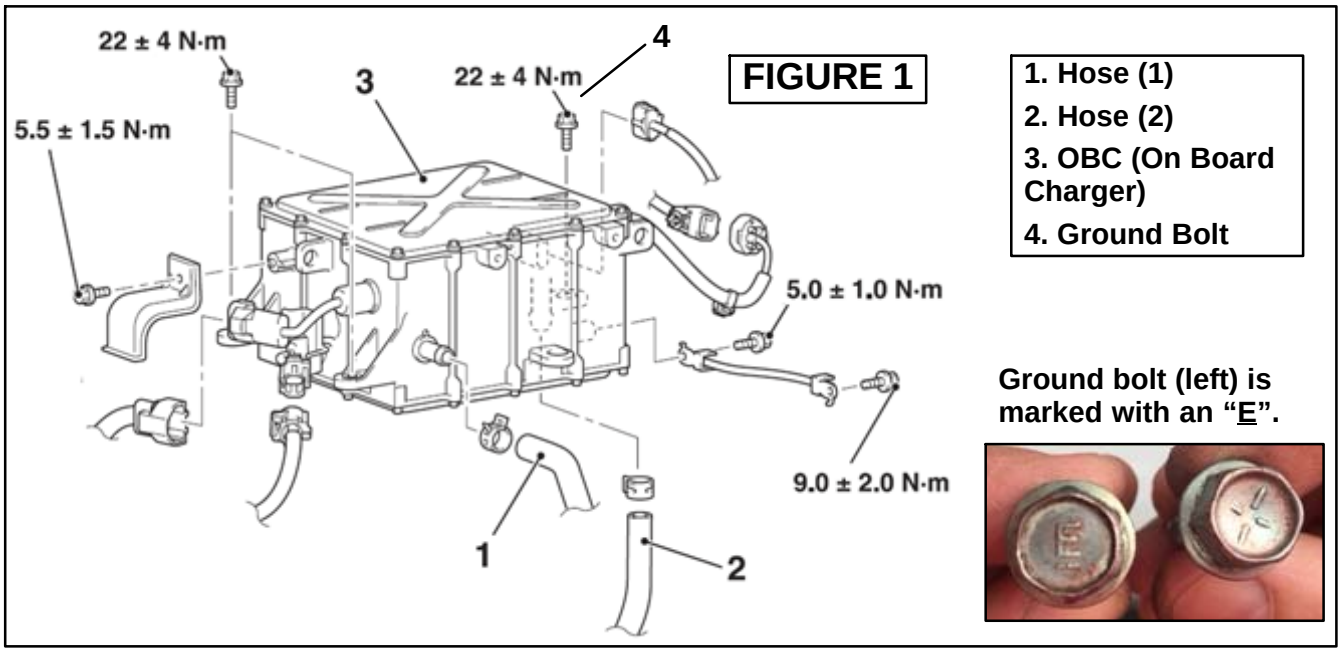


FIGURE 1

1. Hose (1)
2. Hose (2)
3. OBC (On Board Charger)
4. Ground Bolt

Ground bolt (left) is marked with an "E".

⚠ WARNING **Be careful because the coolant may be hot.**

⚠ CAUTION **Prior to radiator hose disconnection, place a clean container under the coolant inlet/outlet to collect coolant spillage. Wipe clean any surface exposed to spilled coolant. Keep the coolant clean since it will be reused.**

15. [Figure 1] Mark the radiator hose (1) clip location with a marker or tape. Place a hose clamp on the hose to prevent coolant leakage. Squeeze and reposition the hose clip further down the hose and disconnect the hose.
16. Place a cap or plug over the OBC's coolant inlet/outlet to prevent coolant spillage during OBC removal.
17. [Figure 1] Mark the radiator hose (2) clip location with a marker or tape. Place a hose clamp on the hose to prevent coolant leakage. Squeeze and reposition the hose clip further down the hose and disconnect the hose.
18. Place a cap or plug over the OBC's coolant inlet/outlet to prevent coolant spillage during OBC removal.

⚠ CAUTION **Prior to new OBC installation, ensure the area is clean and dry.**

19. [Figure 1] Remove and replace the OBC (3) with the countermeasure part indicated in the **PARTS INFORMATION** section.

