



Technical Service Bulletin

SUBJECT: SHIFT SHOCK WHEN COMING TO A STOP OR AFTER A COMPLETE STOP			No: TSB-17-23-003
			DATE: April, 2017
			MODEL: 2014-17 Mirage, 2017 Mirage G4
CIRCULATE TO:	<input type="checkbox"/> GENERAL MANAGER	<input checked="" 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

PURPOSE

On certain Mirage and Mirage G4 vehicles with CVT transmissions, drivers may experience shift shock in the following conditions:

Condition 1: When coming to a stop.

Condition 2: After coming to a complete stop with the transmission in the D range.

The first condition may be caused by improper timing of the torque converter clutch disengagement.

The second condition may be due to improper CVT clutch engagement control, causing the driver to experience shift shock when the CVT clutch is re-engaged.

This TSB instructs dealers to reprogram the CVT ECU with updated software to optimize the torque converter or CVT clutch engagement control to minimize shift shock.

AFFECTED VEHICLES

The following vehicles equipped with CVT transmissions may exhibit one or both shift shock conditions:

Condition	Model	Model Year	Affected VIN Range	
			Starting VIN	Ending VIN
1 & 2	Mirage	2014	All	
		2015		
2	Mirage	2017	Beginning of Production	ML32A3HJ2HH020447
	Mirage G4			ML32F3FJ9HHF19303

REQUIRED OPERATIONS

1. Confirm your MUT-III is updated with the latest reprogramming database.
2. Reprogram the CVT ECU with the new software. Refer to the CVT ECU Reprogramming Chart for new software information.

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

EQUIPMENT

The following equipment is needed to reprogram the CVT ECU.

- VCI (Vehicle Communication Interface) or VCI Lite – MB991824 or MB992744.
- MEDIC Laptop/Tablet with A/C power adapter – 520924, or FZG1MK2.
- MUT–III main harness 'A' (blue connector at the DLC end) – MB991910 or MB992745.
- USB 2.0 cable – MB991827 or MB992747.
- MEDIC 3.5/4 update at **460** or higher.
- For Standalone MUT–III SE units, MUT3–SE Reprogramming Database **N170401** or higher.

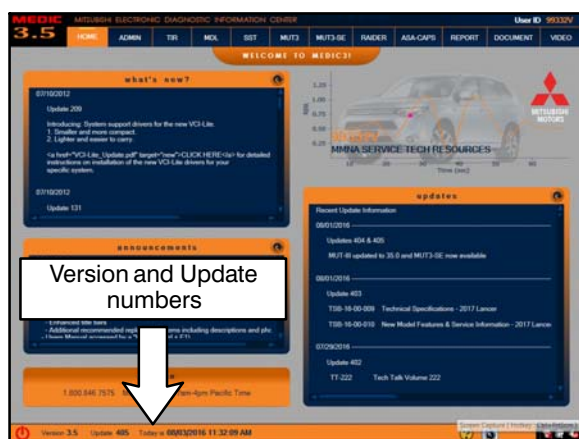
CVT ECU REPROGRAMMING CHART

Model	CVT ECU Part Number	Data No.	Software Part Number	
			Previous	New
2014-15 Mirage	8631A974	8631B825	8631A974 0A 8631A974 0B 8631A974 0C	8631A974 0D
2017 Mirage, Mirage G4	8631B407	8631B439	8631B407 0A	8631B407 0B

NOTE: Learning procedure is not required after reprogramming.

REPAIR PROCEDURE

MEDIC VERSION VERIFICATION



For MEDIC 3.5/4 users only: (MUT–III STV users go to step 4.)

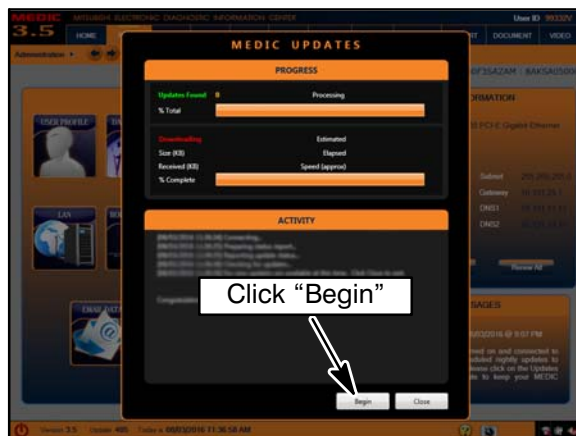
1. Verify the MEDIC 3.5/4 is at version 3.5 and at update **460** or higher.

