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CALIBRATION INSTRUCTIONS

DCT470 MUT-III TEACH-IN

DMS-00-0045 REVISION 002

28 JULY 2022

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DATE: 22JUL2022

RELEASED BY:
DATE: 28JUL2022

REVISION UPDATE NOTES:

The following table indicates the changes made in either the disassembly or assembly of the product you have received. All changes are indicated by a revision bar in the margin.

If you have any questions email us at **technical@dodsonmotorsport.com**

Revision	Date		Description
REV.002	28JUL2022	-	Revised formatting.
REV.001	14SEP2021	-	Converted to a new format.

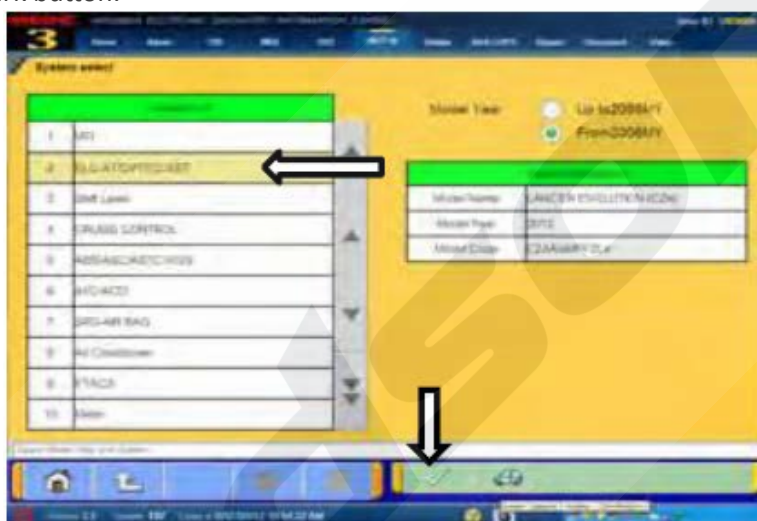# EVO X (DCT470) MUT-III TEACH-IN INSTRUCTIONS
PREPARATION

STEP 1

Make sure that the TCM is coded and programmed correctly before attempting this procedure. Only TCMs with firmware version 0001 or 0002 have the "Teach-In" function available. With the car up on the hoist, turn off the traction control and drive the car through all gears. Once in manual, and then once in automatic. This will ensure there is no trapped air in the valve body which can result in learning failure. ==FIRMLY apply the parking brake AND service brake during the entire procedure.== Releasing the brake pedal during the procedure will pause it.
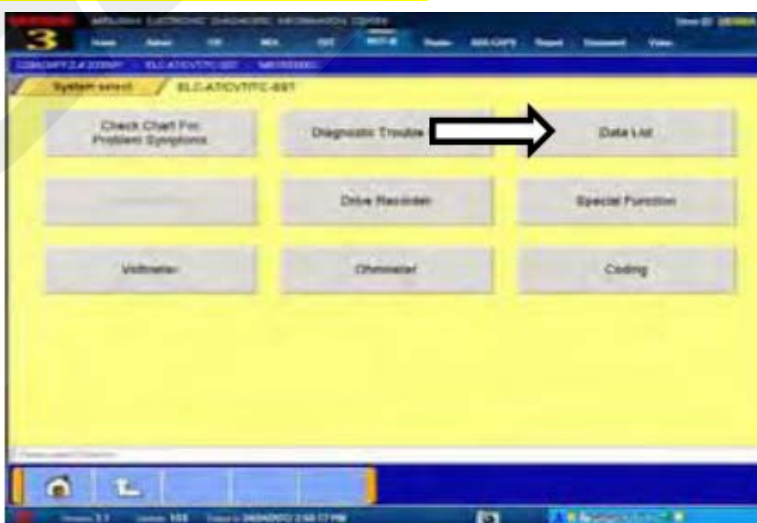
STEP 2