    NOTE: [Figure 1] Reinstall the ground bolt (4) where indicated.
20. [Figure 1] Reinstall the radiator hoses (1) and (2), ensuring the hose clips are secured in the marked, original location. Remove the hose clamps from the radiator hoses.
21. Remove the cap or plug from the old OBC's coolant inlet/outlet and empty coolant into the coolant container.
22. Unfasten the rear radiator condenser tank and reinstall it. Torque bolts to 62 ± 26 in−lb (7.0 ± 3.0 N−m).
23. Replace the o−ring on the MCU service lid and reinstall the service lid. Torque the torx bolt to 53 ± 17 in−lb (6.0 ± 2.0 N−m) and the remaining 5 bolts to 62 ± 26 in−lb (7.0 ± 3.0 N−m).

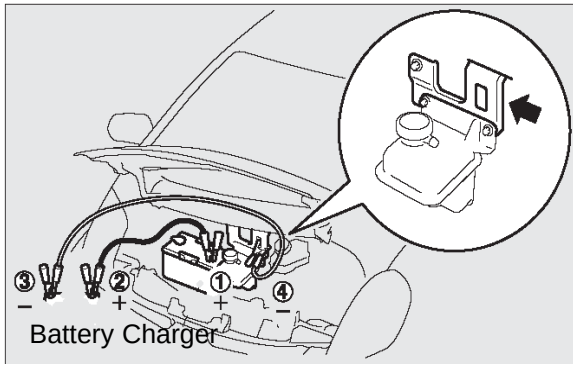
⚠ WARNING **Use the electric insulated gloves to protect from electric shock.**

24. Use the electric insulated gloves to remove the tape covering the service plug terminal. Reinstall the service plug. Secure the service lid with the two thumbscrews and fasten the floor carpet to cover the area.
25. Remove the tape from the negative (−) battery post and reinstall the negative (−) ground cable. Torque specifications for the negative (−) terminal is 44 ± 8 in−lb (5 ± 1 N−m).

⚠ CAUTION **To prevent water pump damage, do not turn on the vehicle and engage "READY" mode until the coolant is refilled.**

26. Refill the rear radiator condenser tank with the collected coolant until it reaches the "F" (Full) mark.

COOLANT SYSTEM BLEEDING PROCEDURE



Battery Charger

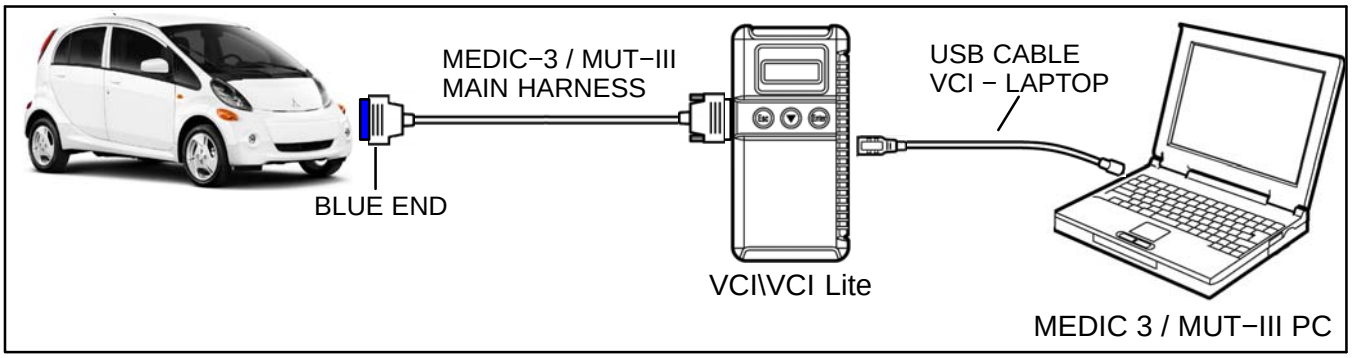
1. Attach a battery charger (with a charging rate not to exceed 10 amps) to the 12V battery.

   NOTE: Ensure battery charger does not time out during this procedure.

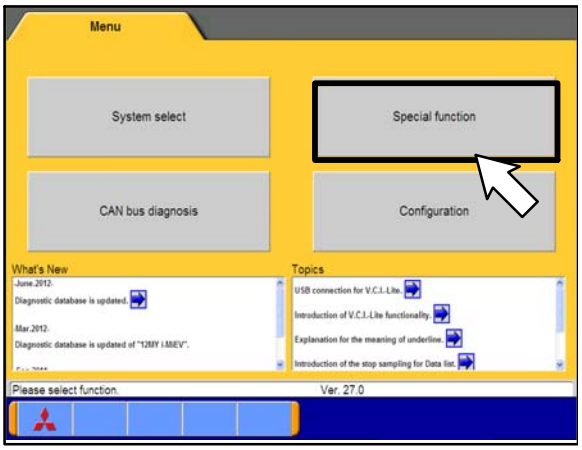
   NOTE: Connect the positive (+) terminal of the 12V battery (1) to the positive (+) battery charger cable (2). Connect the negative (—) battery charger cable (3) to the designated ground location (4).

