



SB-10039588-5455

# Technical Service Bulletin

SUBJECT:			No: <b>TSB-11-13-008REVII</b>
<b>ECM REPROGRAMMING FOR DTC P0016 or P0017: CRANKSHAFT/CAMSHAFT POSITION</b>			DATE: <b>November, 2011</b>
			MODEL: <b>See below</b>
CIRCULATE TO:	<input type="checkbox"/> GENERAL MANAGER	<input type="checkbox"/> PARTS MANAGER	<input checked="" type="checkbox"/> TECHNICIAN
<input checked="" type="checkbox"/> SERVICE ADVISOR	<input checked="" type="checkbox"/> SERVICE MANAGER	<input checked="" type="checkbox"/> WARRANTY PROCESSOR	<input type="checkbox"/> SALES MANAGER

***This bulletin supercedes TSB-11-13-008REV, issued November, 2011, to include non-turbo vehicles as requiring MIVEC oil valve and timing chain elongation checks. Changes are italicized and indicated by ◀.***

## PURPOSE

Some affected vehicles may display an illuminated MIL with DTC P0016 Crankshaft/Camshaft Intake Position or P0017 – Crankshaft/Camshaft Exhaust Position Sensor Phase Problem, recorded in the ECM. An incorrect parameter in the judgment criteria may cause mis-detection of a fault without there being an abnormal condition.

This TSB provides dealers with a procedure to reprogram the ECM with new software to correct the condition.

**IMPORTANT:** If an affected vehicle has a Malfunction Indicator Lamp (MIL) illuminated and DTCs other than those described above are listed in the ECM memory (before reprogramming), diagnose and repair those DTCs per the service manual before reprogramming. **DO NOT** reprogram the ECM until the reason(s) for other DTCs being set is corrected.

## AFFECTED VEHICLES

- 2010–2011 Lancer Evolution built before January 27, 2011.
- 2010–2011 Lancer/Lancer Sportback RAE built before January 27, 2011.
- 2010–2011 Lancer/Lancer Sportback built before January 27, 2011.
- 2010–2011 Outlander w/2.4L engine built before January 27, 2011.
- 2011 Outlander Sport (RVR) *built* before January 27, 2011.

**NOTE: Affected Lancer Evolution models that were reprogrammed under TSB-11-13-008 or TSB-11-13-008REV do not require additional reprogramming.**

## REQUIRED OPERATIONS

### OVERVIEW

1. Confirm MUT-III software contains the latest reprogramming database.
2. Reprogram the ECM with new software per the Reprogramming Procedure.
3. Perform “Erase and Read All DTCs.”
4. Perform a test drive to confirm DTCs do not return.
5. Correct any fault found during diagnosis *including:*
  - a. *Check for foreign material in the MIVEC oil control valves.* ◀
  - b. *Check if the timing chain is out of position on the sprocket.*
6. If no fault is found with these components, reset the Timing Chain Learned Value as described in Group 00 – General — Timing Chain Maintenance, of the service manual. ◀  
*Note that MIL illumination may return if the reset is not performed with this procedure.*

For affected **Lancer Evolution, Lancer RAE and Lancer Sportback RAE vehicles only.**

Pay special attention to visually check timing chain elongation (stretch) using procedures described

Continued

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The information contained in this bulletin is subject to change. For the latest version of this document, go to the Mitsubishi Dealer Link, MEDIC, or the Mitsubishi Service Information website ([www.mitsubishitechinfo.com](http://www.mitsubishitechinfo.com))

in Group 11A – Engine — Timing Chain Elongation visual check. If the timing chain is stretched, replace it and the oil pump chain using procedures described in Group 11A – Engine, of the service manual.

**The following equipment is needed to reprogram the ECM.**

- MEDIC laptop computer with A/C power adaptor – 520924, or MIT547708.
- VCI (Vehicle Communication Interface) – MB991824.
- MUT-III main harness 'A' (blue DLC connector) – MB991910.
- USB 2.0 cable – MB991827.
- “Engine Compartment/Control Module” label – p/n MSSF024G00.
- Reprogramming Database N11101 or higher
  - MEDIC 3 update at 085 or higher.
  - Standalone MUT-III laptop with Reprogramming CD 2/11 installed.

