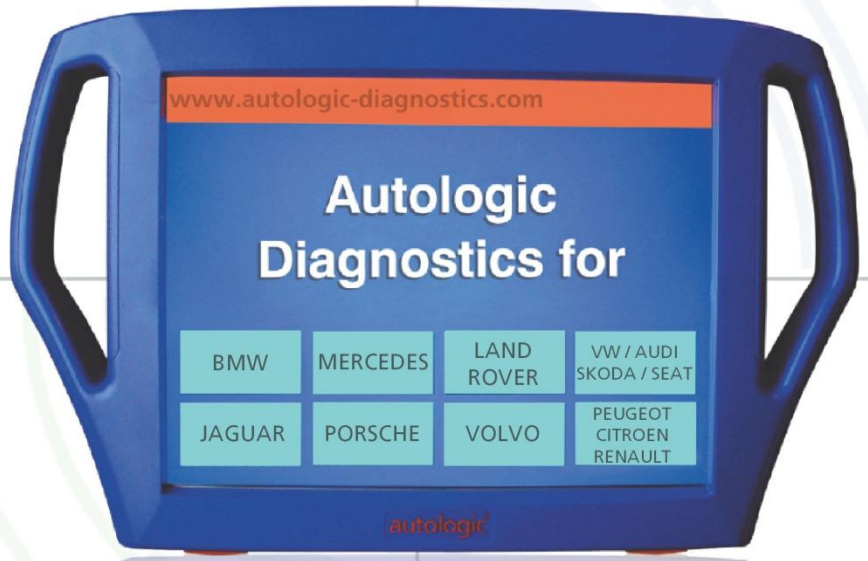
Electric plate / ECU replacement



Mercedes-Benz
7-G SCN coding and programming

Electric plate /ECU replacement

Electric plate / ECU replacement

“Important “

When the new electrics plate /control unit/valve body is fitted to the transmission you must carry out the full initial start up process straight away.

If the vehicle is started and driven without the initial start up process fully completed, the vehicle will start and drive in emergency mode only.

The control unit will be locked out, and it will <u>not</u> be possible to complete initial start up of the electric plate/valve body/ ECU.

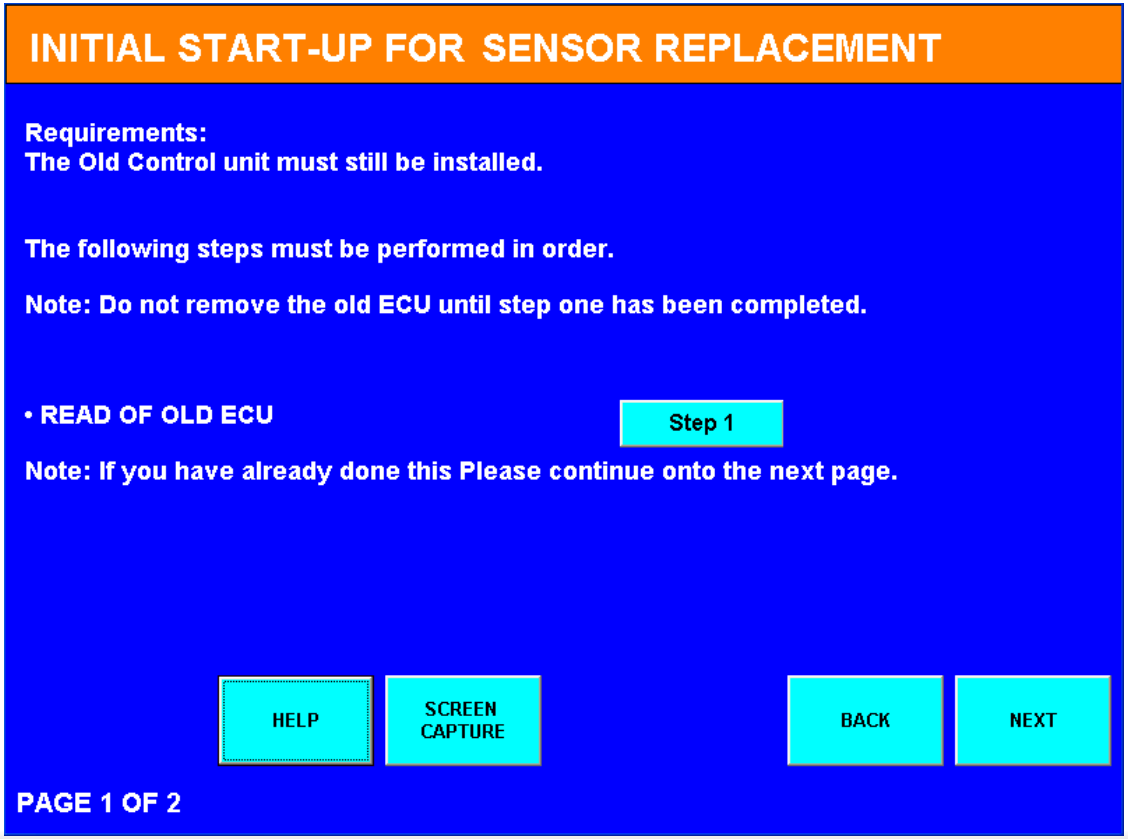
THIS WILL RENDER THE CONTROL UNIT UNSERVICABLE

<u>This will result in having to purchase another new control unit/valve body</u>

Electric plate / ECU replacement

“Important “ The old electrics plate /control unit

MUST still be FITTED TO VEHICLE before the step 1 read is taken.



Electric plate / ECU replacement

THE FOLLOWING PAGES ARE ONLY IF YOU ARE REPLACING THE CONTROL UNIT /ELECTRIC PLATE

WITH PART NUMBER 000 270 17 00

"important " The old electrics plate /control unit MUST still be FITTED TO VEHICLE before the step 1 read is taken.

This is because In the **step 1** read the working and resistance values of the solenoid values are read and stored in the autologic tool.

All the values that are retrieved from the old ECU in **step 1** are **live** data values, and that is why the old valve body still has to be **fitted** to the vehicle and the solenoid valves fitted **in place**, for the values to be read and transferred correctly.

Failure to do this will result in very harsh gear changes after the programming is complete (this will not remedy itself).

Electric plate / ECU replacement

We have found if you just connect and hang the old electric plate on the vehicle (after the new electric plate has already Been fitted to the gearbox), and carry out the step 1 read , **this will Result in a problem with gear changes (every time).**

In this situation If the process is continued the gear change will be jerky and harsh and will never adapt itself correctly.

It will require the old control unit refitted back into the gearbox and the procedure carried out again correctly (from and Including **step 1**), for a second time, before a comfortable smooth gear change can be achieved.

Electric plate / ECU replacement

Important

There are **two** different repair options for the 7-g gearbox ,it is important you select the correct repair procedure. **(complete valve body or electric plate/control unit)**

1/ Only if the valve body has one or more of the following speed sensor fault codes stored or present,(**0717,0718,2767,2768,0722,0723**,)

Or any of the following fault codes (which are also now also included) . **0705, 0604, 0605, 0641, 06A3, 0651, 1629, 1634, 1636, 0633, 062F, 0613, 0607, 0711, 1693, 1710, 1711, 1712, 0300, 060A, 1610, 0714, 0705, 0604, 0641, 06A3 -** can you fit an **electric plate/control unit replacement part .**

The part number of this repair kit it **000-270-17-00** (and is only valid on **VGS-2** and **VGS-3** transmissions) .

If other codes are present that are not in the previous list, you **CANNOT** fit the repair kit.

The repair kit is also **not** compatible with **AMG** vehicles.

2/ If you have any other codes as well as the codes listed above the **complete valve body** must be replaced.

If you cannot communicate with the old valve body you **cannot** fit the electric plate repair kit, as the step 1 read cannot be performed.

Electric plate / ECU replacement

Common code for Automatic transmission in limp-home mode,

fault codes P0717, P0718, P0722, P0723, P2767, P2768

Complaint: Automatic transmission 722.9 switches to limp-home while driving (gearshifts no longer possible) and/or one or more of the following fault codes are stored or current: 0717, 0718, 0722, 0723, 2767, 2768

Cause: Rpm sensor fault : Component Y3/8n2 (Internal speed sensor (VGS2)) is defective/not available /or open circuit . Or The signal from component Y3/8n3 (Output speed sensor (VGS)) defective/not available /or open circuit . ([VGS2).

The repair kit is also **not** compatible with **AMG** vehicles.

NOTE : it is now possible to just replace the electric plate /control unit separately on the 7-G 722.9 transmission , only on VGS-2 and VGS-3 boxes.

The transmission control unit, which is bolted onto the electro hydraulic controller unit (EHS), may only be replaced using the EHS repair kit (A000 270 17 00).

Parts Rep. kit A 000 270 17 00 contains, among other things, VGS3 electrical kit, B3 oil guide pipe, oil filter, small parts, screws/bolts

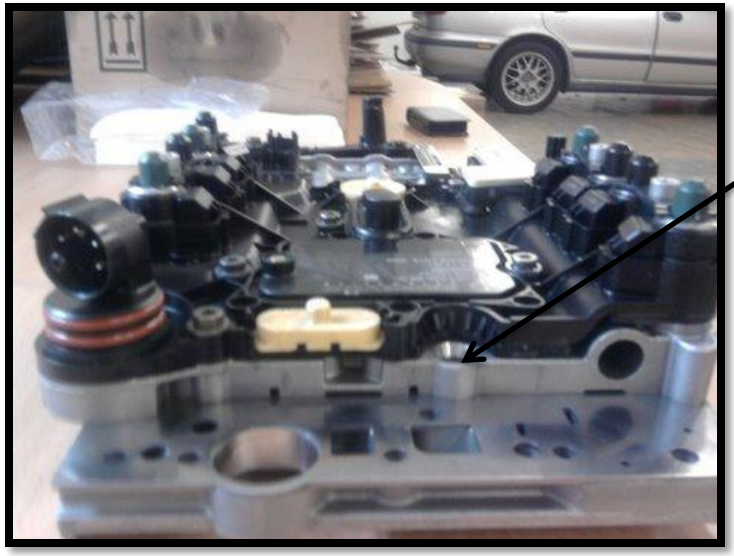
NOTE: On vehicles with VGS-1 the whole 7-g valve body needs to be replaced as before. VGS 1 part numbers A 220 270 12 06 or A 220 270 14 06 or A220 270 10 06 or A220 270 11 06 (any of these numbers are a VGS 1 EHS controller)

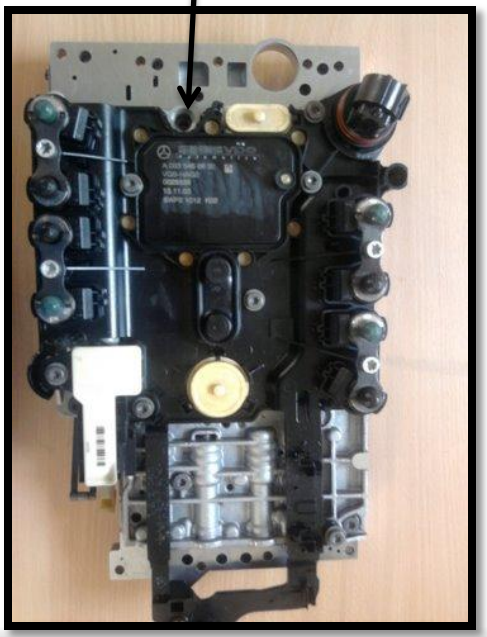
Electric plate / ECU replacement

Before starting the coding it is worth remembering a few points.

1/ When removing and refitting a valve body to a 7-G transmission care must be taken to remember to remove the oil feed pipe from the old valve body, and swap it over with the new valve body, as failure to do this will result in loss of drive.

Oil feed pipe location

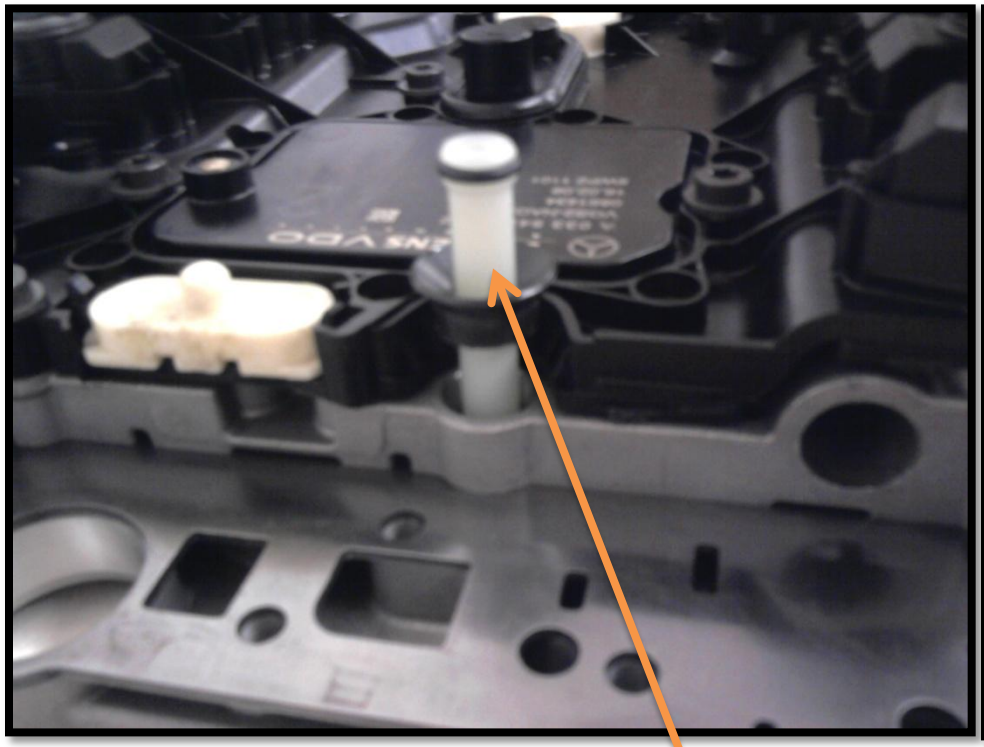




Oil filler pipe needs swapping over when fitting new valve body.