From the MUT-III menu, click **"System Select"**, then select the **"ELC - AT/CVT/TC-SST"** and confirm using the checkmark button.
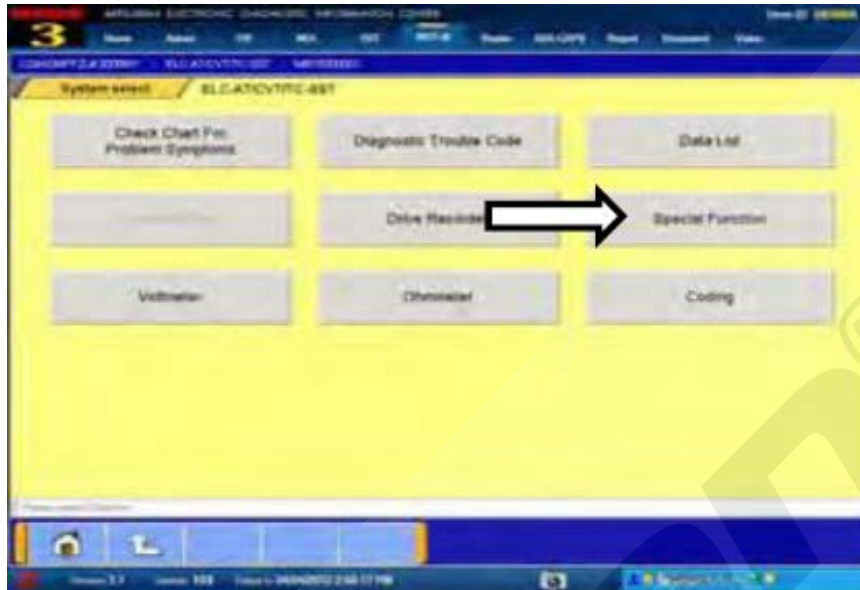

STEP 3

Allow transmission fluid temperature to reach ==40°C==. The temperature can be monitored under the **"Data List"** option, Data item #55 **"Transmission Temperature Sensor"**.

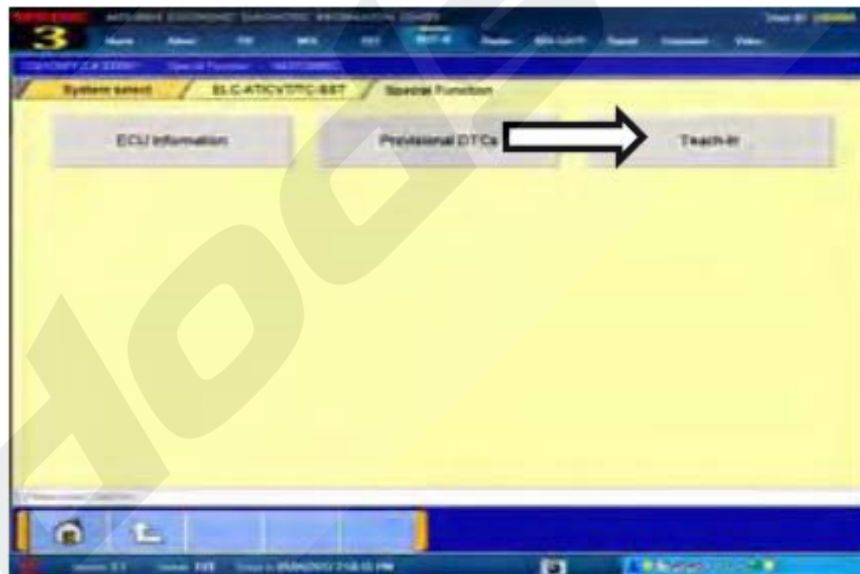==NOTE: The car can take up to 20 minutes to warm up.==

STEP 4

Once up to temperature, click **"Special Function"**.

STEP 5

Click the **"Teach–in"** button.