2. Connect the equipment as follows:
   - Turn the MEDIC PC/tablet on. If the battery indicator in the lower right hand corner of the screen does not show a full charge, it is recommended that either the battery be charged prior to beginning, or be used with the A/C power adaptor connected.
   - Connect the USB cable to the VCI/VCI Lite.
   - When the laptop/tablet displays the MUT−III main screen, connect the USB cable to the device.
   - Connect the MUT−III main harness with the blue DLC connection to the VCI/VCI Lite.
   - Connect the blue connection of the MUT−III main harness to the vehicle's data link connector.
   - Turn the VCI power switch ON . Verify that the indicator lamp in the upper right corner of the screen is green.

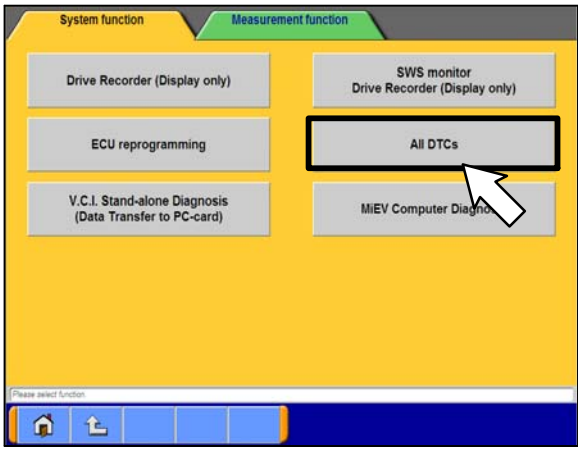
     NOTE: VCI and MEDIC 3 Laptop shown for illustration purposes only



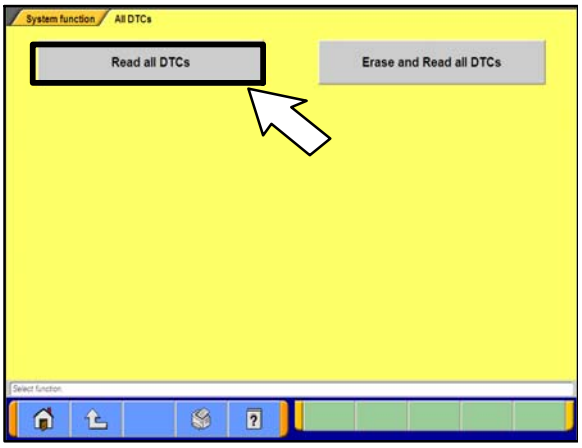
3. Set the electric motor switch to the "ON" position. Confirm the "READY" light is displayed. Turn off all electrical systems (exterior/interior lights, blower motor, radio, etc…).



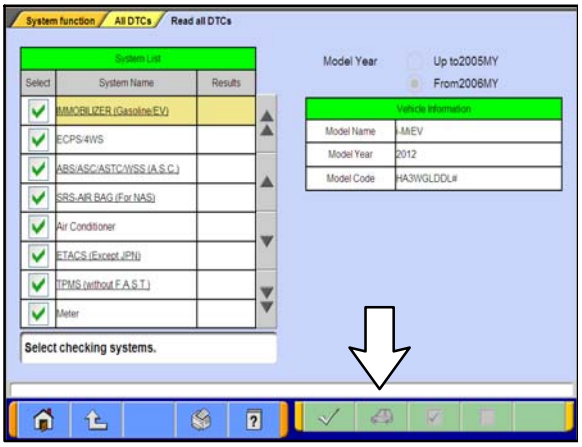
4. From the MUT−III menu, select "Special Function."



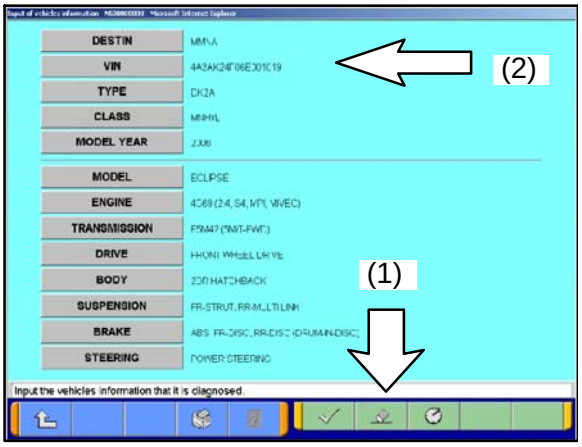
5. Select “All DTCs.”