If your **MEDIC 3.5/4 update is at least 460**, continue with the Reprogramming Procedure.

If your **MEDIC 3.5/4 update is below 460**, update your MEDIC as follows.



2. Select the MEDIC 3.5/4 Admin tab and click on “Updates.”



3. IF the MEDIC update screen advises updates are available, click the “Begin” button. After all updates are complete, **GO TO THE REPROGRAMMING PROCEDURE.**



4. **STANDALONE MUT-III SCAN TOOL VIEWER (STV) ONLY: (MEDIC 3.5 USERS GO TO THE REPROGRAMMING PROCEDURE).** Verify that your MUT3-SE has the most current version of the reprogramming database:
From the MUT3-SE Main Page:
a. Click “STV.”

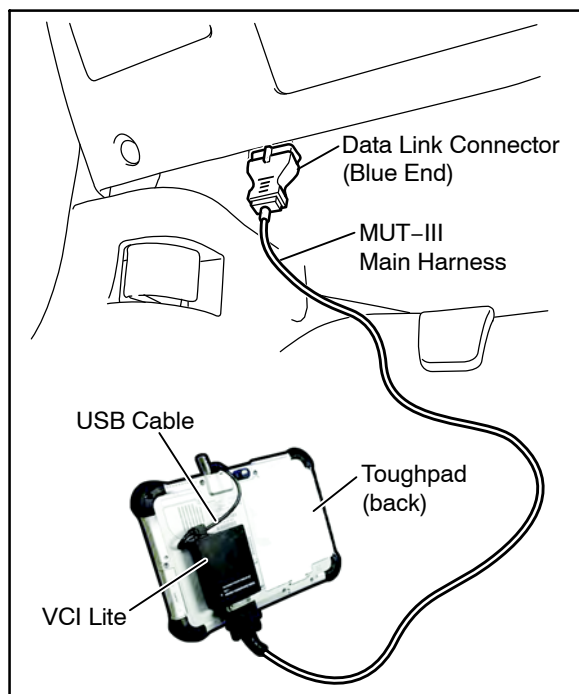
REPROGRAMMING PROCEDURE

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

CAUTION To ensure that the vehicle battery maintains 12V during the procedure, hook-up a battery charger to the vehicle during the procedure.

1. Connect the equipment as follows:

NOTE: VCI Lite and MEDIC 4.0 Toughpad shown for illustration purposes only.



- 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.

CAUTION

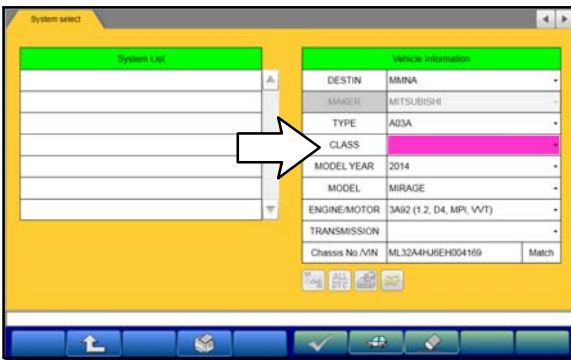
DO NOT DISTURB THE HARNESS CABLES OR CONNECTIONS DURING THE CODING PROCESS AS IT COULD CAUSE THE CONTROL UNIT TO LOSE DATA. IF THE USB CABLE IS DISCONNECTED DURING THIS PROCEDURE, A WARNING MESSAGE WILL DISPLAY.

2. Turn the ignition switch to the "ON" position.



- Using MEDIC, from the main page, click the “MUT3–SE” icon at the top center of the screen to open MUT–III SE.

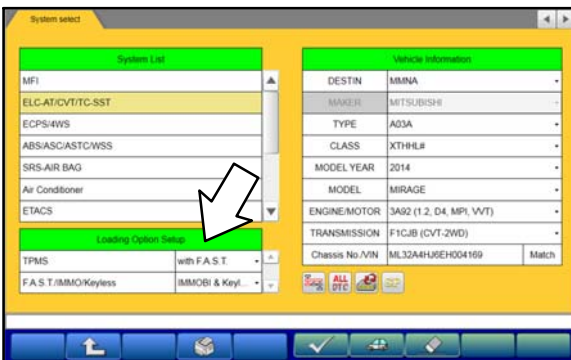
Click the STV button.