**ECM REPROGRAMMING CHART**

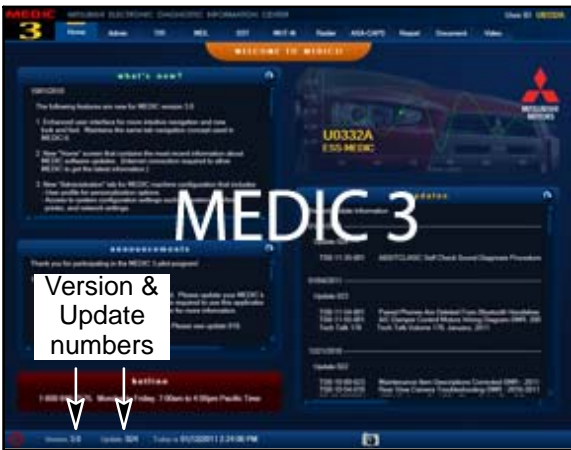
MODEL MODEL YEAR – 2010 (TC* = Turbocharged)	CURRENT PART NO.	DATA NO.	DISPLAY ON MUT-III AFTER REPROGRAMMING	
			New Part No.	New S/W Part No.
10 Lancer Evolution 4B11 TC* 5M/T	1860B306	1862B356	1860B306	1860B30602
10 Lancer Evolution 4B11 TC* TC/SST	1860B307	1862B443	1860B307	1860B30702
10 Lancer/Lancer Sportback CALF 4B11 D4 VVT TC* TC-SST	1860B308	1862B444	1860B308	1860B30802
10 Lancer CALF 4B11 D4 VVT MT	1860B295	1862B421	1860B295	1860B29502
10 Lancer CALF 4B11 D4 VVT CVT	1860B296	1862B425	1860B296	1860B29602
10 Lancer FED 4B11 D4 VVT MT	1860B297	1862B424	1860B297	1860B29702
10 Lancer FED 4B11 D4 VVT CVT	1860B298	1862B426	1860B298	1860B29802
10 Lancer/Lancer Sportback CALF 4B12 D4 VVT MT	1860B299	1862B427	1860B299	1860B29902
10 Lancer/Lancer Sportback FED 4B12 D4 VVT MT	1860B301	1862B428	1860B301	1860B30102
10 Lancer/Lancer Sportback CALF 4B12 D4 VVT CVT	1860B300	1862B429	1860B300	1860B30002
10 Lancer/Lancer Sportback FED 4B12 D4 VVT CVT	1860B302	1862B430	1860B302	1860B30202
10 Outlander CALIF (2WD) 4B12 D4 CVT	1860B247	1862B422	1860B247	1860B24702
10 Outlander CALIF (4WD) 4B12 D4 CVT	1860B303	1862B423	1860B303	1860B30301

MODEL MODEL YEAR – 2011 (TC* = Turbocharged)	CURRENT PART NO.	DATA NO.	DISPLAY ON MUT-III AFTER REPROGRAMMING	
			New Part No.	New S/W Part No.
<i>11 NAS Lancer Evolution 4B11 TC* 5M/T</i>	<i>1860B474</i>	<i>1862B357</i>	<i>1860B474</i>	<i>1860B47403</i>
<i>11 NAS Lancer Evolution 4B11 TC* TC/SST</i>	<i>1860B475</i>	<i>1862B445</i>	<i>1860B475</i>	<i>1860B47503</i>
<i>11 Lancer/Lancer Sportback CALF 4B11 D4 VVT MT</i>	<i>1860B362</i>	<i>1862B419</i>	<i>1860B362</i>	<i>1860B36204</i>
<i>11 Lancer/Lancer Sportback CALF 4B11 D4 VVT CVT</i>	<i>1860B363</i>	<i>1862B420</i>	<i>1860B363</i>	<i>1860B36304</i>
<i>11 Lancer/Lancer Sportback FED 4B11 D4 VVT MT</i>	<i>1860B364</i>	<i>1862B434</i>	<i>1860B364</i>	<i>1860B36403</i>
<i>11 Lancer/Lancer Sportback FED 4B11 D4 VVT CVT</i>	<i>1860B365</i>	<i>1862B435</i>	<i>1860B365</i>	<i>1860B36504</i>
<i>11 Lancer/Lancer Sportback 4B11 D4 VVT TC* TC-SST</i>	<i>1860B485</i>	<i>1862B446</i>	<i>1860B485</i>	<i>1860B48503</i>
<i>11 Lancer/Lancer Sportback CALF 4B12 D4 VVT MT</i>	<i>1860B456</i>	<i>1862B436</i>	<i>1860B456</i>	<i>1860B45602</i>
<i>11 Lancer/Lancer Sportback FED 4B12 D4 VVT MT</i>	<i>1860B458</i>	<i>1862B437</i>	<i>1860B458</i>	<i>1860B45802</i>
<i>11 Lancer/Lancer Sportback CALIF 4B12 D4 VVT CVT</i>	<i>1860B457</i>	<i>1862B438</i>	<i>1860B457</i>	<i>1860B45702</i>
<i>11 Lancer/Lancer Sportback FED 4B12 D4 VVT CVT</i>	<i>1860B459</i>	<i>1862B439</i>	<i>1860B459</i>	<i>1860B45902</i>
<i>11 Outlander Sport (RVR) CALF 4B11 D4 CVT</i>	<i>1860B637</i>	<i>1862B418</i>	<i>1860B637</i>	<i>1860B63703</i>
<i>11 Outlander Sport (RVR) FED 4B11 D4 MT</i>	<i>1860B665</i>	<i>1862B431</i>	<i>1860B665</i>	<i>1860B66502</i>
<i>11 Outlander Sport (RVR) FED 4B11 D4 CVT</i>	<i>1860B638</i>	<i>1862B432</i>	<i>1860B638</i>	<i>1860B63803</i>
<i>11 Outlander CALIF (4WD) 4B12 D4 CVT</i>	<i>1860B461</i>	<i>1862B433</i>	<i>1860B461</i>	<i>1860B46102</i>

## REPAIR PROCEDURE

**NOTE:** Reprogramming the ECM with the latest database (i.e.11101) includes all past and current reprogramming for TSBs of affected vehicles. You do not need to reprogram the ECM for each TSB.