Electric plate / ECU replacement

722.9 transmissions continued:



When replacing the valve body on the 722.9 gearbox remember to remove the white oil feed pipe from the shown location, and fit as next page suggests.

Failure to do this will result in no drive when S mode is selected

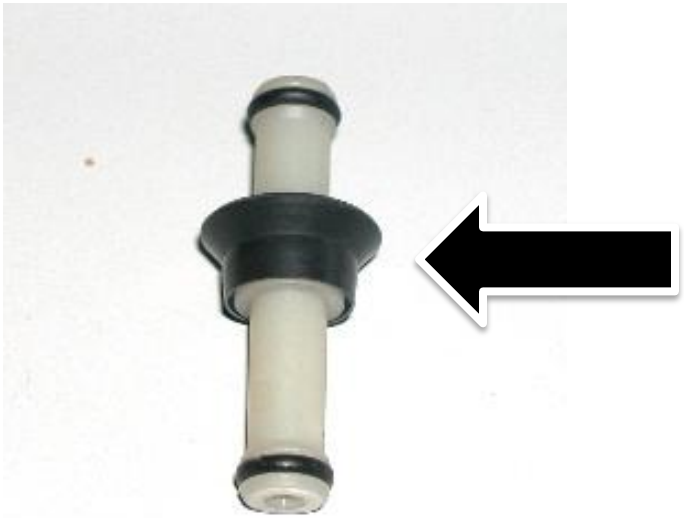
and in C mode drive ok up to 6th gear (then slipping).

On 164 and 251 chassis vehicles will result in no drive at all .

Electric plate / ECU replacement

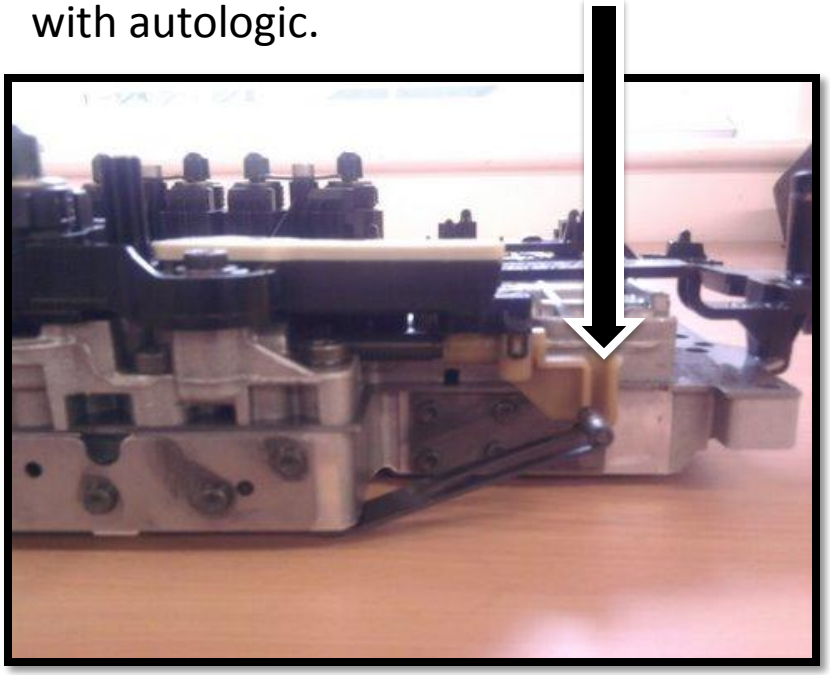
It is simpler to install the pipe Into the gearbox and assemble the valve body on to it.

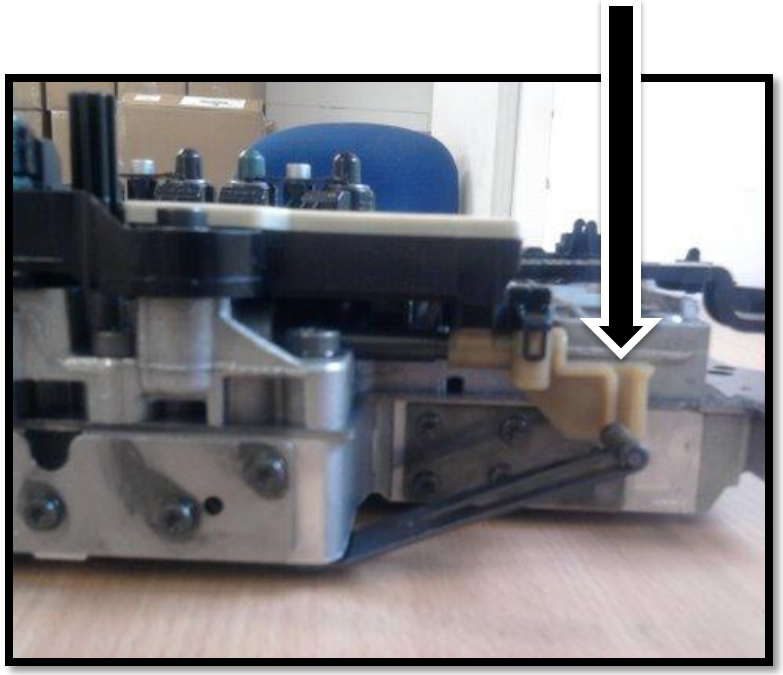
Make sure the oil feed hose is correctly and firmly installed From old valve body assembly



Electric plate / ECU replacement

2/ When re-fitting 7g valve body it is important that the selector linkage is correctly located in the sliding gate, as it will be impossible to complete the start up procedure with autologic.





3/ When carrying out SCN coding and drive authorisation, it is essential that you have cleared all stored faults in all other control units, (especially engine ECU) and also have a good stable vehicle voltage : (battery charger correctly installed on the vehicle) .
Also make sure the autologic is powered by its mains adapter.
Failure to do this may result in SD flash programming failing and the control module may sustain permanent damage .

Electric plate / ECU replacement

It is also worth remembering that if you are re-flashing the original 7-g transmission
You will delete all previous saved gear change adaption data.
And the smoothness of gear changing may indeed be worse than before .

note: problems such as harsh gear changing are hardly ever cured by re-flashing the 7-g valve body , however if a re-flash or control unit programming is carried out the learning process for range selector must also be carried out ,failure to do this will result in harsh gear engagement or a possible non start situation. Also a long road test to carry out gear shift adaptations will also be required.
we have become aware that sometimes when fitting a 7-g transmission to a **ML-164** or **R CLASS -251** chassis range vehicle , If 7-g programming keeps failing it may be necessary to disconnect the ESP control unit electrically , and try again.
The same applies to 211-219 chassis with SBC or ABR or xenon headlights, disconnect and try again. This can be due to can bus excess traffic .
Re connect and clear codes when coding is complete .

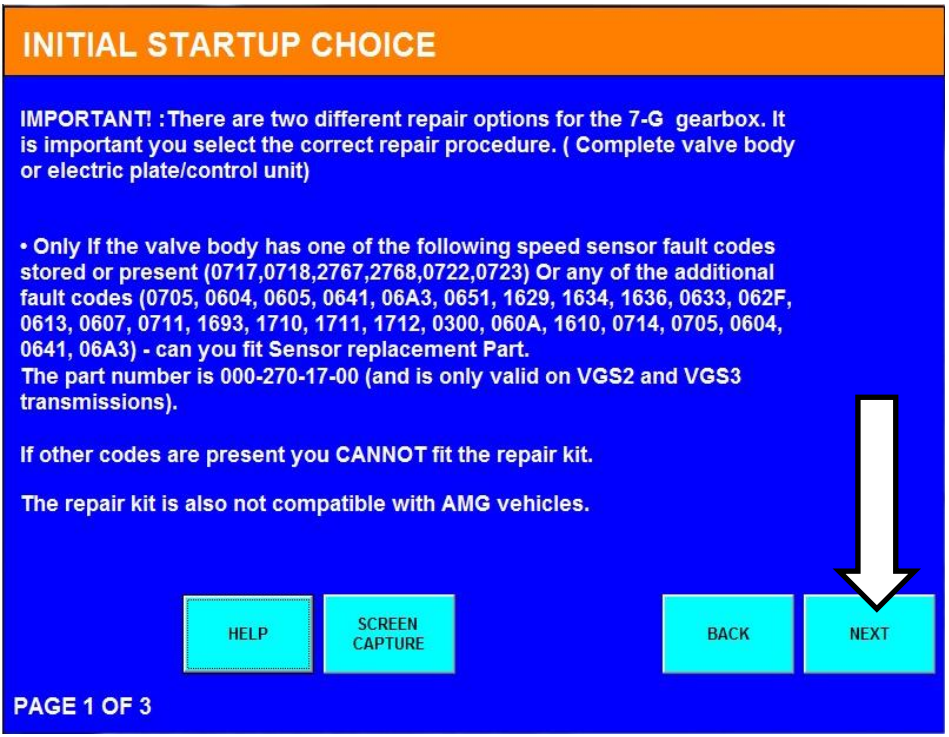
caution

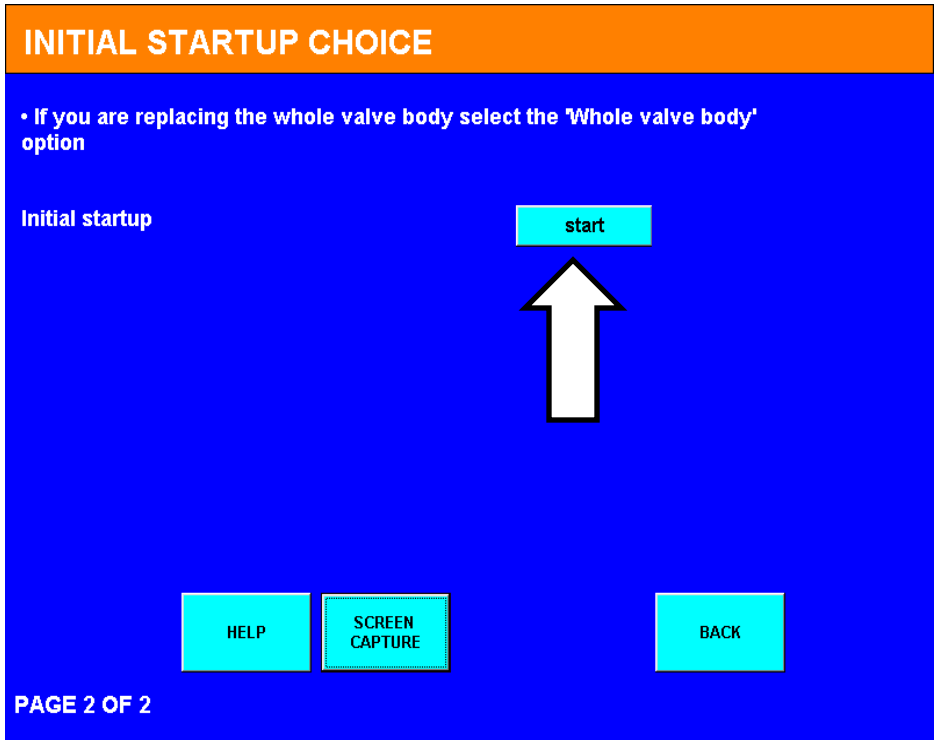
We would recommend that a short/quick test is carried out for all gearbox complaints and the Mercedes technical help desk is contacted before any 7-g transmission work is carried out .
Note- an engine control unit update may also be required in some instances.
Always ensure that there are **no** stored fault codes in engine control unit before carrying out SCN or control unit programming , as this could cause a programming failure.