NOTE: If the mechatronic assembly was replaced, you must complete two Teach–in procedures:
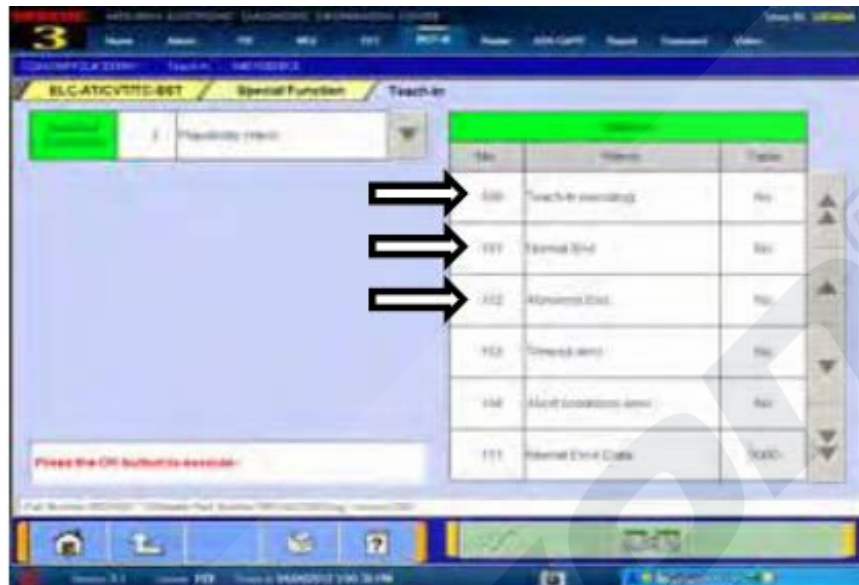
- Shift Fork Teach–in
- Clutch Teach–in

These procedures incorporate eight individual Selected Commands.

If only the clutch was replaced, the Shift Fork Teach-in is not necessary but still recommended.
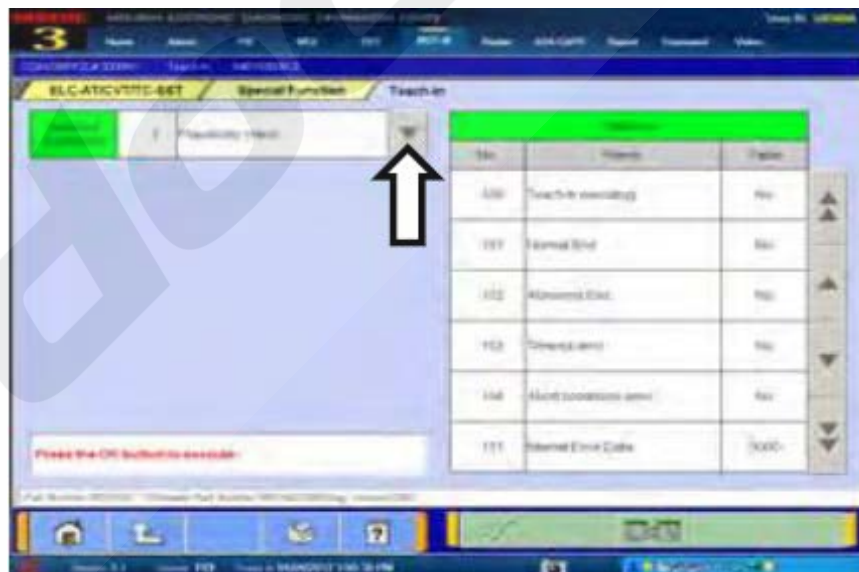
STEP 6

During each procedure performed, the right column will read **"100. Teach–In Executing (YES)"**. Once completed, it should read **"101. Normal End (YES)"**.

If it reads **"102. Abnormal End (YES)"**, then **repeat the step**.

STEP 7

To select the teach-in step, click the pull-down arrow to expand the **"Selected Command"** column.

SHIFT FORK TEACH-IN

STEP 1

Select **"1. Plausibility Check"** and click the checkmark button to continue.