6. Select “Read all DTCs.”

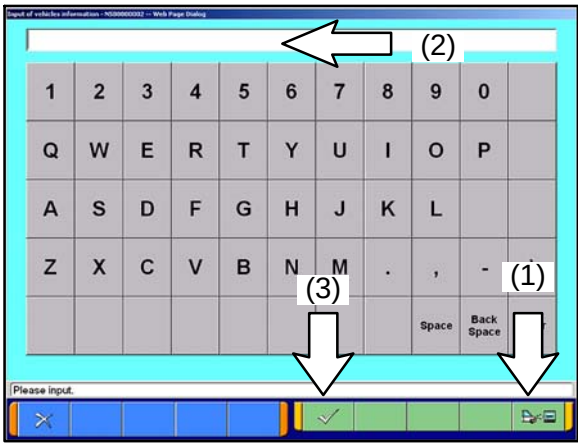


7. Ensure the vehicle information matches the vehicle being inspected. Select the “car” icon.



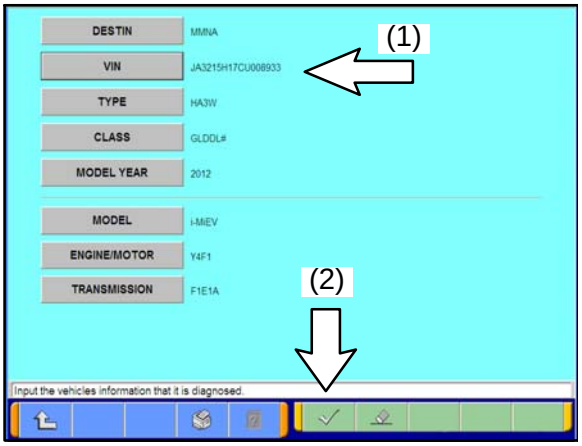
8. If the VIN listed does not match the vehicle being inspected, click on the eraser icon at the bottom of the page (1).

   Click on the VIN button (2).



9. Click on the icon in the lower RH corner of the screen to have the MUT−III automatically read the VIN (1). If a message appears saying that the VIN cannot be read automatically, manually type the 17 digit VIN into the VIN field (2).

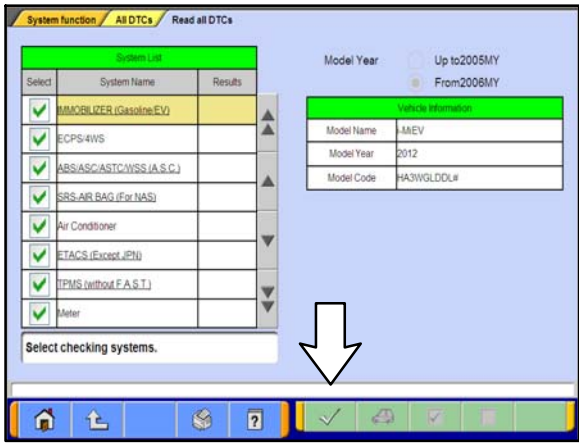
   When the VIN is entered correctly, click on the check mark icon to continue (3).



10. Ensure the VIN entered is correct (1).

    When prompted, select the appropriate transmission.

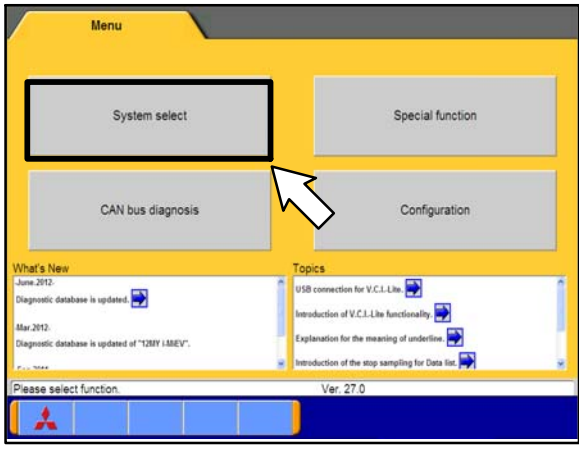
    Click on the check mark icon to continue (2).