Electric plate / ECU replacement

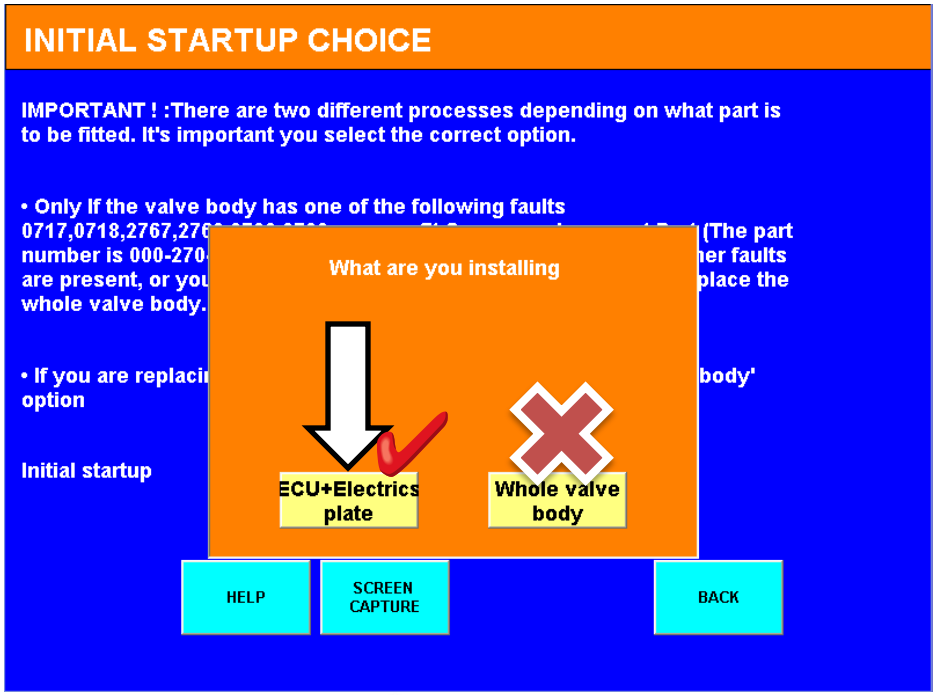
THE FOLLOWING PAGES ONLY ARE ONLY IF YOU ARE REPLACING THE CONTROL UNIT /ELECTRIC PLATE WITH PART NUMBER 000 270 17 00

OLD UNIT MUST STILL BE FITTED TO VEHICLE





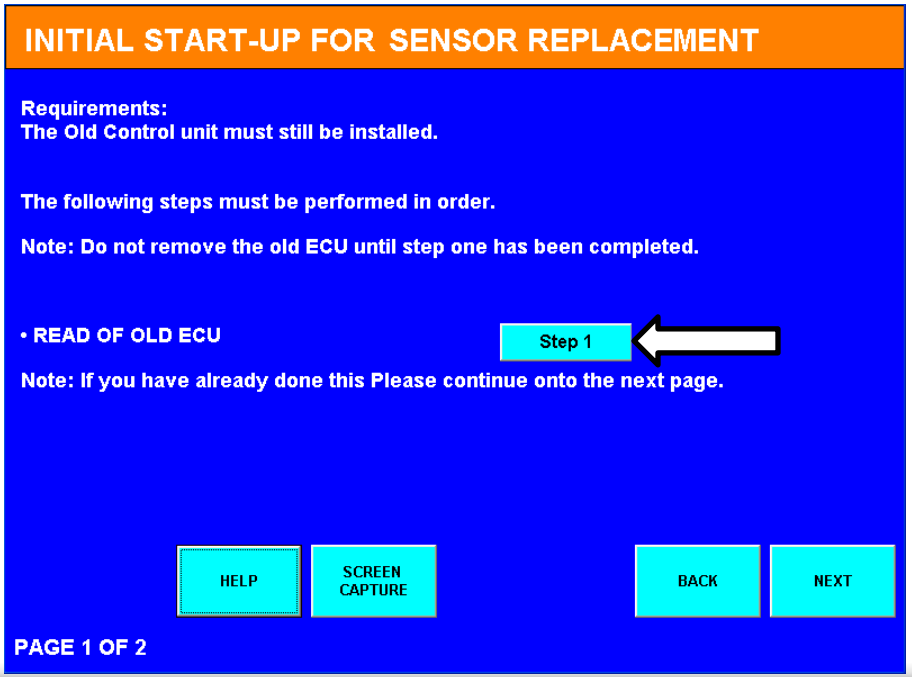
Electric plate / ECU replacement



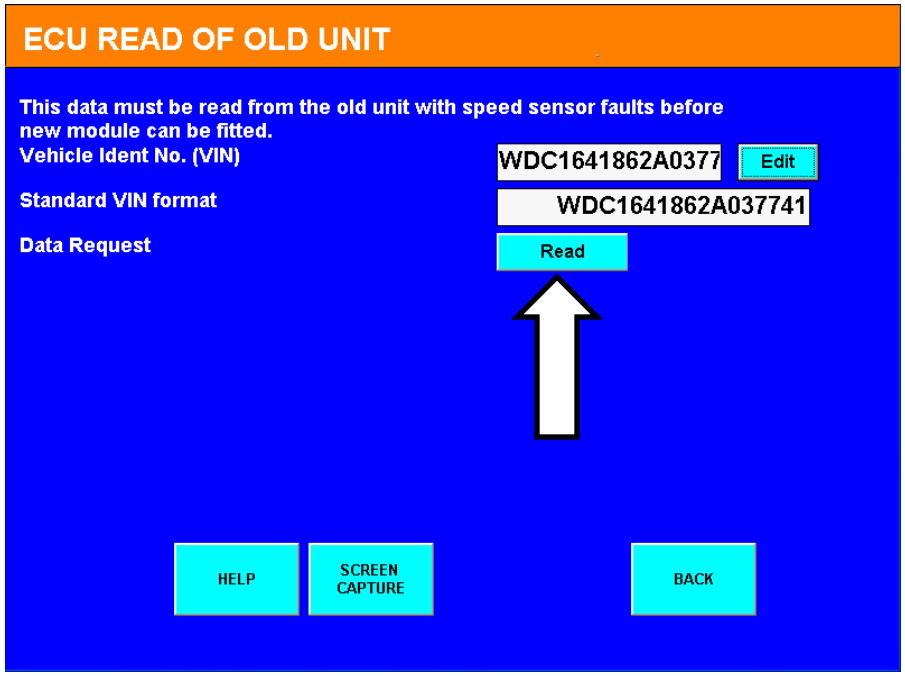
Choose between installing a complete valve body or just the **ECU and electrics plate**.

The following pages only are only if you are replacing the control unit /electric plate with part number
000 270 17 00
old electrics plate /control unit MUST still be fitted to vehicle

Step 1 read old ECU data



Electric plate / ECU replacement

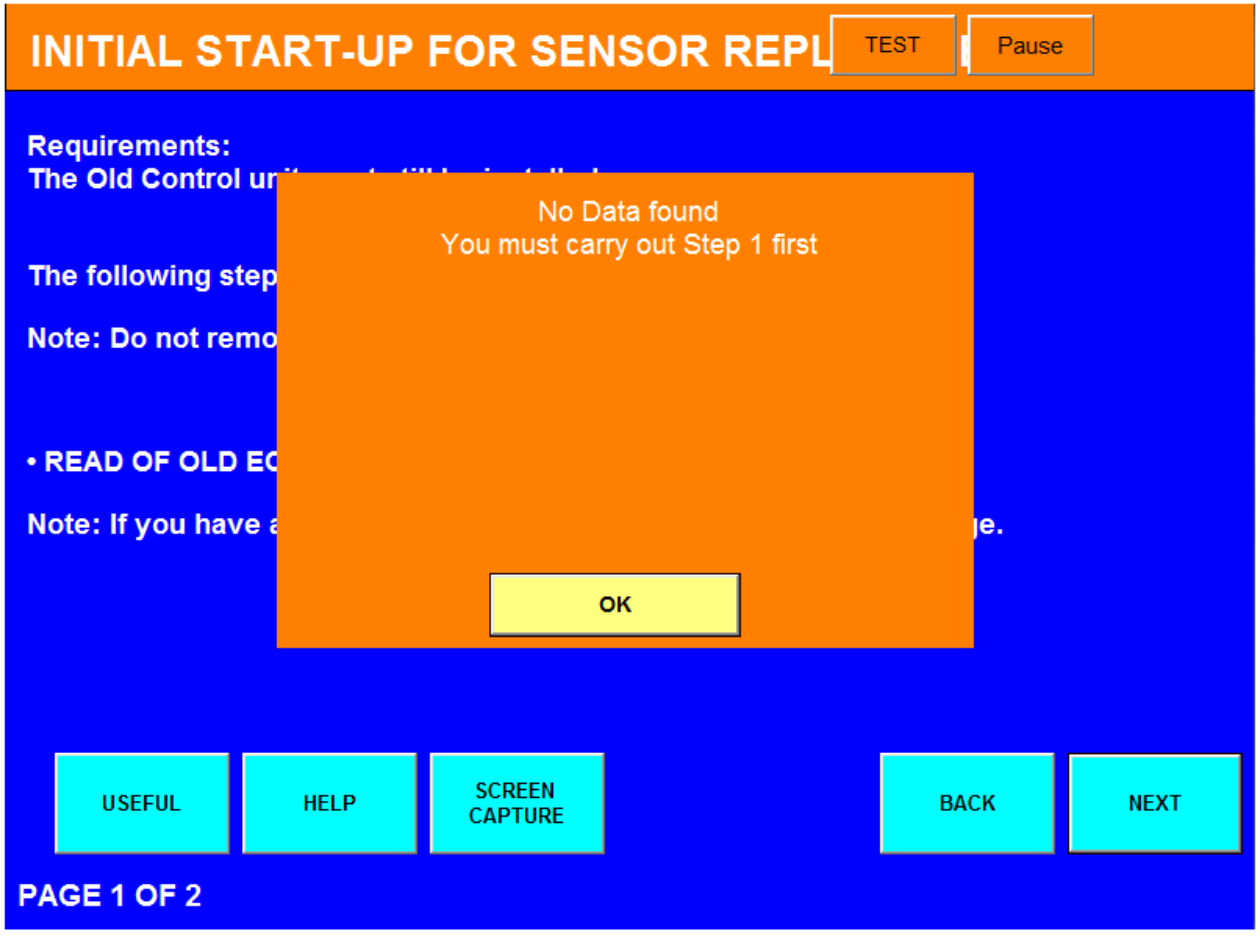


<u>Step 1</u> read old ECU data

The old electrics plate /control unit MUST still be fitted to vehicle with solenoid valves in place

Electric plate / ECU replacement

after pressing **NEXT** if **Step 1 cannot** be performed successfully, the following message will be displayed and the process will be terminated. Until a recognized step 1 data can be read from the old ECU.



Electric plate / ECU replacement

Reasons why step 1 read is important

A brand new **complete EHS valve body** may look like it arrives blank and just needs flashing and SCN coding and then all is ok. **this is not the case** .
It does in fact have some values already coded from factory: IE :the resistance and working values from the solenoid valves , and as this is done at factory it is already pre set on the new (seemingly) blank **EHS(complete valve body).**

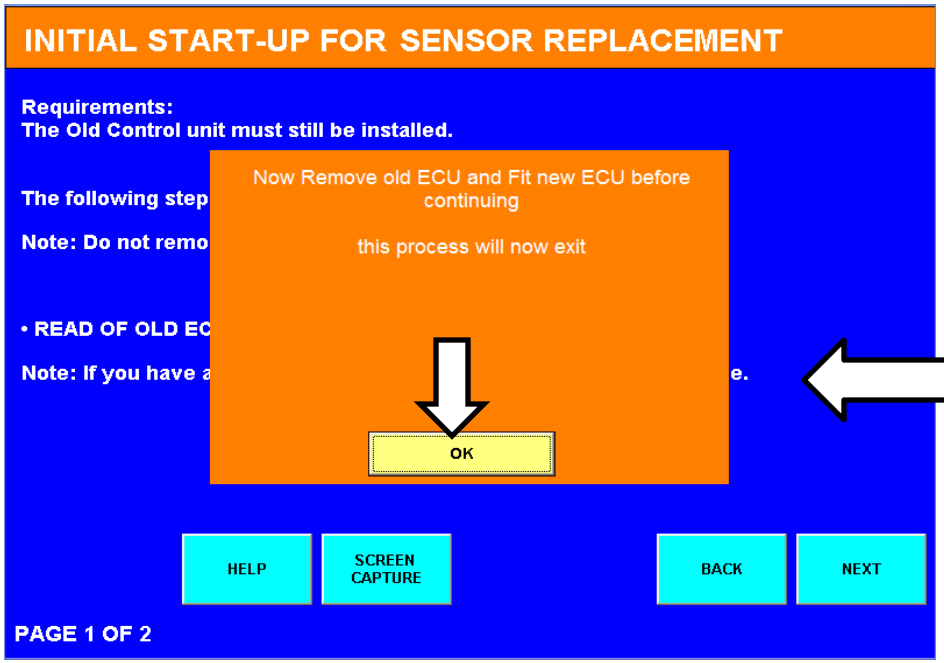
so if you buy an electric plate part number (000 270 17 00) this obviously could **not** be pre coded at the factory, as the working values of the solenoid valves for your vehicle are not known ,

So for **step 1** read the old ECU/electrics plate still needs to be **fitted** to the vehicle, then with autologic establish communication with transmission/initial start up / and select ECU and electrics plate repair.

In **step 1** the old working values of the solenoid values are read and stored in autologic then remove valve body and fit new electrics plate and re write the EHS number to latest number available and then carry out rest of process.

The values that are retrieved from the old ECU in **step 1** read are **live** data values, and that is why the old valve body still has to be **fitted** to the vehicle for the values to be transferred correctly, if you just hang old unit on vehicle this will be a problem, the gear change will be not be smooth and will never adapt correctly .