1. Check the underside of the hood to verify there is no “Authorized Modification” label (see page 13 for example) previously installed to indicate this reprogramming has already been completed. If a label is present and the “ROM ID #” on the label matches the “New S/W Part No.” in the table above, the ECM is at the latest level and reprogramming is not necessary. Conduct normal diagnosis for the subject DTCs.

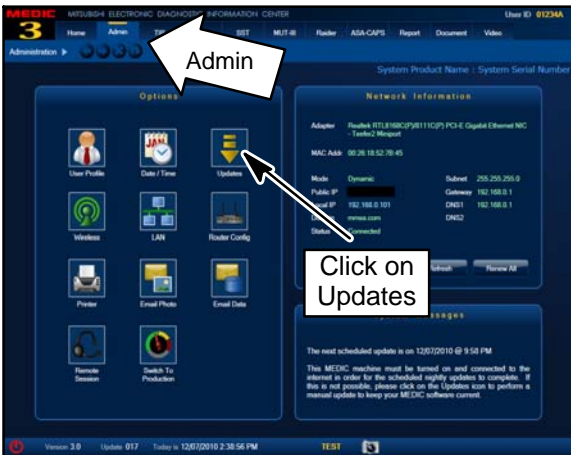


**For MEDIC 3 users only: (MUT-III users go to step 5)**

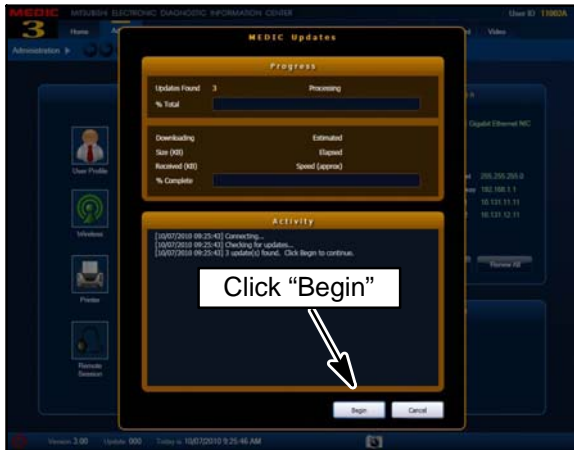
2. Verify the MEDIC 3 is at version 3.1 and at update 085 or higher.

If your **MEDIC 3 update is at least 085**, continue with the Reprogramming Procedure on page 6.

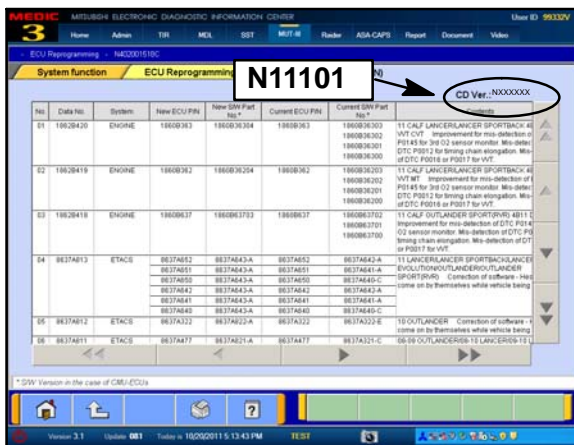
If your **MEDIC 3 update is below 085**, update your MEDIC 3 as follows.



3. Select the MEDIC 3 Admin tab and click on “Updates.”



4. If the MEDIC update screen advises updates are available, click the “Begin” button. After all updates are complete, **GO TO THE REPROGRAMMING PROCEDURE ON PAGE 6.**



5. **Standalone MUT-III Scan Tool Viewer (STV) ONLY: (MEDIC 3 USERS go to the Programming Procedure on page 6).** Verify that your MUT-III has the most current version of the reprogramming database:

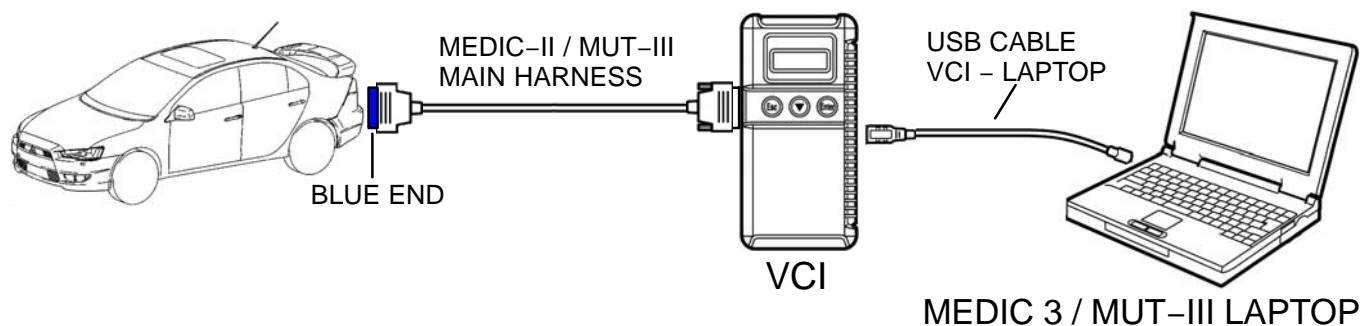
- a. From the MUT-III Main Page:
  - Select “Special Function”
  - Select “ECU Reprogramming”
  - Select “Database File Display-CAN”
  - Confirm the database number displayed at the top right of the chart is **N11101**.
- (1) If the database number displayed on your MUT-III is N11101 or greater, continue to the Reprogramming Procedure on page 6.
- (2) If the database number displayed on your MUT-III is lower than N11101, locate the Yellow MUT-III Reflash CD 02/11 and follow the instructions on the CD label to update your MUT-III.

## REPROGRAMMING PROCEDURE

**CONNECT A BATTERY CHARGER TO THE VEHICLE'S BATTERY DURING THE REPROGRAMMING PROCEDURE. DO NOT ALLOW THE BATTERY CHARGER TO TIME OUT. BATTERY VOLTAGE (AS MEASURED AT THE BATTERY POSTS WITHOUT ELECTRICAL LOAD) MUST BE KEPT AT 12.4V OR HIGHER IN ORDER TO REPROGRAM THE ECM. MEASURE THE BATTERY VOLTAGE AND CHARGE AS NECESSARY.**

**NOTE: VCI Stand-alone reprogramming is not available for this procedure. The laptop and the VCI must remain connected for the entire procedure.**

Connect the equipment as follows:



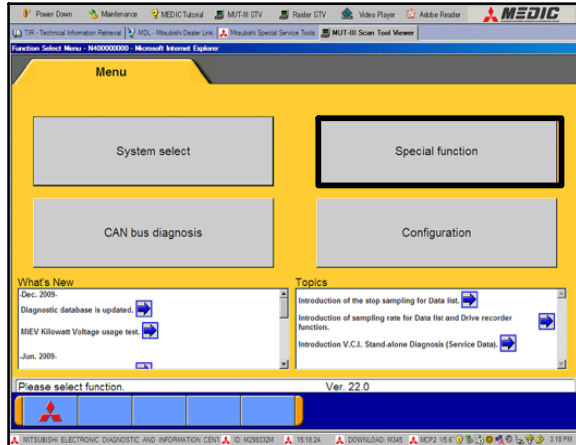
- Turn the laptop computer on. If you're running on battery power and the charge indicator in the lower right hand corner of the screen does not show a full charge, it is recommended that either the laptop battery be charged prior to beginning, or that reprogramming be completed with the A/C power adaptor connected to the laptop.
- Connect the USB cable to the VCI.
- When the laptop displays the MUT-III main screen, connect the USB cable to the laptop.
- Connect the MUT-III main harness with the blue DLC connection to the VCI.
- Connect the blue connector 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.

### **CAUTION**

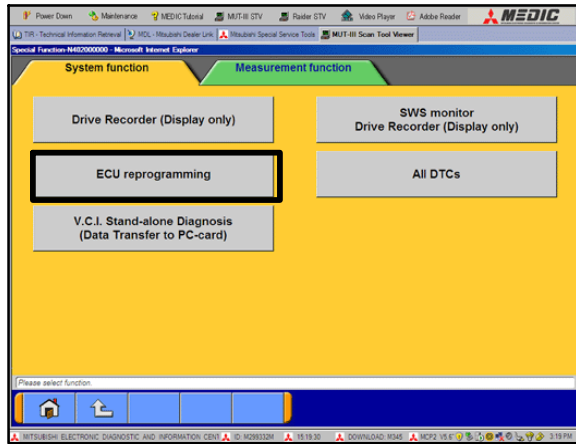
**DO NOT DISTURB THE HARNESS CABLES OR CONNECTIONS. INTERRUPTION DURING THE REPROGRAMMING PROCESS COULD CAUSE THE CONTROL UNIT TO LOSE DATA OR PREVENT FUTURE REPROGRAMMING. IF THE USB CABLE IS DISCONNECTED DURING THIS PROCEDURE, A WARNING MESSAGE WILL DISPLAY.**