- The System Select screen opens and populates with some basic information from the vehicle.

Look at the label on the passenger side B pillar to identify the appropriate class.

Then select the correct class from the drop–down list.

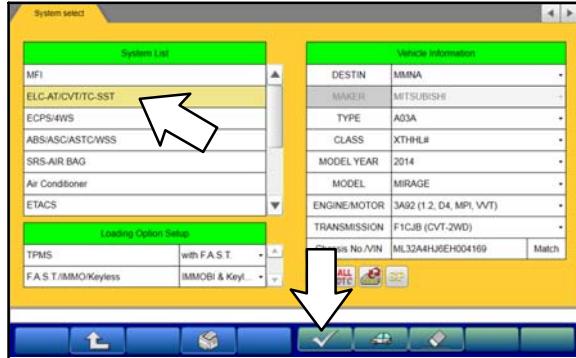


- The System List should now populate with vehicle information.

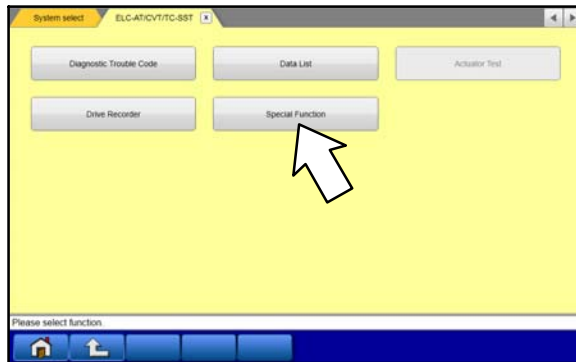
Select the correct Loading Option Setup from the drop–down lists.

- TPMS: (e.g., with F.A.S.T. / w/o F.A.S.T.)
- AUDIO: (e.g., Intelligent Display / Display Audio / Standard Audio)

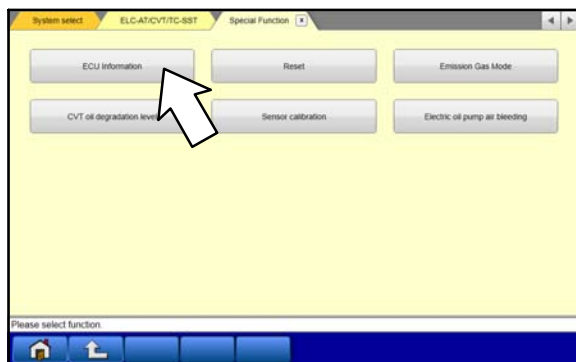
6. Verify that the CVT ECU has not already been updated to the latest S/W number in the table above.
 If the CVT ECU is at the latest level, reprogramming is not necessary.



- a. Select “ELC–AT/CVT/TC–SST” from the System List, then click on the check mark at the bottom of the screen.



- b. Select “Special Function.”



- c. Select “ECU Information.”



- d. If the Software Part Number listed is **not** at the latest level (shown in the CVT ECU Reprogramming table), proceed with the next step.

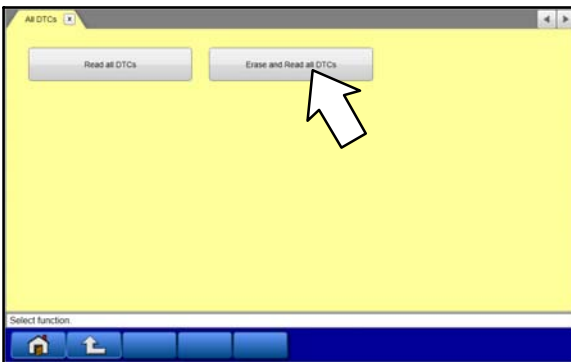
If the Software Part Number **is** at the latest level, then reprogramming is not necessary.

7. Before reprogramming, perform an “Erase and Read All DTCs” to clear any DTCs that may have set.

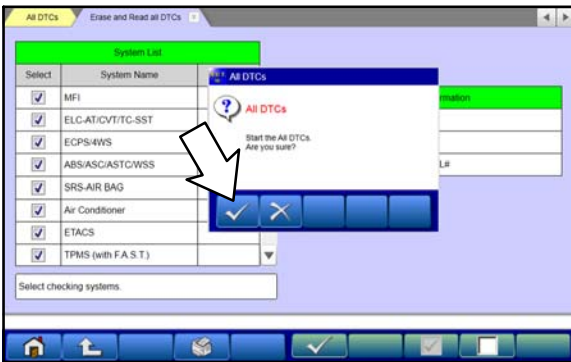


a. Click the home button to go back to the System Select screen.