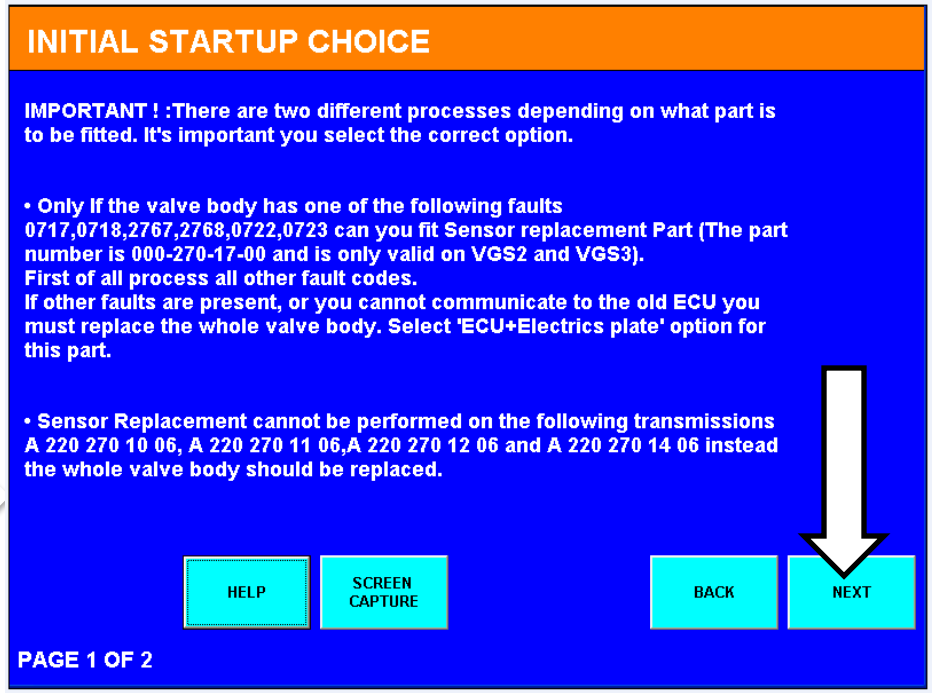
Electric plate / ECU replacement



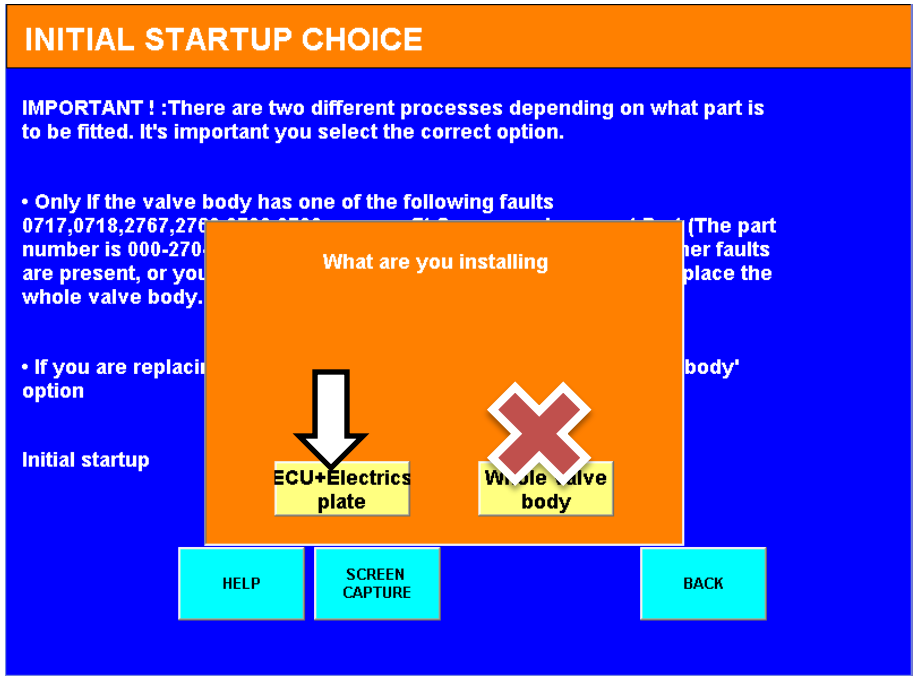
Step 1 read old ECU data

After pressing ok the autologic will close, and the valve body must be removed and the control unit /electric plate must be replaced and re-installed in the vehicle and the autologic reconnected.

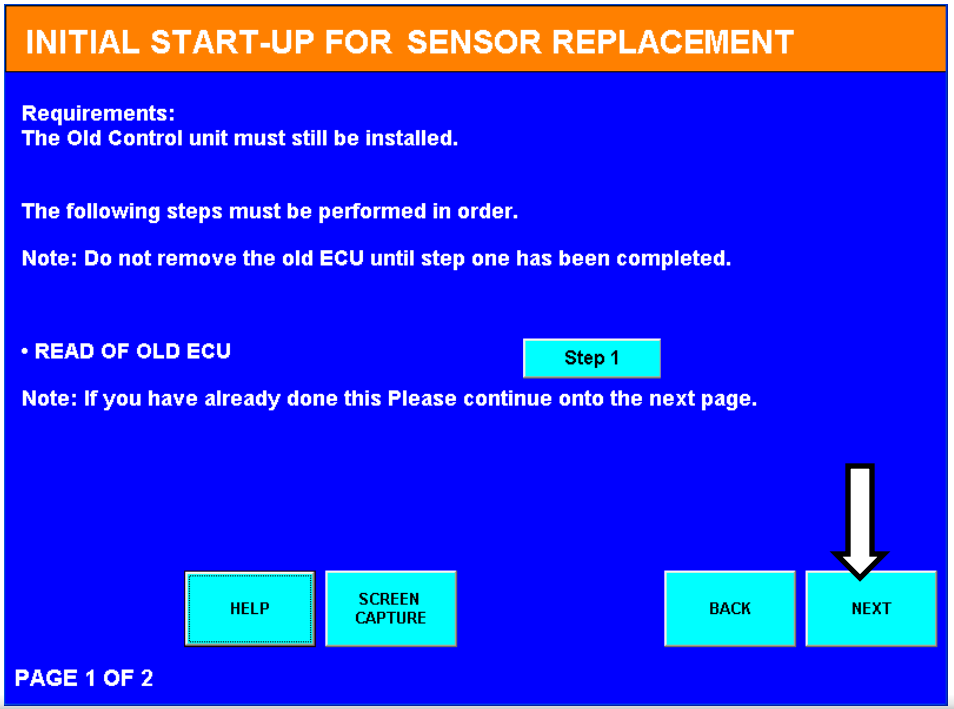
Connect autologic and Then follow the initial start up menu as before.



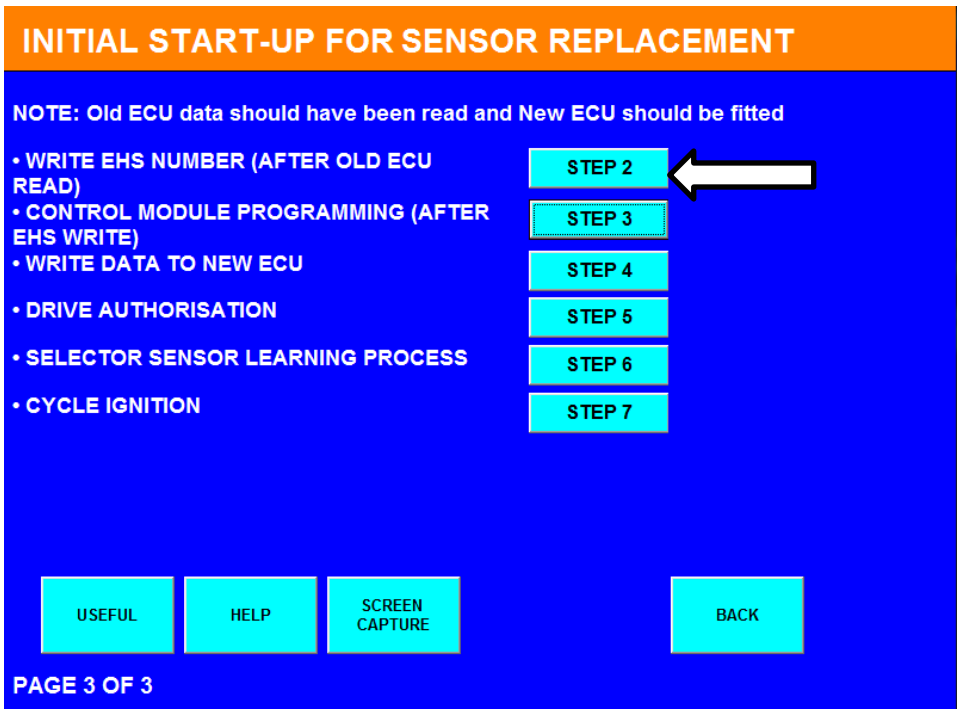
Electric plate / ECU replacement



Reconnect the autologic after the new electric plate and old valve body have been fitted back into the vehicle.
And go back into initial start up



Electric plate / ECU replacement



Look at the EHS number original part
In this case it is (220 270 13 06) (MAKE A NOTE)

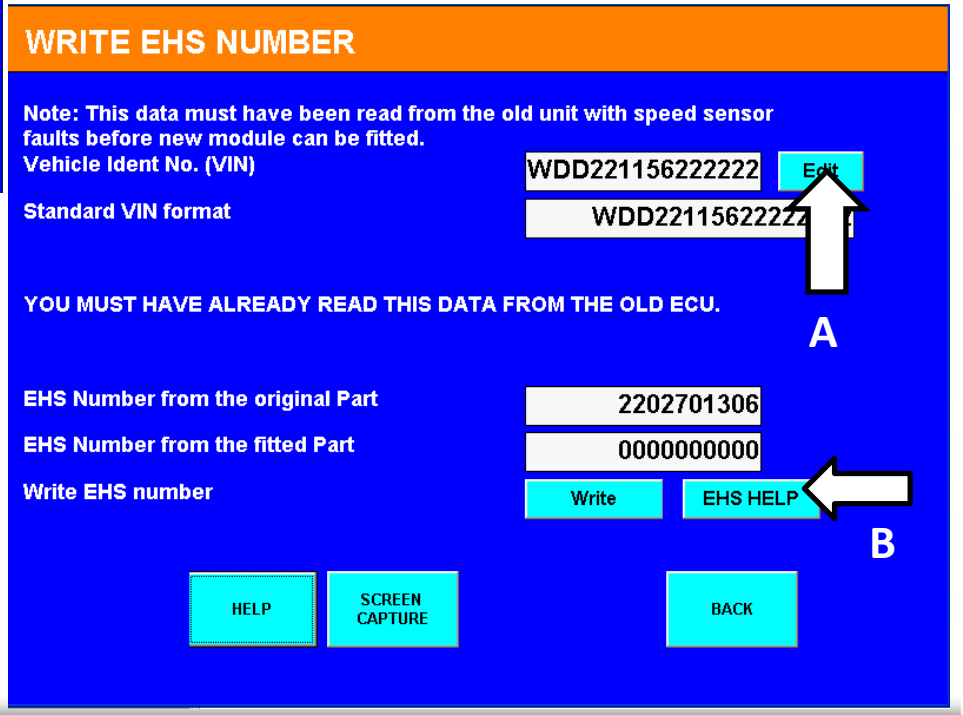
At this point you need to press B/ EHS help and a cross reference chart is made available for viewing.
Next page :

New EHS number should be 000 at this stage,
Or it may display just blank

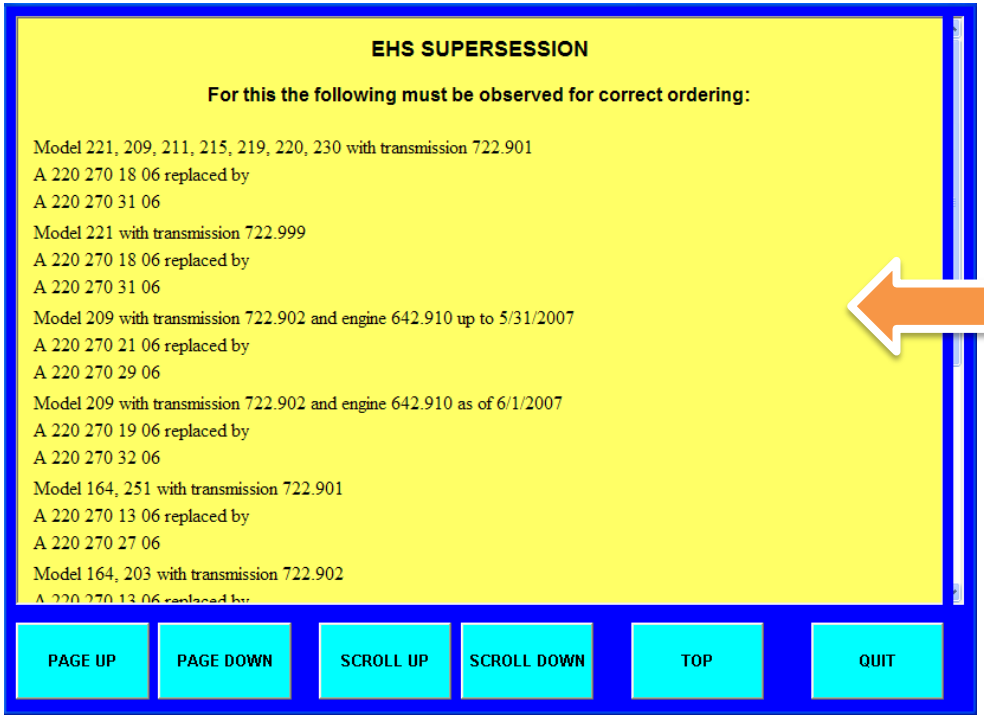
Step 2 write EHS number

Step 1 must have already been performed,
Or process will be **ended** at this point.

A/ Check adjust the chassis number verification, enter the correct VIN for the vehicle.