## ECM Reprogramming

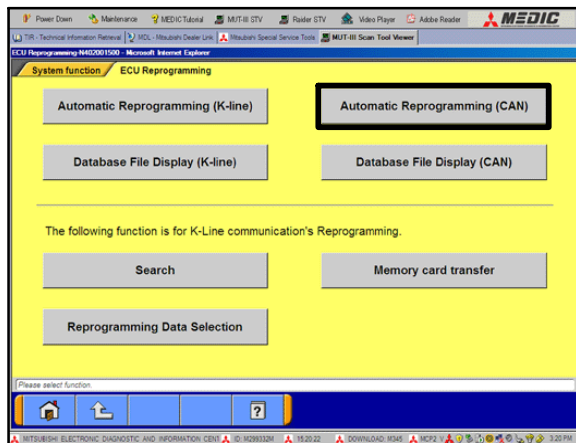
1. Conduct the following steps to reprogram the ECM.
  - a. Turn the ignition switch to the ON position. If the vehicle is equipped with the F.A.S.T. System, the transmitter must remain in the vehicle for the entire procedure.



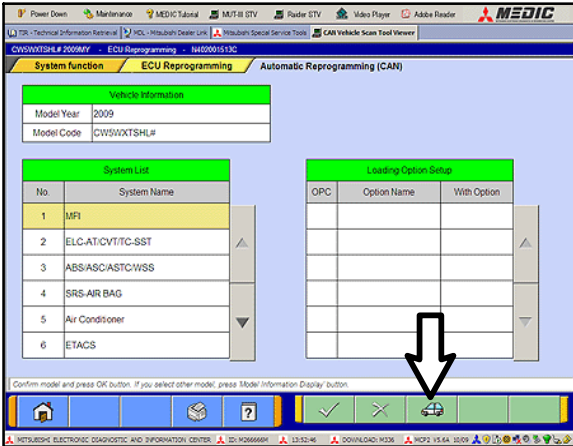
- b. If using MEDIC 3, from the main page, click the MUT-III STV icon at the top center of the screen.
- c. Select "Special Function."



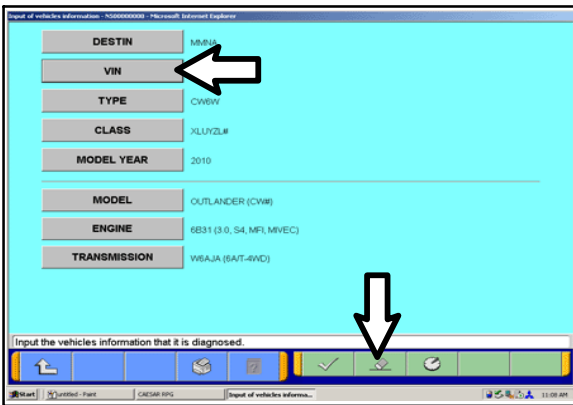
- d. Select "ECU reprogramming."



- e. Select "Automatic Reprogramming (CAN)."

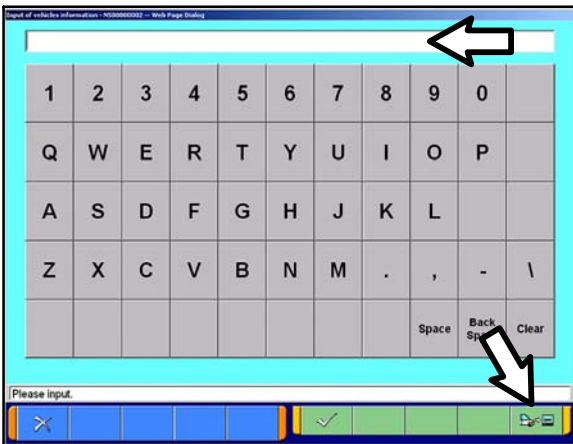


f. Click on the car icon at the bottom of the page.



g. If the VIN or vehicle description displayed does not match the vehicle you are working on, click on the eraser icon at the bottom of the page.

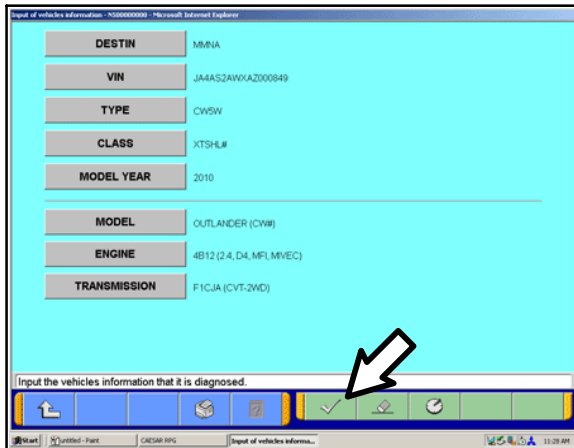
Select VIN by clicking on the VIN button.