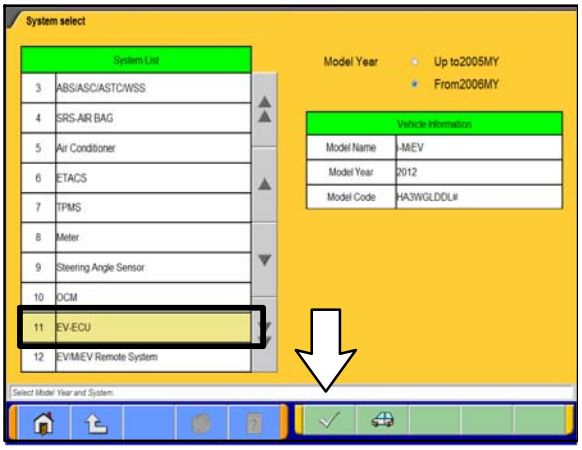
11. Click on the check mark icon at the bottom of the page to initiate DTC scan.

    Confirm scanning for all DTCs by clicking on the check mark icon when prompted.

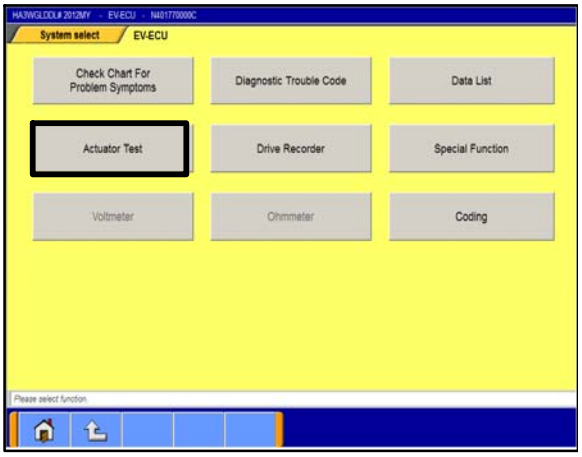
12. When the DTC scan completes, there may be **4** DTCs displayed with codes “U1111” and “U1116”. This is normal. If there are separate DTCs displayed, trouble shoot the DTC’s according to the service manual.



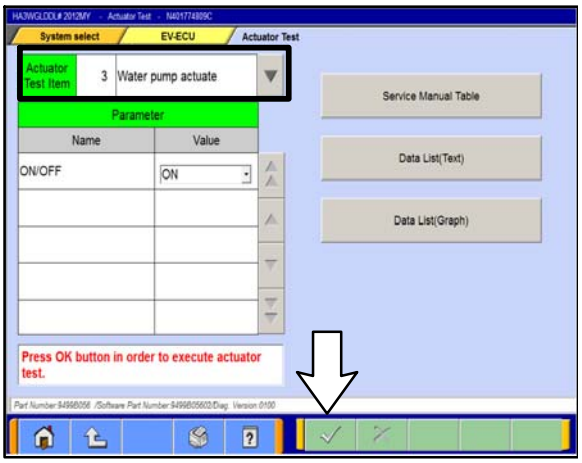
13. From the MEDIC main page, click on MUT−III.
14. Select “System select.”



15. Select EV−ECU. Click on the check mark icon to continue.



16. Select “Actuator Test.”



17. Select item “**No. 3** Water pump actuate.”

    Press the check mark icon to continue. This will initiate water pump actuation in 20 seconds.

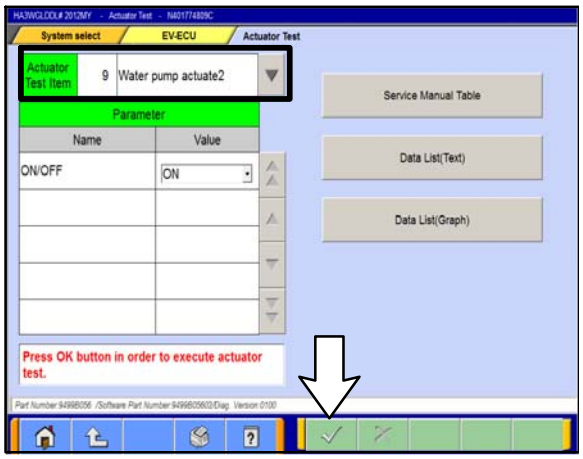
    NOTE: If water pump actuation cannot be completed, or if the vehicle cannot enter “READY” mode, reset the system by setting the electronic motor switch to the “OFF” position and wait at least 60 seconds. Once 60 seconds have elapsed, set the electric motor switch to the “ON” position and confirm the vehicle can be placed in “READY” mode.