Electric plate / ECU replacement

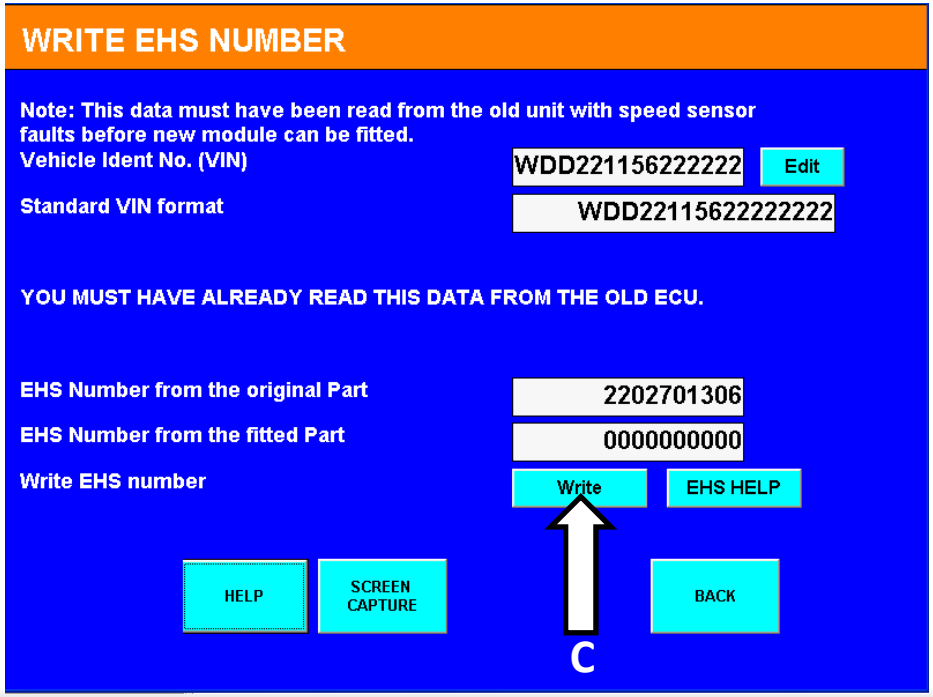


Step 2 continued:

Look up the latest EHS number from the list.

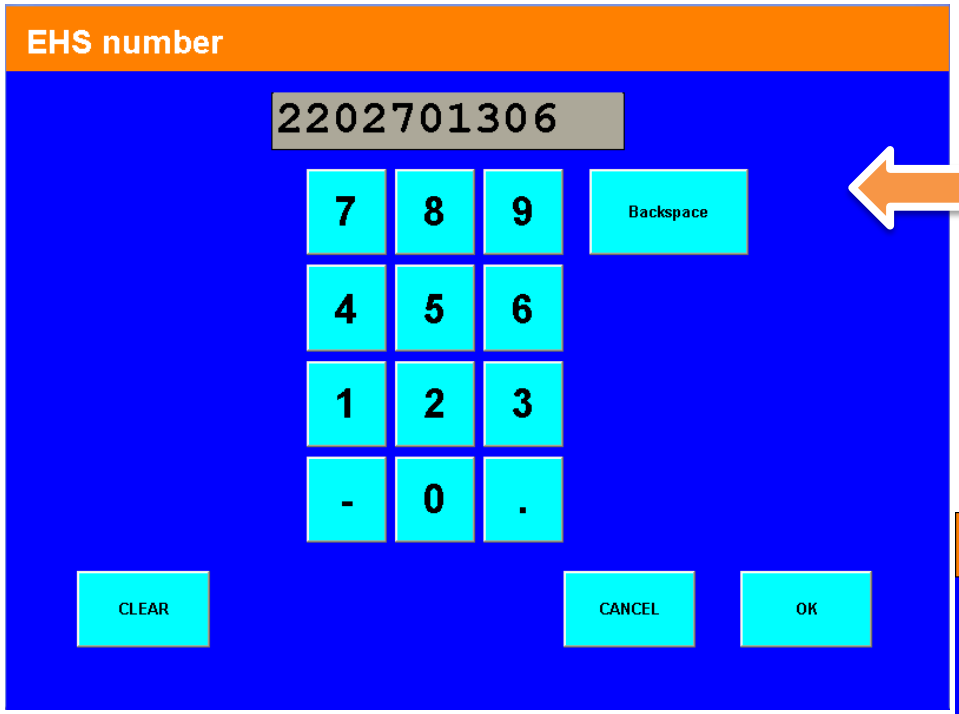
Then press quit.

If old EHS number not on the list, contact your local mercedes dealer or autologic for the latest EHS number.



then go to **C/ write** the latest EHS number from the list above.

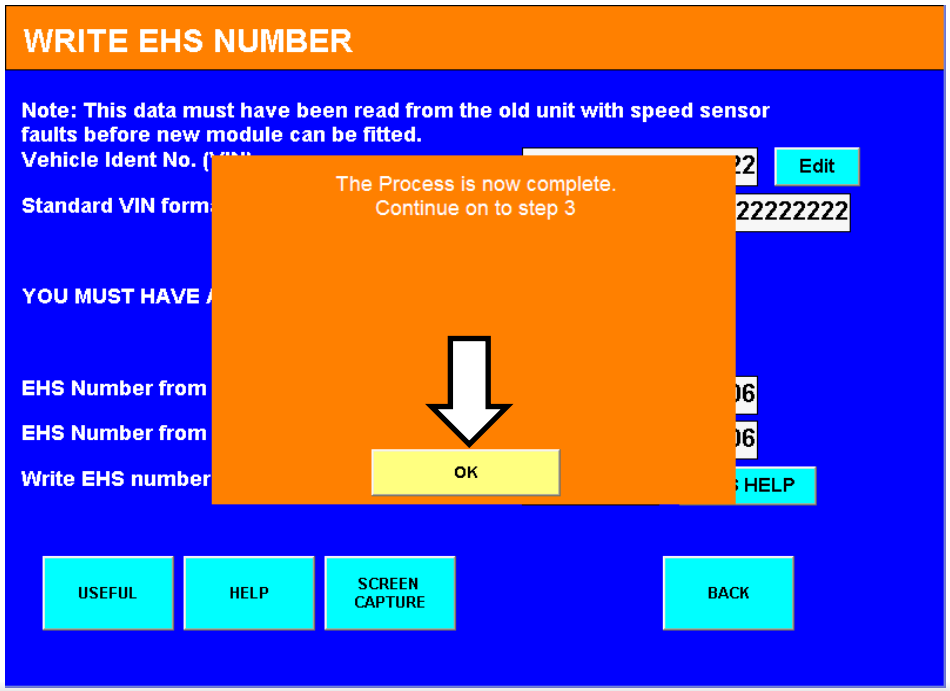
Electric plate / ECU replacement



Step 2 CONTINUED

After you have pressed **write** the following screen is displayed.

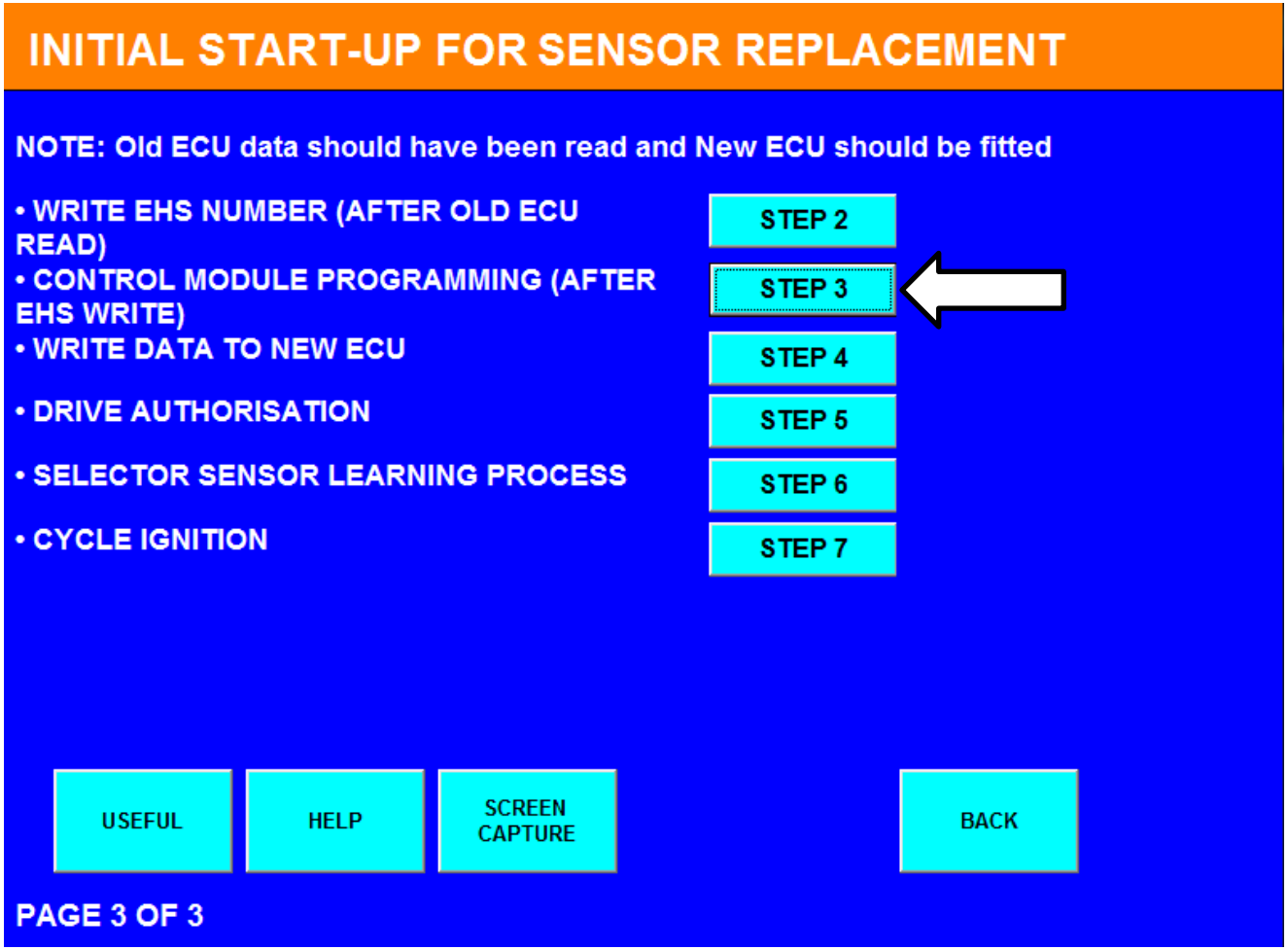
This screen will **always** show the old EHS number, and you will have to **overwrite** this number with the new EHS number,
(from the updated list provided on previous page).



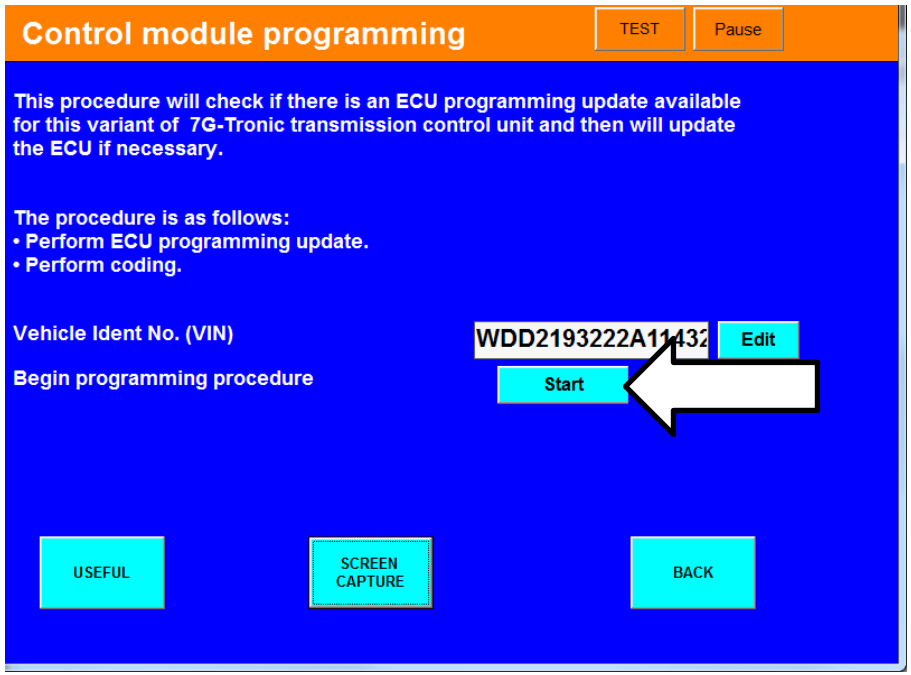
Once process is complete press ok

Electric plate / ECU replacement

Step 3
ECU programming



Electric plate / ECU replacement



Step 3

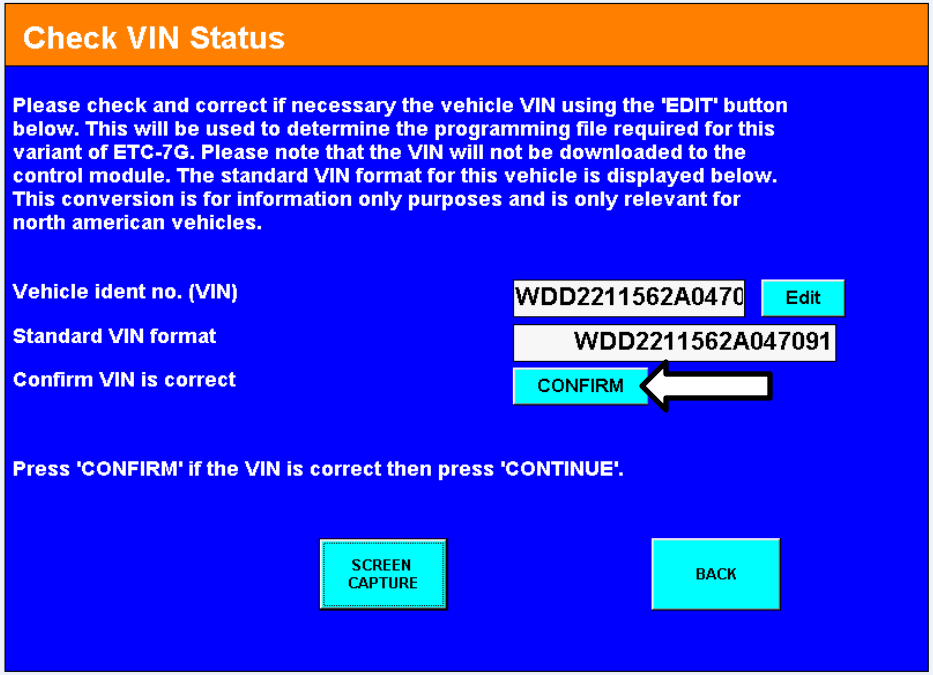
ECU programming

Begin procedure press start button.