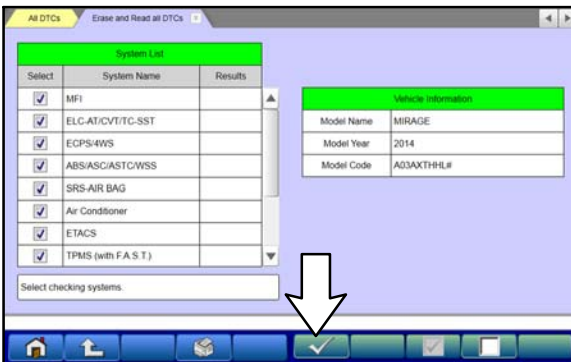
Click the “ALL DTC” button.



b. Select “Erase and Read All DTCs.”

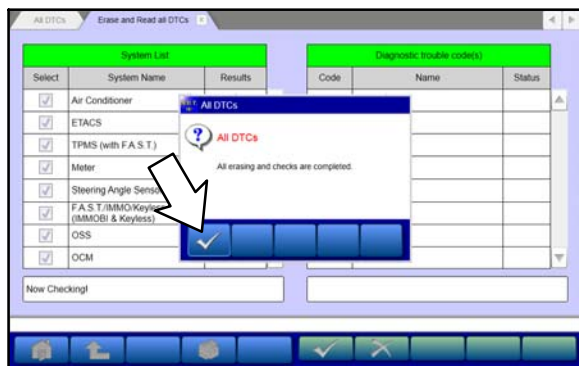


c. A window will pop up asking you to confirm DTC erasing. Click the check mark in the dialog box for DTC erasing and reading to begin.



d. The “System 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.

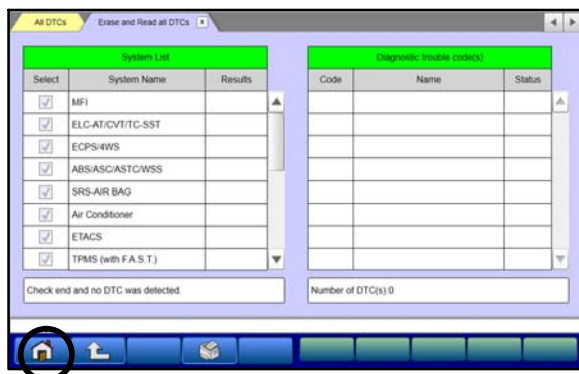
e. Click the check mark to continue.



8. When DTC erasing is completed, click the check mark in the pop-up message that reads “All erasing and checks are completed.”

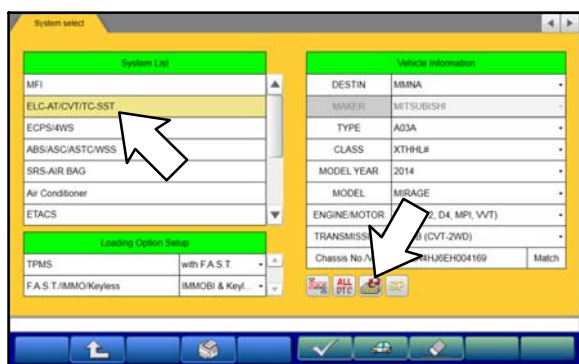
a. If DTCs return after erasing is completed, click the check mark to clear the window. Diagnose and repair per the Service Manual.

b. If DTCs do not return, click the check mark to clear the window, then click the Home icon in the lower left to return to the System Select menu.



9. Reprogram the CVT ECU following the steps below.

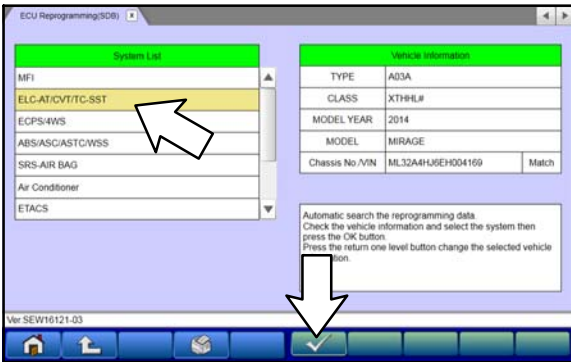
NOTE: Reprogramming the CVT ECU with the latest database (e.g., **N170401**) includes all past and current reprogramming for TSBs of affected vehicles. It is not necessary to reprogram the CVT ECU for each previous TSB.