    Repeat the water pump actuation process starting from Step 15.

18. Within 20 seconds of performing Step 17, position yourself next to the rear radiator condenser tank. Once the 20 seconds have elapsed, the water pump will actuate for 4 seconds. Once the water pump stops actuating, there will be a 30 second intermission until the water pump starts actuating again for 4 seconds. During this 30 second intermission, fill the radiator condenser tank with coolant until it reaches the “F” (Full) mark.

19. Water pump actuation (4 seconds) and intermission (30 seconds) will cycle 11 more times (12 cycles total − approximately 7 minutes in length). Add coolant to the rear radiator condenser tank to the “F” (Full) mark during each intermission. When water pump actuation does not decrease the amount of coolant in the radiator condenser tank, you may stop the water pump actuation process by turning the vehicle OFF.

    NOTE: If coolant recovered from the old OBC is insufficient in filling the rear radiator condenser tank, procure additional coolant as necessary.



20. Select item “**No. 9** Water pump actuate **2**.”

    Press the check mark icon to continue. This will initiate water pump actuation.

    NOTE: If water pump actuation cannot be completed, or if the vehicle cannot enter “READY” mode, reset the system by setting the electronic motor switch to the “OFF” position and wait at least 60 seconds. Once 60 seconds have elapsed, set the electric motor switch to the “ON” position and confirm the vehicle can be placed in “READY” mode.

    Repeat the water pump actuation process starting from Step 15 and skipping Steps 17 − 19.

21. Allow the water pump to operate for at least 1 minute. Then set the electric motor switch to the ”LOCK” (OFF) position to stop the water pump.
22. Check the coolant level in the rear radiator condenser tank:

    NOTE: If coolant recovered from the old OBC is insufficient in filling the rear radiator condenser tank, procure additional coolant as necessary.

    a. If the coolant level is lower than the “L” (Low) mark, refill the coolant to the “F” (Full) mark and repeat Steps 20 − 22.

    b. If the coolant level is above the “L” (Low) mark, air bleeding is complete. Refill coolant to the “F” (Full) mark and secure the rear radiator condenser tank cap (ensure click is heard).

23. Ensure the vehicle is not leaking any coolant.
24. Reinstall the 12V battery cover. Torque specifications is 35 ± 8 in−lb (4.0 ± 1.0 N−m).
25. Reinstall the power unit lid and rear access cover. Return the rear seatbacks to its original position. Set the clock. Fully charge the i−MiEV Main drive lithium−ion battery. If not equipped with MMCS Navigation, set radio station presets previously noted before returning the vehicle to the customer.

PARTS INFORMATION

Use the genuine Mitsubishi Part listed below:

Description	Part Number	Quantity
Converter and Charging Unit	**9481A093**	**1**
Packing, EV Control Electrical (O−Ring)	**9499A797**	**1**
DiaQueen SUPER LONG LIFE COOLANT PREMIUM or Equivalent	**MZ320125**	**As needed**

WARRANTY INFORMATION

There is only 1 repair scenario for each specific campaign number.

If involved in C1509E01

#	Campaign Op#	Labor Time	Repair Description	Part Number
1	C1509E01	1.1 hrs	Involved vehicles require the On Board Charger to be replaced	9481A093
				9499A797
				MZ320125