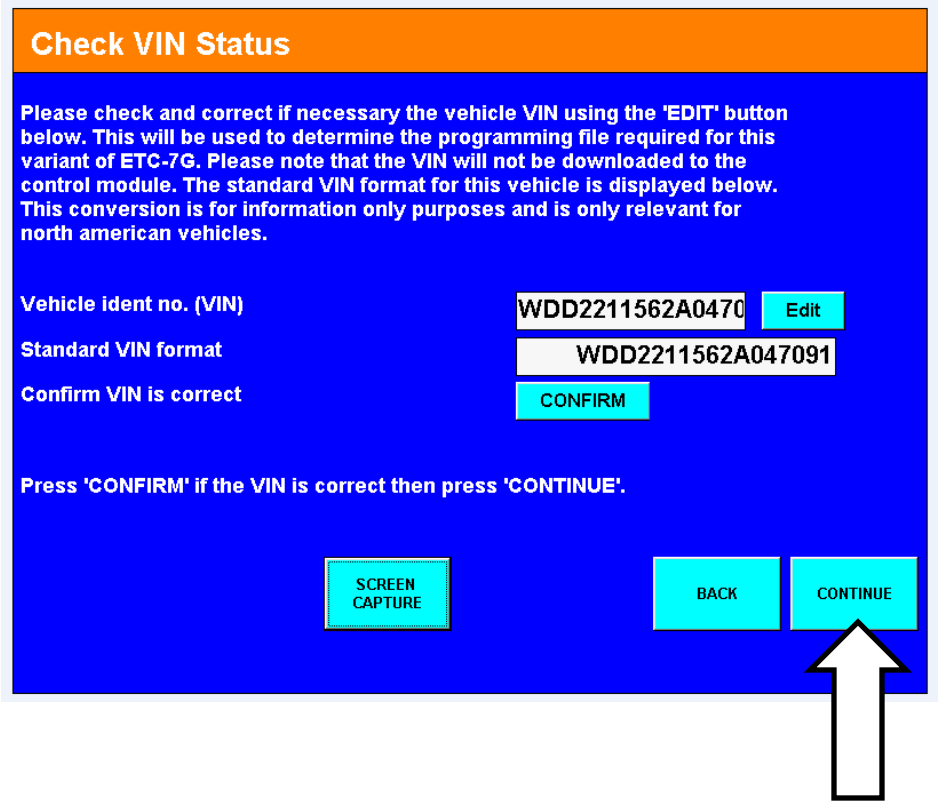
Flashing is a way to update control unit software.

Flashing is only to be performed when needed, otherwise issues may arise.

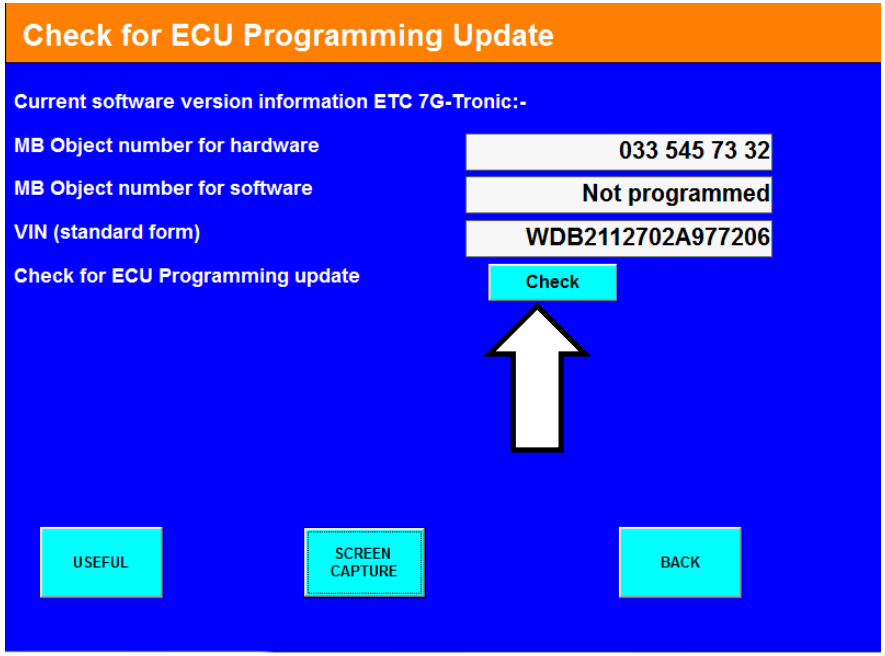
Edit correct chassis number and confirm .