STEP 2

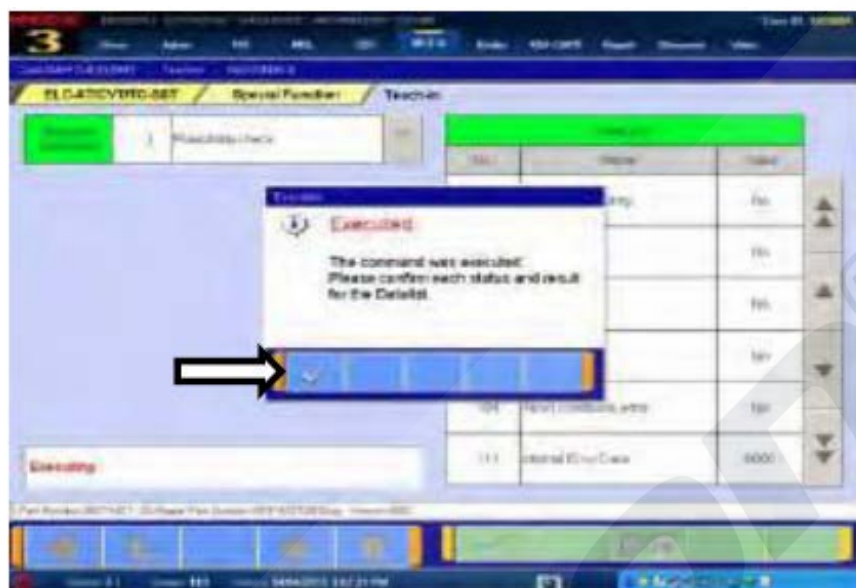Click the check mark in the **"1. Plausibility Check"** dialogue box to confirm.

NOTE: The engine speed briefly increases to about 1500rpm and returns to idle during the procedure.

STEP 3

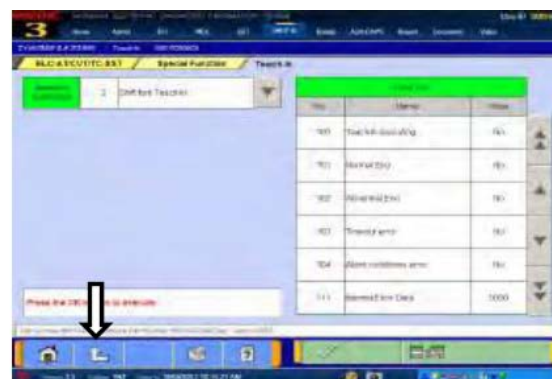When the procedure is complete, the **"Executed"** dialogue box appears, click the checkmark.

If **"101. Normal End (NO)"** is displayed, **repeat this step**.

STEP 4

Click the Selected Command down arrow and choose **"2. Shift Fork Teach–In"**. Click the check mark to continue. Click the check mark in the **"Shift Fork"** dialogue box to confirm the execution of this Teach–In segment. You will hear the transmission changing through the gears. When the procedure is complete, the engine returns to idle. Once **"101. Normal End (YES)"** is reached, the Shift Fork Teach-In is concluded. Press the Back button and turn the ignition to LOCK (OFF).

NOTE: If this step keeps reaching **"102. Abnormal End (YES)"**, you can diagnose shift fork positions by going to the **"Data List"** while the teach-in process is underway. Fork positions should change from their neutral position (0mm) to either +9mm or -9mm. Also, note that some early TCUs (not all) see fork four at 11mm instead of 9mm (or -11mm instead of -9mm). This does not affect the teach-in process, it is just something to keep in mind when viewing the shifting process.
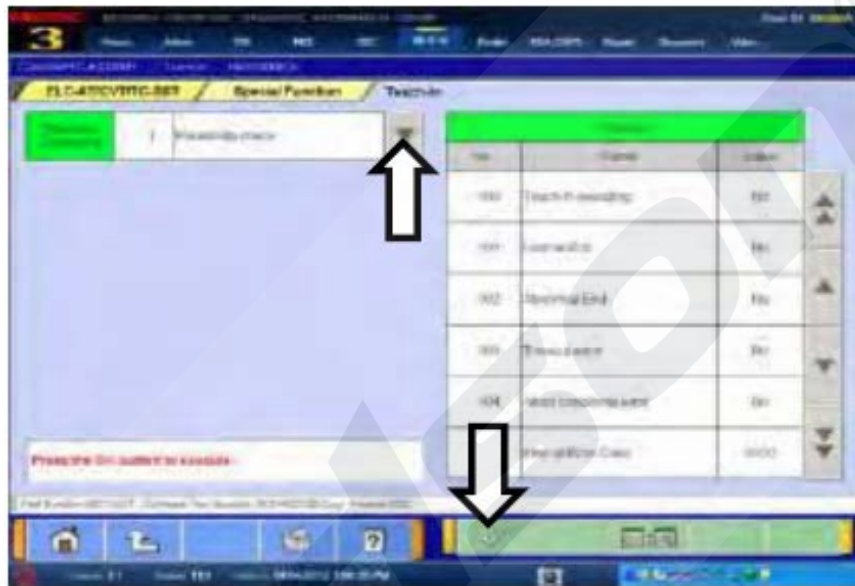
CLUTCH TEACH-IN