WARRANTY / RECALL CAMPAIGN CLAIM INFORMATION

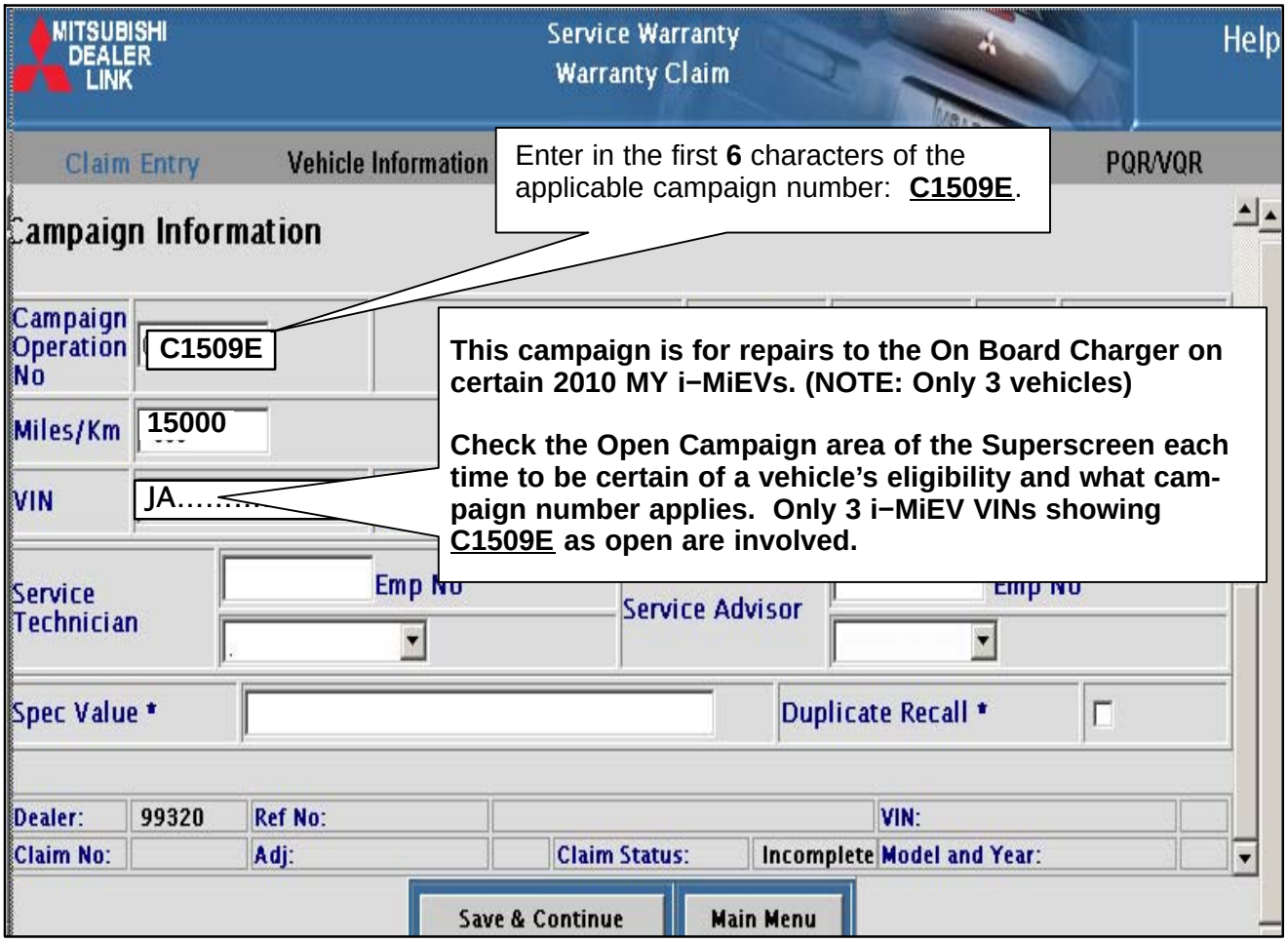
Enter all claims as claim type 'C' − Recall/Campaign Claims

Please follow the campaign instructions when entering each claim in order to select applicable operation code that correctly matches up with the work that was actually performed. A claim example is provided below.

Certain 2010MY i−MiEV Models (Only 3 vehicles involved)

Required Operation to be performed	Labor Operation	Labor Time
1. **2010 i−MiEV On Board Charger −**	**C1509E01**	**1.1 hrs**

Claim Header Section:



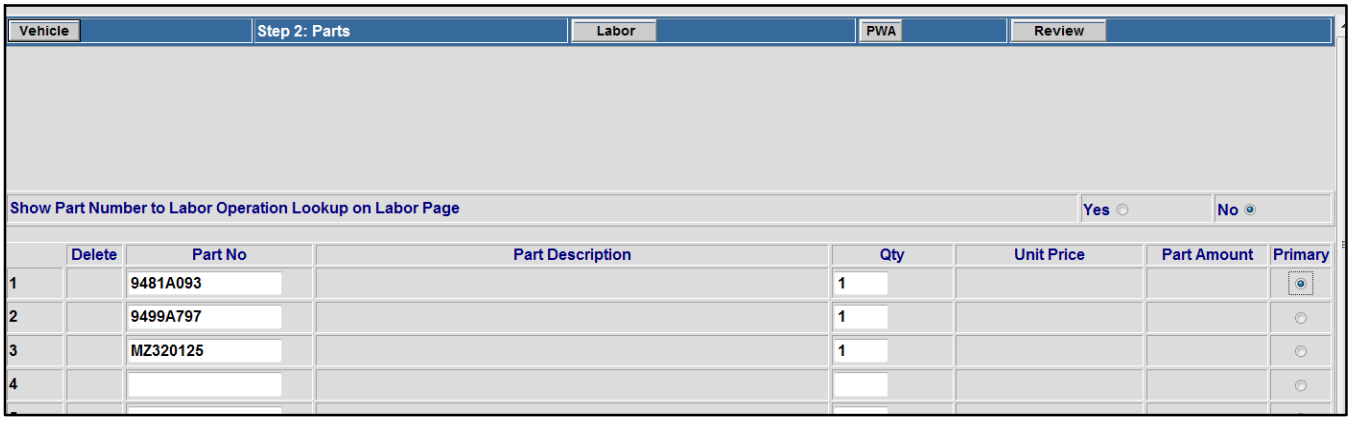
CAMPAIGN INFORMATION					
	Only 3 Vehicles are involved in this campaign.				C1509E - 2010 IMIEV ON BOARD CHARGER REPLACEMENT
Campaign Operation No	C1509E		2010 IMIEV On Board Charger	Repair Performed	
				Repair Order No	EX12345
Miles / KM	15,500				
VIN	CU013185	Repair Date In	10 /30/2015	Repair Date Out	10 / 30 / 2015