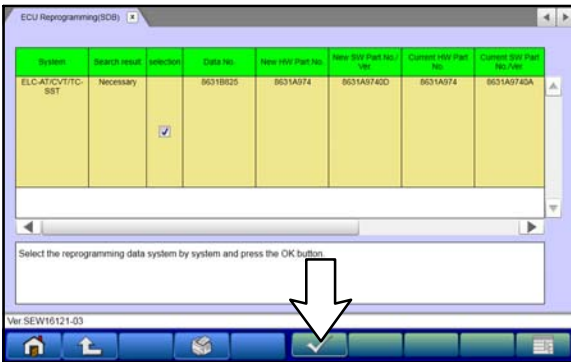
a. Select “ELC–AT/CVT/TC–SST” from the System List, then click on the Reprogram button.



b. Select “ECU Reprogramming (SDB).”



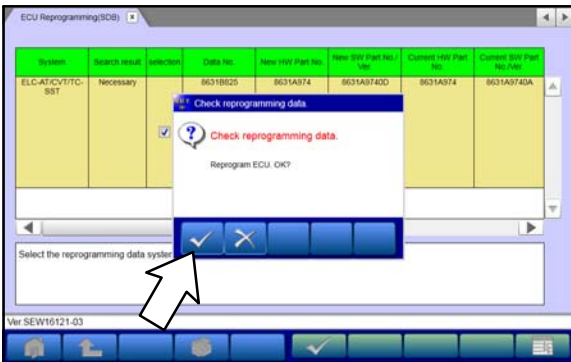
c. Verify the correct system is selected in the System List, then click the check mark.



d. Select the correct data file listed in the CVT ECU Reprogramming table:

- 2014–15 Mirage: **8631B825**
- 2017 Mirage, Mirage G4: **8631B439**

e. Click the check mark at the bottom of the page to initiate reprogramming.

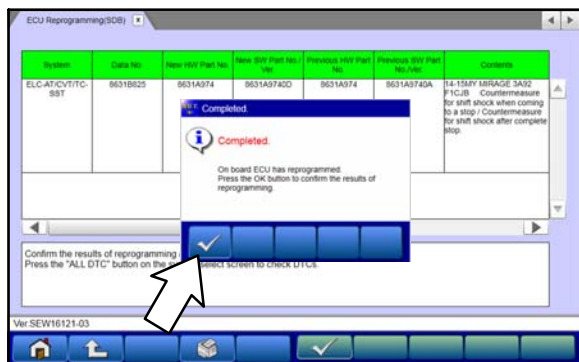


f. Click the check mark in the “Check reprogramming data.” dialog box.

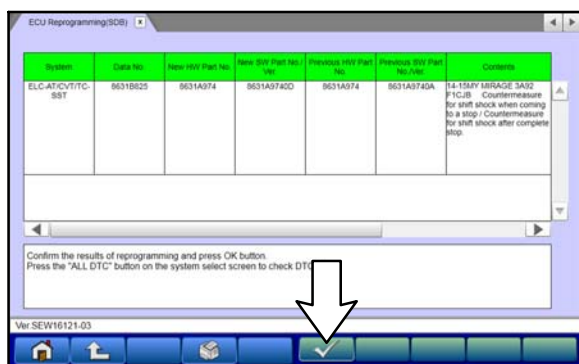


g. Once the reprogramming is initiated, the screen shown will indicate the reprogramming progress.

NOTE: Do NOT disturb the cables or turn off the ignition during reprogramming.



h. Click the check mark in the “Completed” dialog box.



i. Verify the correct information is listed in the table. Click the check mark at the bottom of the page, then click the Home button to return to the System Select screen.

10. Perform an “Erase and Read All DTCs” again to clear any DTCs that may have set.
For instructions, refer to steps 7 and 8 in this TSB.
11. Verify that the software Data No. is now at the latest number listed in the CVT ECU Reprogramming table in this TSB.
For instructions, refer to step 6 in this TSB.
12. Turn off the ignition switch and disconnect the MUT—III. Turn off and disconnect the battery charger.
13. Test drive the vehicle to confirm proper operation.

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.

Operation	Labor Operation Code	Nature Code	Cause Code	Time Allowance
Reprogram CVT ECU	238501 13	82J	8A0	0.4 hrs.

Warranty Coverage: 8 years / 80,000 miles