Electric plate / ECU replacement

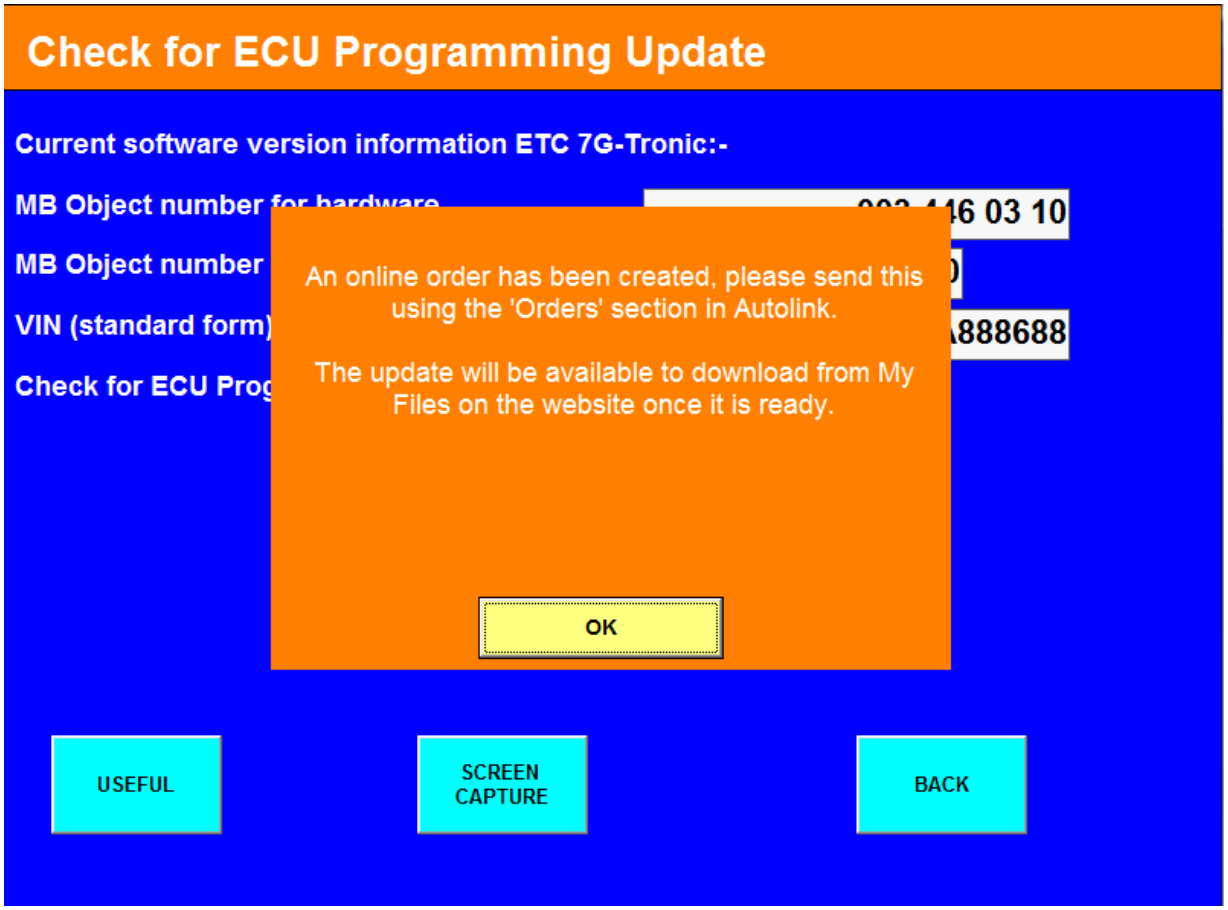


Step 3
ECU programming



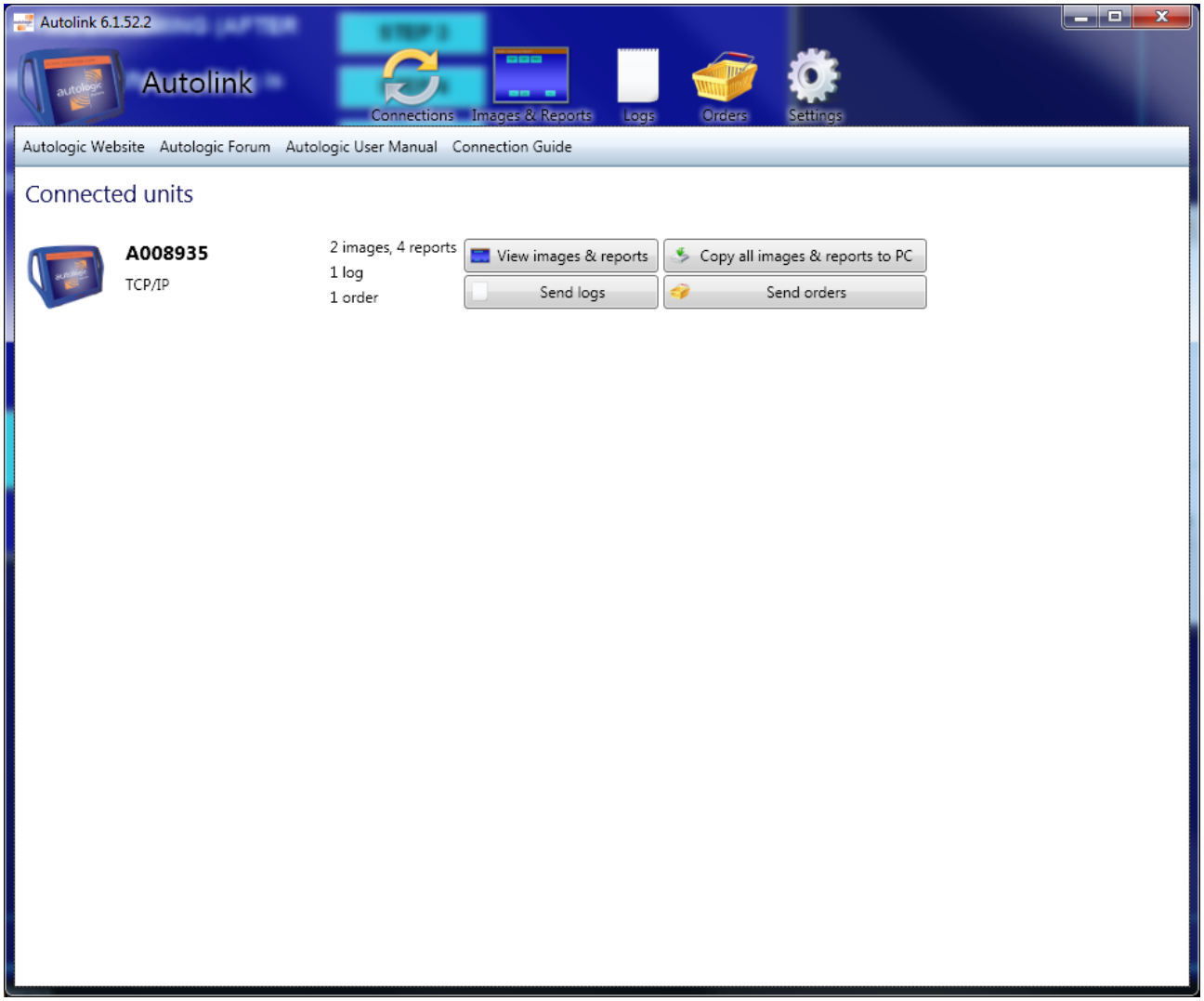
Electric plate / ECU replacement

Step 3 ECU programming



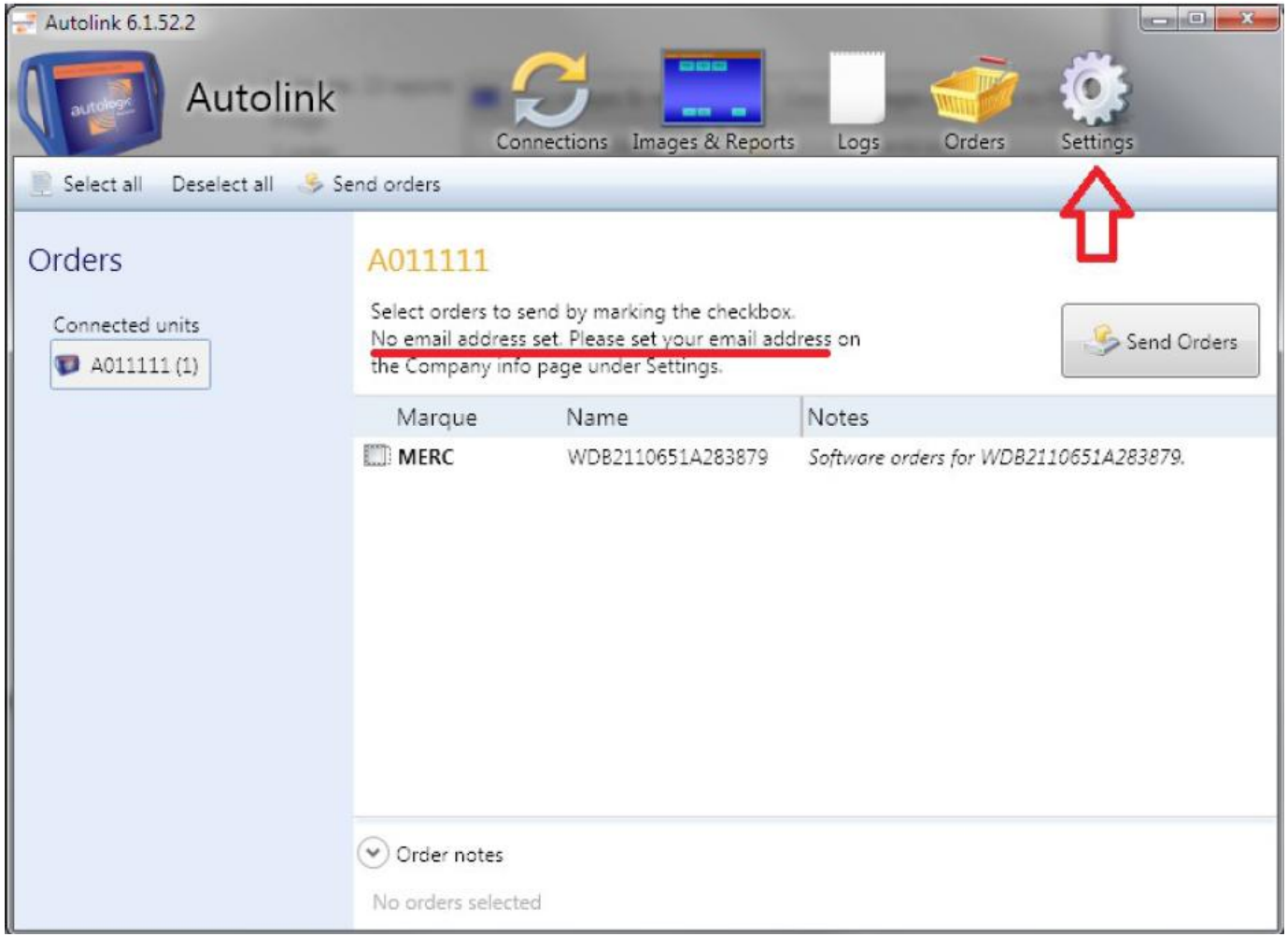
Electric plate / ECU replacement

Send Online Order using Autolink



Electric plate / ECU replacement

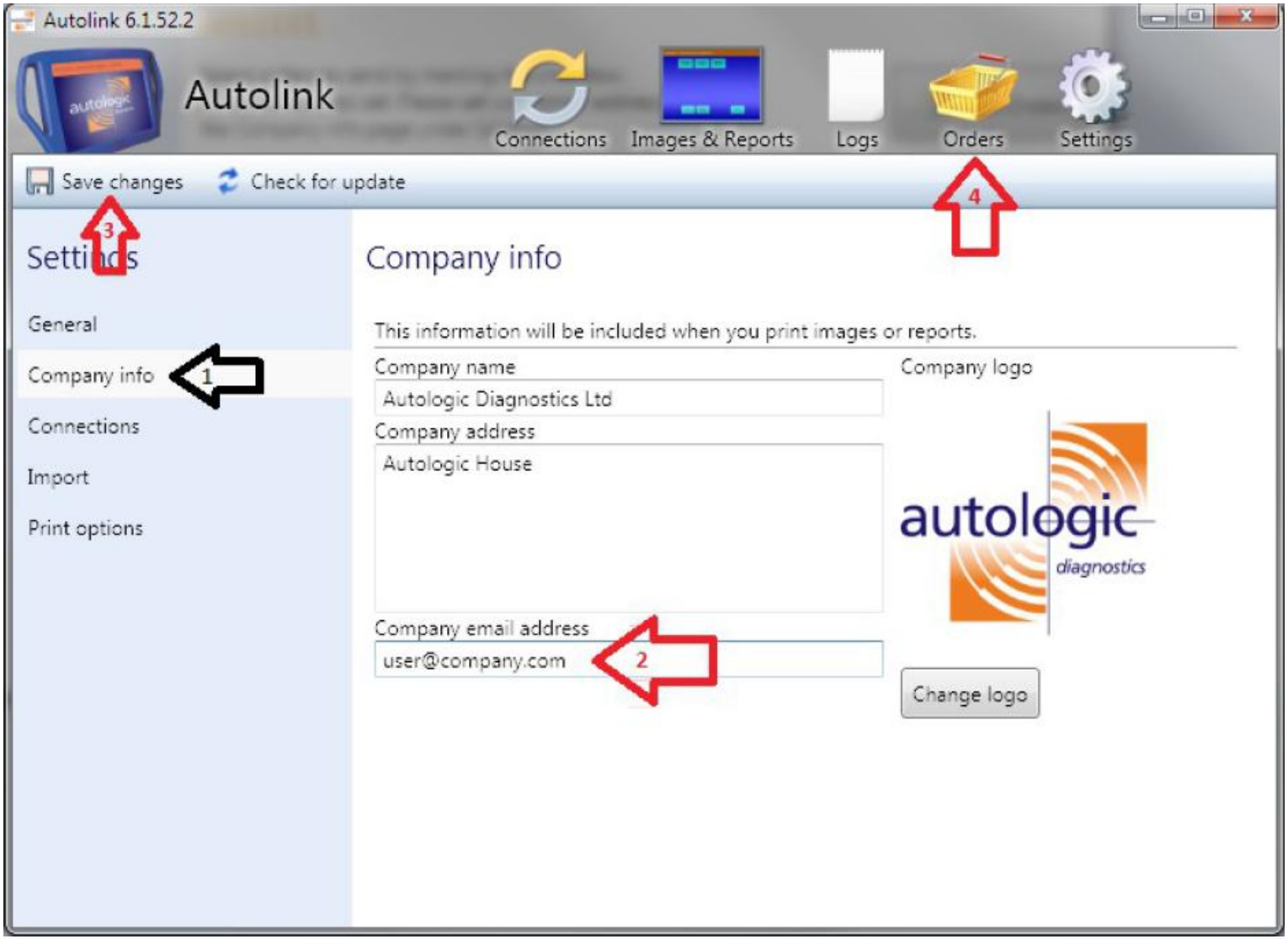
Send Online Order using Autolink



Please make sure your e-mail address is set up under Settings->Company Info

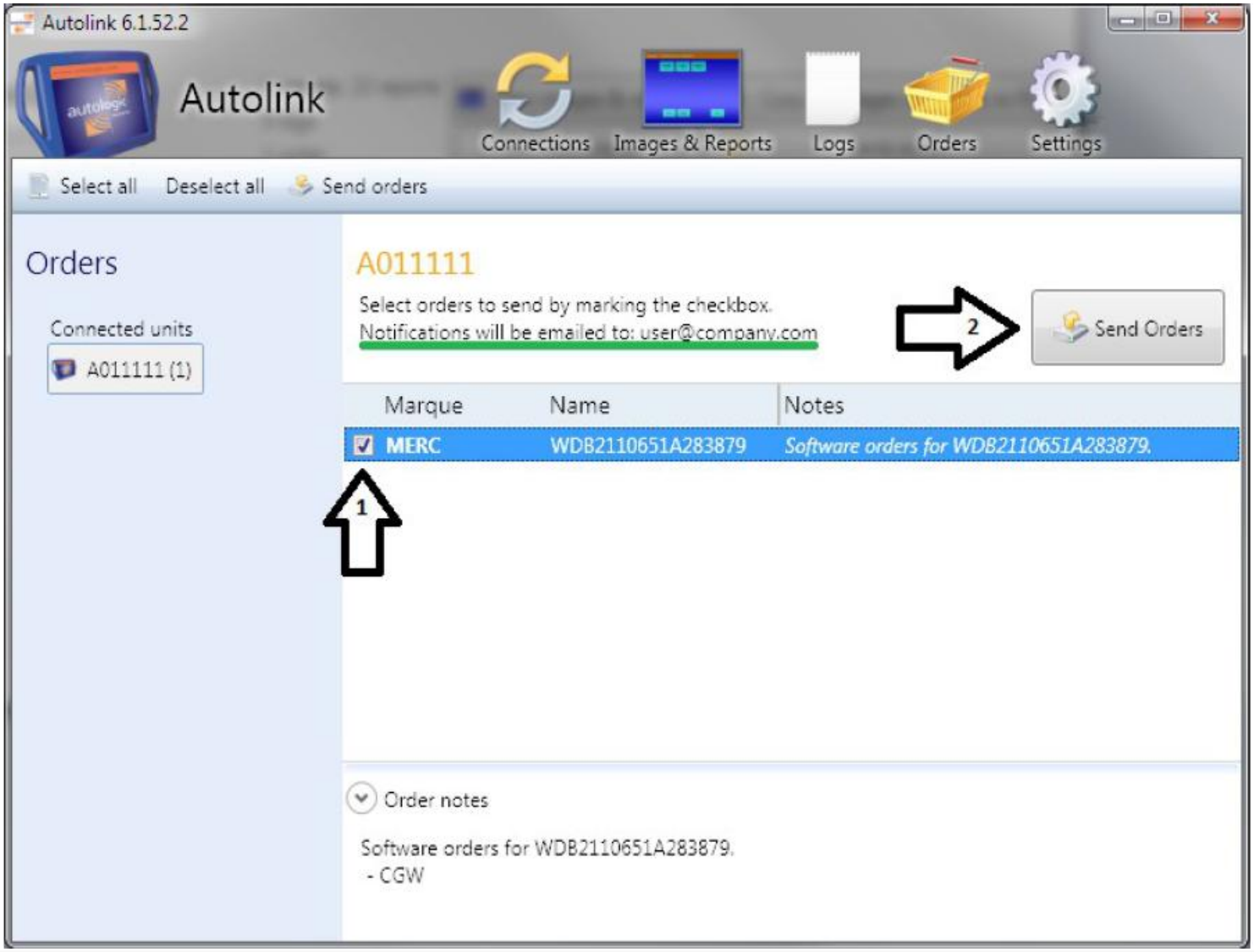
Electric plate / ECU replacement

Send Online Order using Autolink

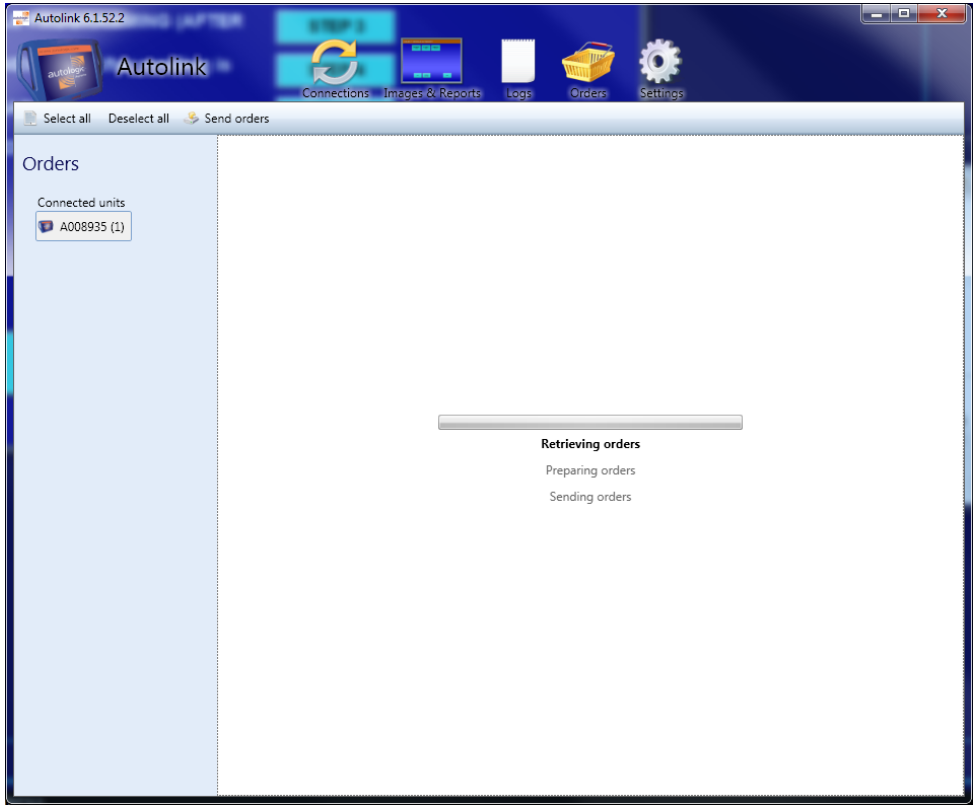


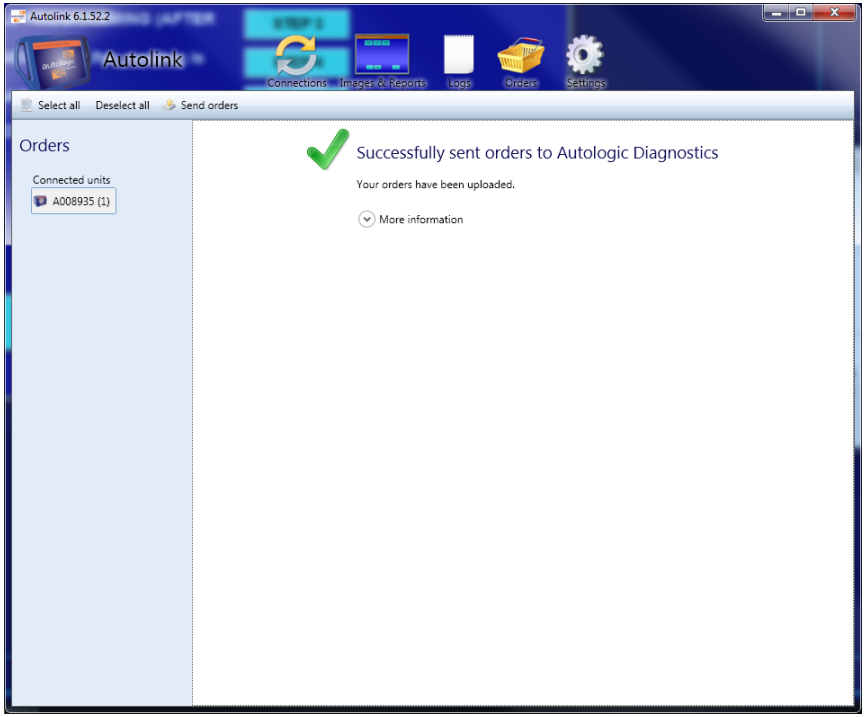
Electric plate / ECU replacement