Labor and Parts:

There is only 1 possible repair scenario for this campaign. The Superscreen will show one of the three vehicles involved in this campaign. Campaign C1509E01 requires the on board charger to be replaced and claimed along with 2 other part numbers.

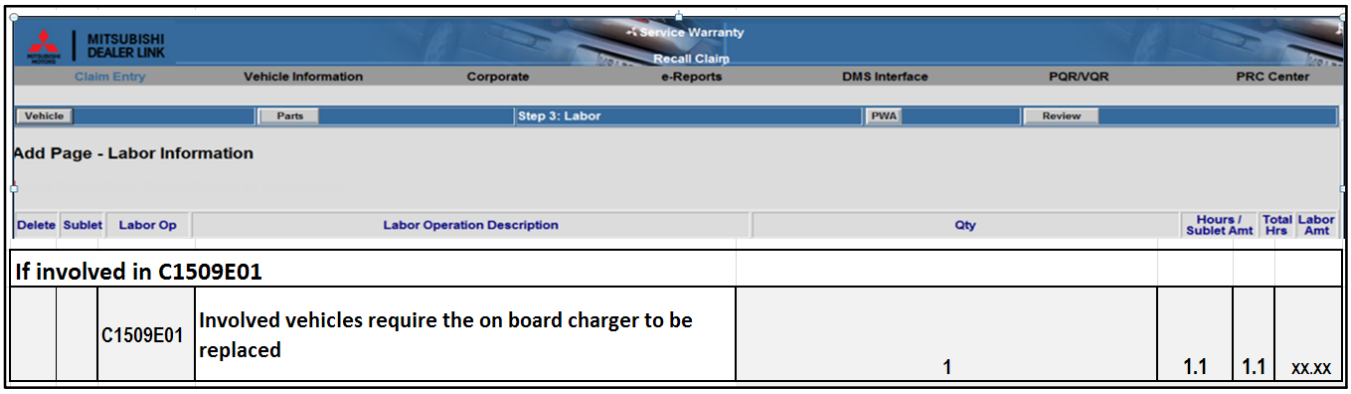
Claim Entry Sample:

Parts: No other parts may be claimed other than what are shown below.



	Delete	Part No	Part Description	Qty	Unit Price	Part Amount	Primary
1		9481A093		1			
2		9499A797		1			
3		MZ320125		1			
4							

Labor: Labor time is 1.1 hours.



Delete	Sublet	Labor Op	Labor Operation Description	Qty	Hours / Sublet Amt	Total Hrs	Labor Amt
If involved in C1509E01							
		C1509E01	Involved vehicles require the on board charger to be replaced	1	1.1	1.1	xx.xx

Rental Cars:

If there is a need to provide the owner with a rental car, claim the applicable charges in this section of the claim on the lower portion of the labor entry screen.

Select	Labor Operation	Labor Operation Description		Amount
☐	SHO	SPECIAL HANDLING ORDER	SHO Parts Order	
☐	RENTACAR	RENTAL CAR CHARGES	Days Reason <Select one> Rental Company Invoice Number	
☐	95300040	FREIGHT CHARGES	Freight Company Invoice Number	
☐	95200040	TOWING CHARGES	Towing Company Invoice Number	

Replaced Parts Retention:

Retain all replaced parts for the standard parts retention holding period of 30 days past the end of month claim statement where the claim was shown as paid.