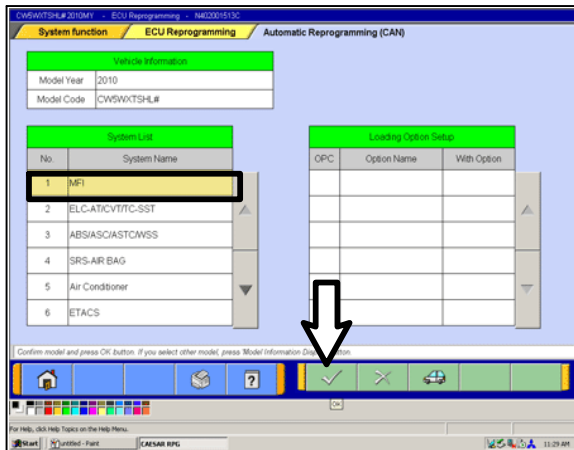
h. Click on the icon in the lower RH corner of the screen to have MUT-III automatically read the VIN. If a message appears saying that the VIN cannot be input automatically, manually type the 17 digit VIN into the VIN field at the top of the page.

Make sure the VIN is correct and click on the check mark.



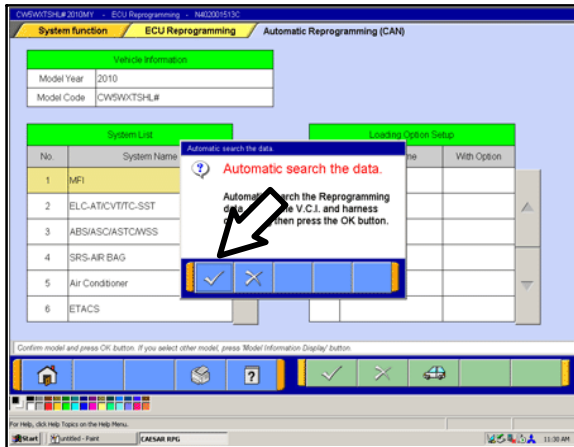


i. Confirm that all data matches the vehicle and click the check mark at the bottom of the page.



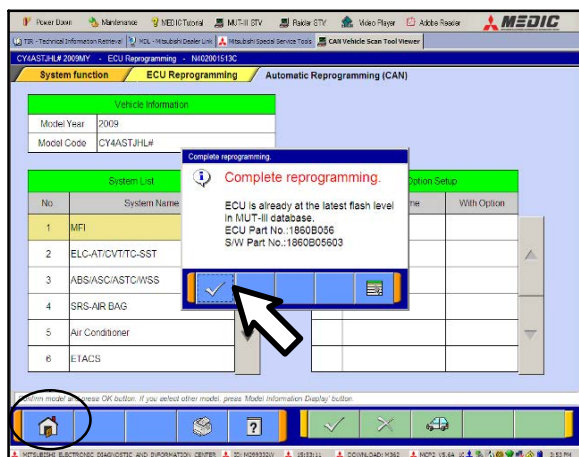
j. MFI should be highlighted as the default. If not, click on it to highlight it.

Click on the check mark at the bottom of the page.



k. A message will advise you that the system will "Automatic search the data."

Click on the check mark to continue.



### ECM TO LATEST VERSION

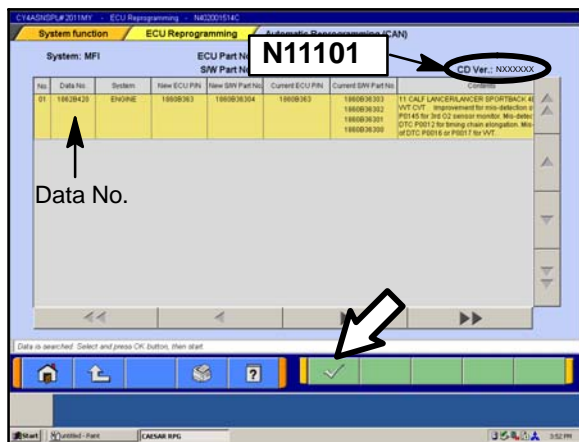
If an “Complete Reprogramming” message **does not** appear, continue with [step 1](#).

If this message is displayed, the ECM software is already at the most current level. Do not continue with this reprogramming procedure. This TSB does not apply.

Click the check mark to clear the window, then click on the Home icon at the lower left corner of the screen to return to the System Select main page.

Turn off the ignition switch and disconnect the MUT-III. Turn off and disconnect the battery charger. Conduct normal diagnosis.

- l. The Automatic Reprogramming(CAN) database screen will display.



Confirm the database number at the top right of the table is **N11101** or higher.

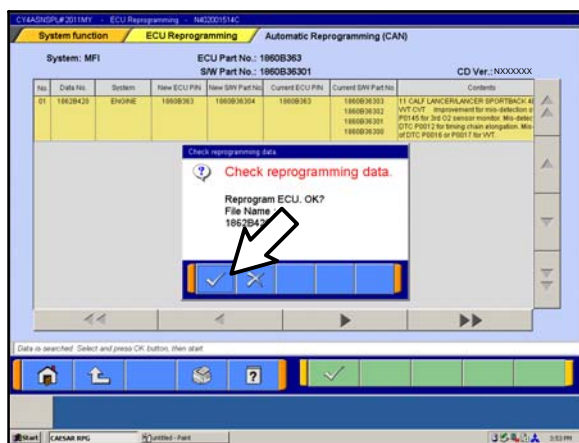
If more than one row is displayed in the table, refer to the ECM Reprogramming Chart beginning on page 2 to select the proper Data No. for this procedure and select the appropriate row.