STEP 1

Start the engine again and enter the **"Teach-in"** menu again.

==The commands from this point forward must be completed in the exact order shown, do not deviate from this order.==

STEP 2

Perform **"1. Plausibility Check"** again.

Do not skip this step. Ensure that **"101. Normal End (YES)"** is reached before proceeding.
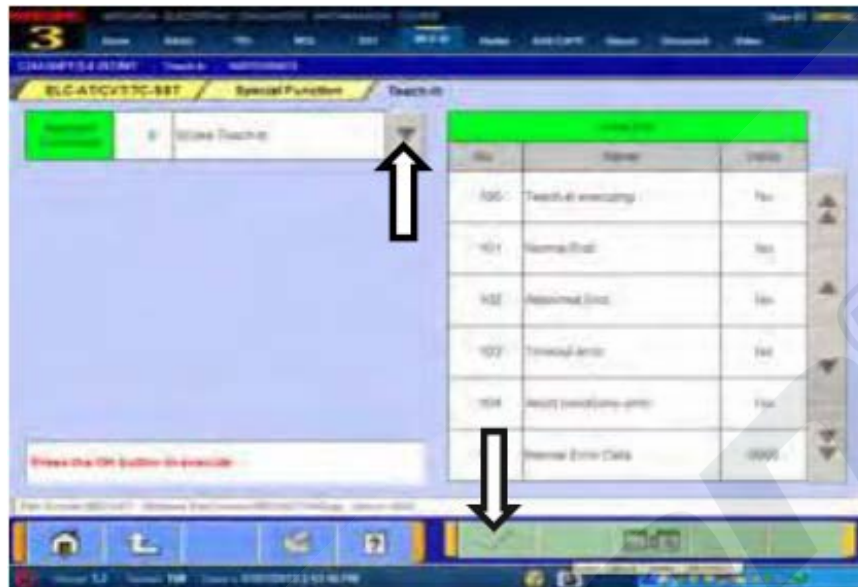

STEP 3

Perform the **"7. Clutch Ventilation"** command. You will hear the engine RPM increase slightly, and then return to normal. It may take a few attempts to reach **"101. Normal End (YES)"**.
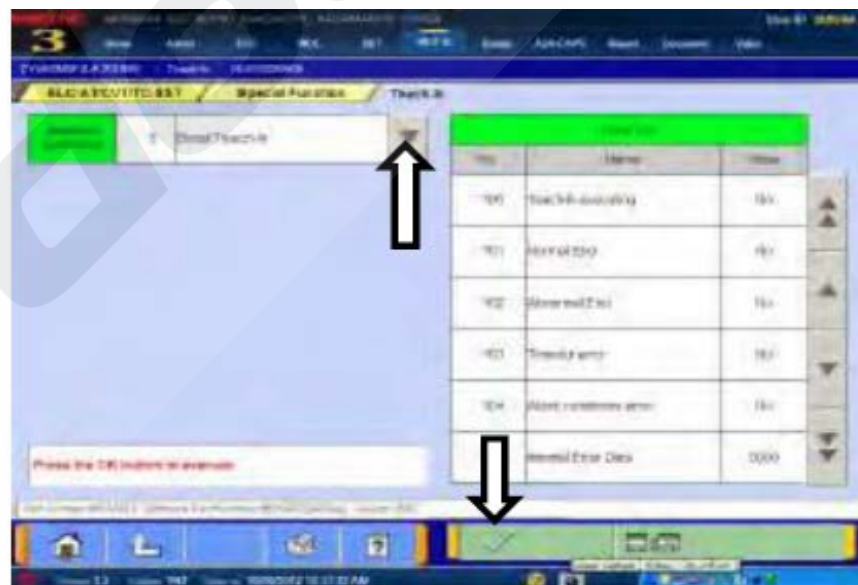
STEP 4