Click on the correct row to highlight it.

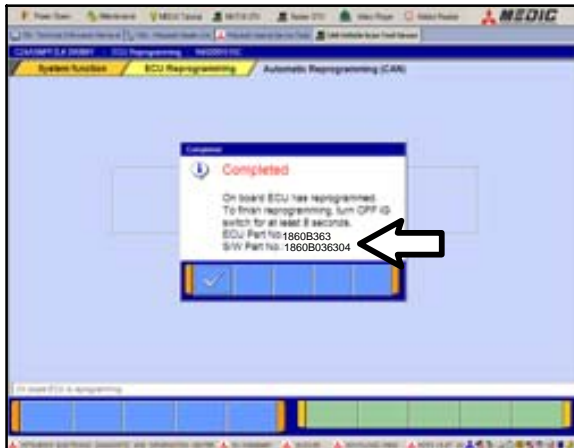
Click on the check mark to continue.

- m. A message will ask you to “Check reprogramming data.”
- n. Click on the check mark to begin reprogramming.

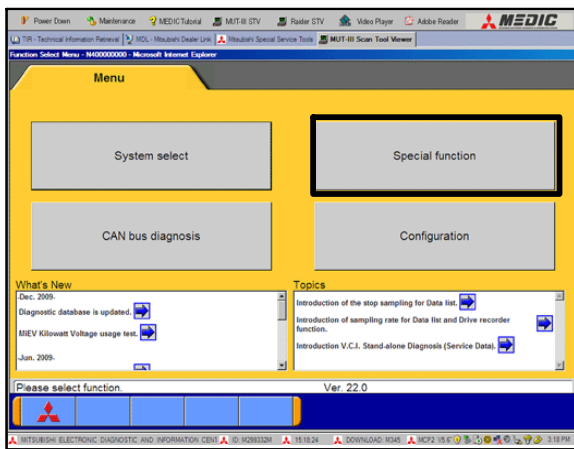
It will take up to 5 minutes for reprogramming to complete.



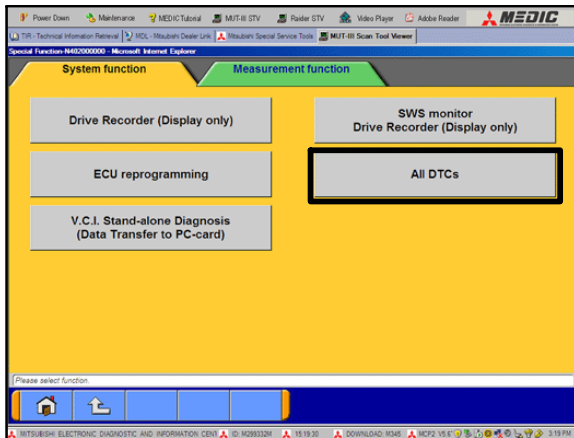
<b>CAUTION</b>	<p>The Daytime Running Lights and both the engine and condenser fans will automatically be turned on during reprogramming. Care should be taken to insure nothing gets caught in the moving blades. The radio will be turned off and you will also hear a chime in the interior for a short period of time. These are normal conditions.</p>
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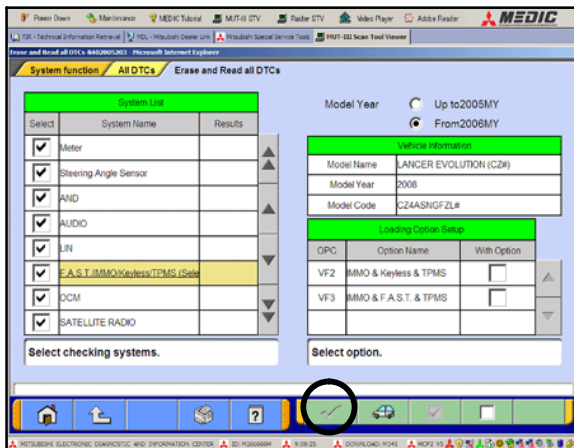
- o. This message will display when ECM reprogramming is successfully completed. Confirm the “New S/W P/N” displayed matches the table at the beginning of this TSB.
  - p. You will be prompted to turn the ignition switch to the OFF position, wait at least 8 seconds, then turn it back on.
  - q. Click the check mark and you will be returned to the “ECU Reprogramming” page.
2. Click the Home icon at the lower left corner of the page to return to the MUT-III main page.