Perform the **"4. Stroke Teach-In"**. Ensure that **"101. Normal End (YES)"** is achieved before proceeding.

Before performing the next step, <mark>make sure both the **parking brake** and **service brake** are firmly applied</mark>. Even though the procedure only occurs with the brake pedal depressed, please use common sense and proper safety practices such as having no person standing in front of the vehicle during the procedure.
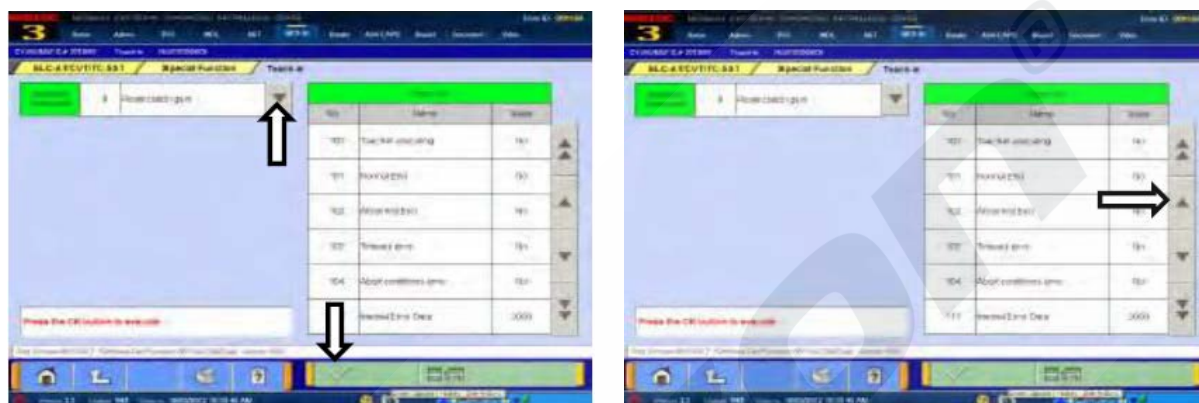
STEP 5

Perform the **"5. Boost Teach-In"** procedure. During this procedure, the engine RPM will increase and hold at 4000rpm. It will do this twice. It is normal for the process to take approximately 17 seconds to begin. After it has increased to 4000rpm for the second time and returned to idle, ensure that **"101. Normal End (YES)"** is achieved.

STEP 6

Perform the **"8. Reset Clutch Gain"** procedure. This is the only procedure that does not increase the engine RPM, it will remain at idle. This procedure also happens almost instantly, so it is hard to detect that it has started or finished even though the **"101. Normal End (YES)"** is displayed. Press the UP arrow on the right-hand side of the screen. This will display the last performed procedure. If this reads **"Reset Clutch Gain"** and the **"101. Normal End (YES)"** is achieved, then the procedure has been completed successfully. This concludes the **"Shift fork and Clutch Teach-In"** procedure.

NOTE: TCMs with firmware version 0001 will not have the **"Reset Clutch Gain"** option available, and therefore it is not required to complete the Shift fork and Clutch Teach-In procedure.

IMPORTANT NOTE

If the car was reprogrammed in order to perform the Teach-In procedure, it may need to be reprogrammed to its original software at this point, i.e for a 2008 Lancer Evolution X (CZ4A), you would have to program to 8631B001.cff in order to make the Teach-In function available, and then after the Teach-In is successful the TCM will have to be reprogrammed again back to 8631B413.cff. Failure to do so may result in a transmission warning light on the dash and/or a permanent fault code for **"Teach-in not performed"**.

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