3. Using the MUT-III, check and erase ALL DTCs from all systems as follows.
- a. Select “Special Function.”



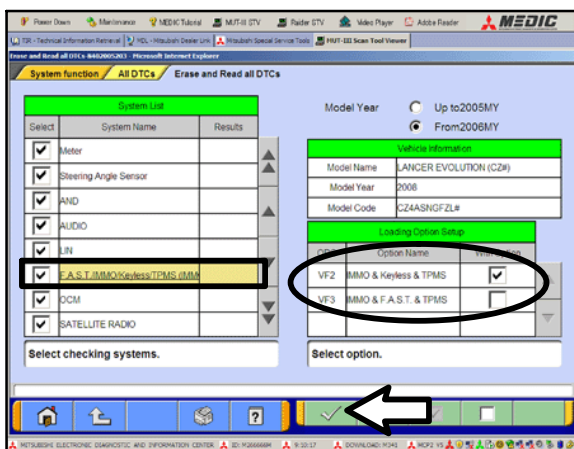
- b. Select “All DTCS,” then select “ERASE AND READ ALL DTCS.”



- c. The list on the left side of the screen will have all selections checked. Do not change these selections. DTCs may be set if the vehicle is equipped with options that are unchecked.

**NOTE:** The list on the RH side of the screen appears for Outlander Sport (RVR) and Lancer based vehicles. For those models, the check mark at the bottom of the page is not highlighted (inactive) at this time.

- d. If the check mark at the bottom of the screen is highlighted, click it to proceed. If not proceed to step e.

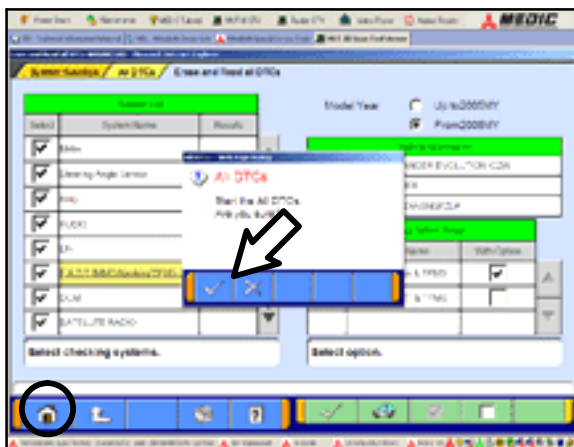


- e. In the left column, scroll to and click FAST/IMMOB/KEYLESS/TPMS. In the right column, check the correct option code (VF#) from the Loading Options Setup list. This will activate the check mark at the bottom of the page.

- Vehicles with regular keyless entry (buttons on a multi-function key), select VF2.
- Vehicles with F.A.S.T. key, select VF3.


- f. In the left column, scroll to and select METER. A window will display. Check the correct display type for the vehicle.

Click the check mark to continue.



4. A window will pop up asking you to confirm DTC erasing. Click the check mark for DTC erasing and reading to begin.
5. When DTC erasing is completed, a window will pop up.
- If DTCs return after reprogramming, click the check mark to clear the window. Diagnose and repair per the Service Manual.
  - If DTCs do not return, click the check mark to clear the window and then click the Home icon in the lower left of the screen to return to the main menu.
6. Turn off the ignition switch and disconnect the MUT-III. Turn off and disconnect the battery charger.

- Using a ball-point pen, enter the appropriate Engine Control Module (ECM) part number, Software Part Number (ROM ID#), this Technical Service Bulletin number (*TSB-11-13-008REVII*), your dealer code, and the current date on the Engine Compartment / Control Module Label (p/n MSSF024G00). The Vendor Code is not applicable. The label is available from your facing PDC.

		<b>AUTHORIZED MODIFICATIONS</b>		These Modifications Have Been Approved as Appropriate by EPA and MSB	
<b>THE FOLLOWING MODIFICATIONS HAVE BEEN MADE:</b>					
PART NUMBER 1860A306		VENDOR CODE N/A		ROM ID # ENG 1860B30602	
TSB ENG <i>TSB-11-13-008REVII</i>		A/T		A/T	
A/T		DEALER CODE 99332		DATE 11/22/11	
<i>Engine Compartment Label</i>			<i>Control Module Label</i>		

The Control Module Label is NOT used for this reflash. It should be discarded.

- Carefully remove all dirt and oil from a vacant area near the VECI label on the underside of the hood, and affix the *Engine Compartment Label* (LH side, above) to that area.
- Test drive the vehicle to confirm proper operation and that the MIL does not illuminate. Diagnose and correct any DTCs that return.

## PARTS INFORMATION

Use only the Genuine Mitsubishi Parts listed below.

Description	Model	Part Number
Label, Engine Compartment	All	MSSF024G00

## WARRANTY INFORMATION

This bulletin is supplied as technical information only and is not an authorization to repair. If an affected vehicle is reported with the described condition, diagnose the condition, repair as described in this bulletin and submit a normal warranty claim using the following information.

### ECM Reprogramming for DTC P0016 or P0017

*Nature Code:* 91Z

*Cause Code:* 605

*Labor Operation No.:* 138501 95

*Time Allowance:* 0.3 hr.

*Warranty Coverage:* Emissions Coverage – Refer to the Superscreen for individual vehicle warranty coverage terms.

*Special Warranty Information:* Normal warranty procedures apply.