Send Online Order using Autolink



Send Online Order using Autolink





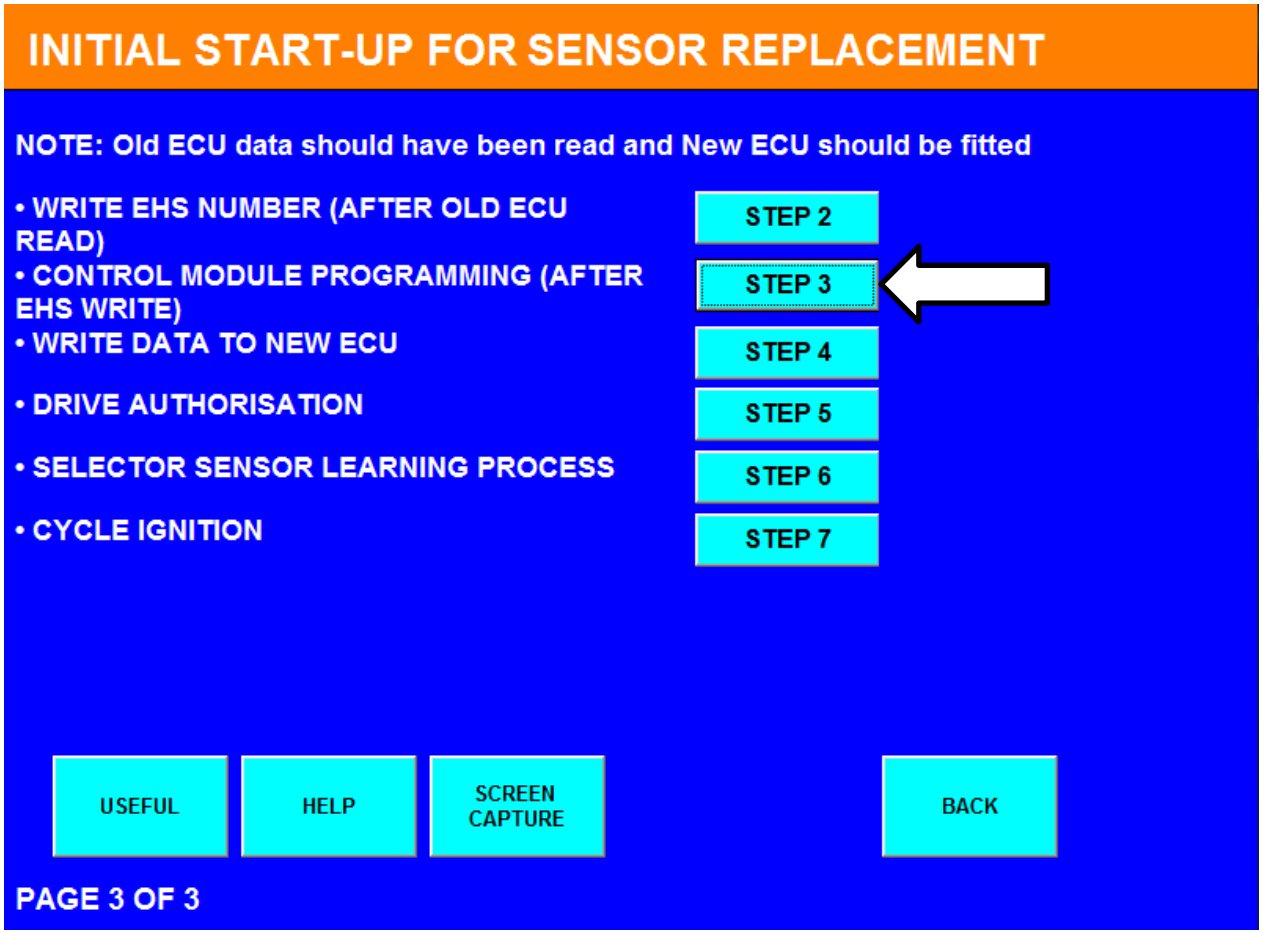
Electric plate / ECU replacement

Download order update

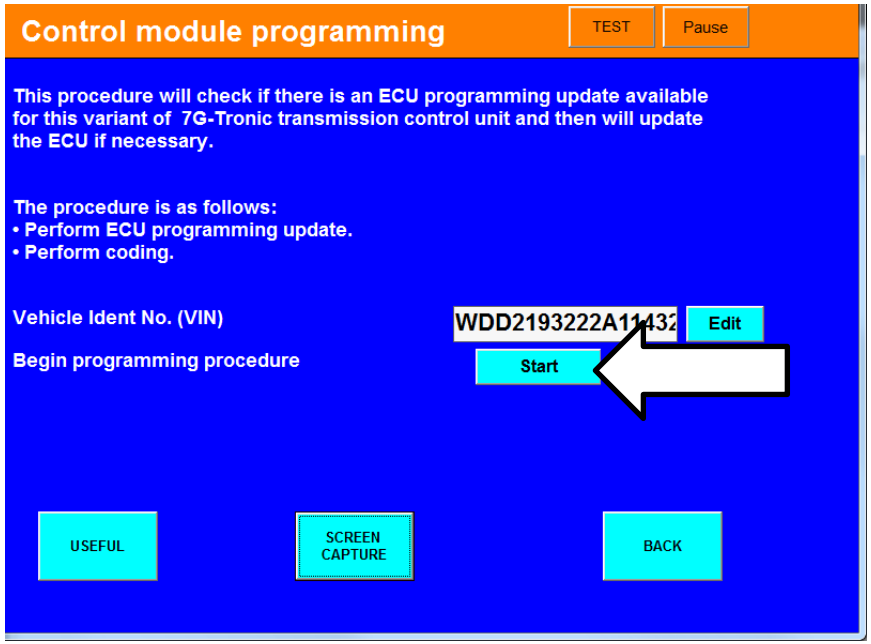
An email will be sent to inform you that the update is ready to download under My Files.

Electric plate / ECU replacement

Step 3 ECU programming



Electric plate / ECU replacement



Step 3

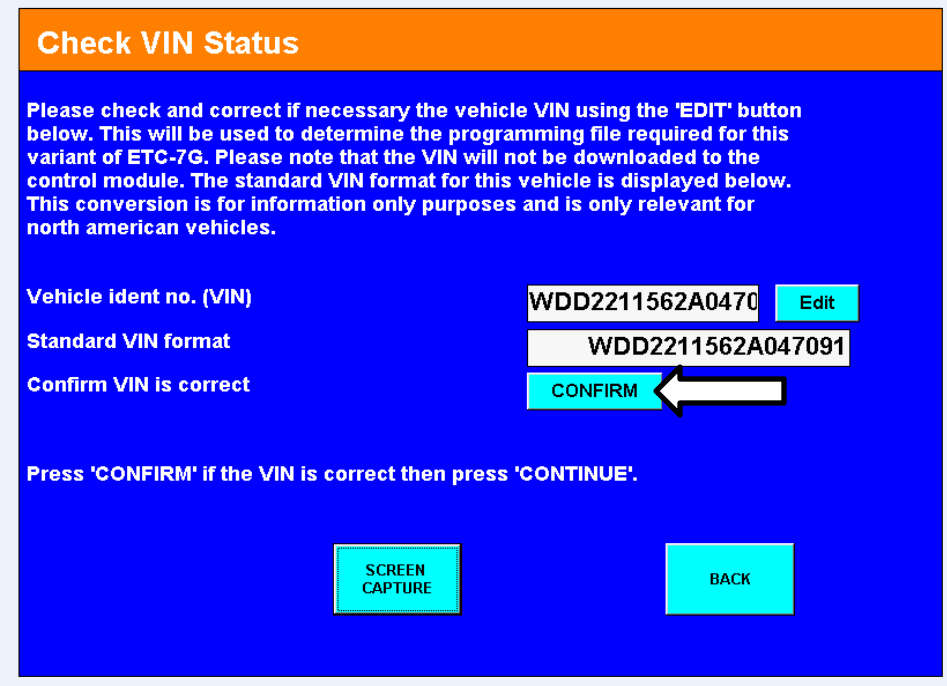
ECU programming

Begin procedure press start button.

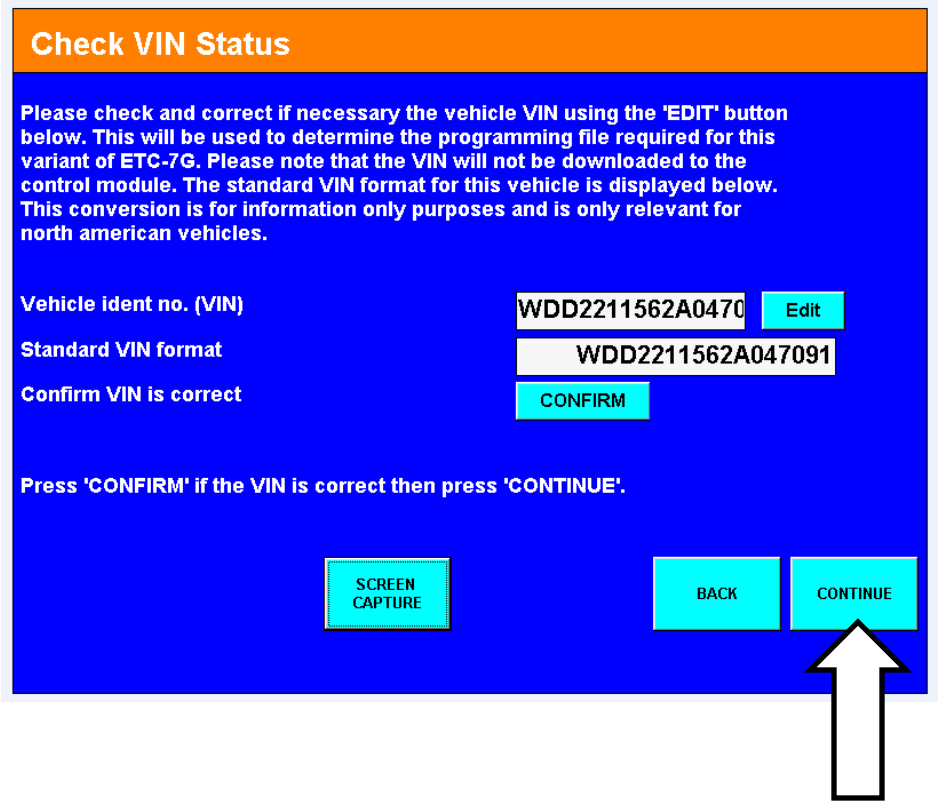
Flashing is a way to update control unit software.

Flashing is only to be performed when needed, otherwise issues may arise.

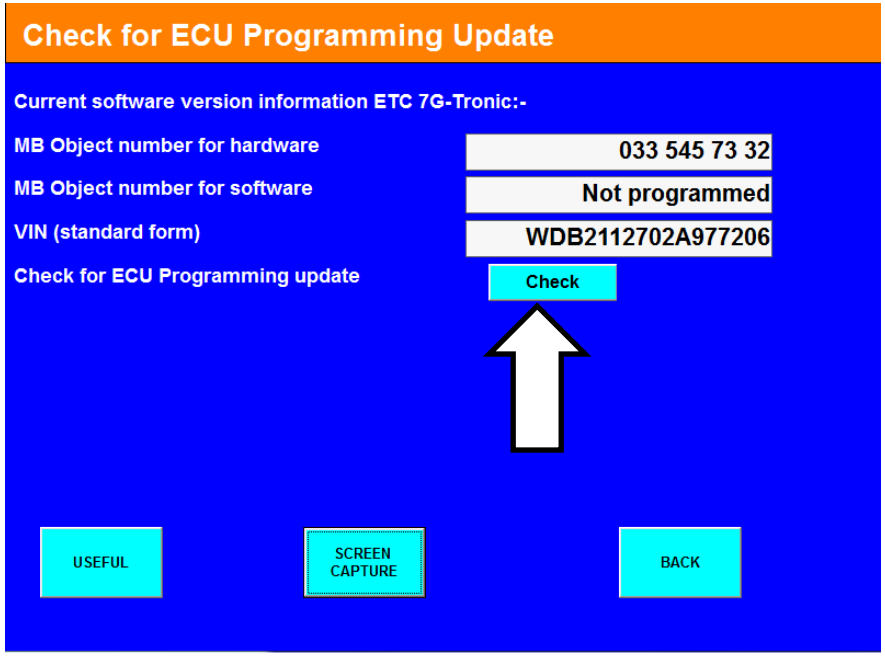
Edit correct chassis number and confirm .



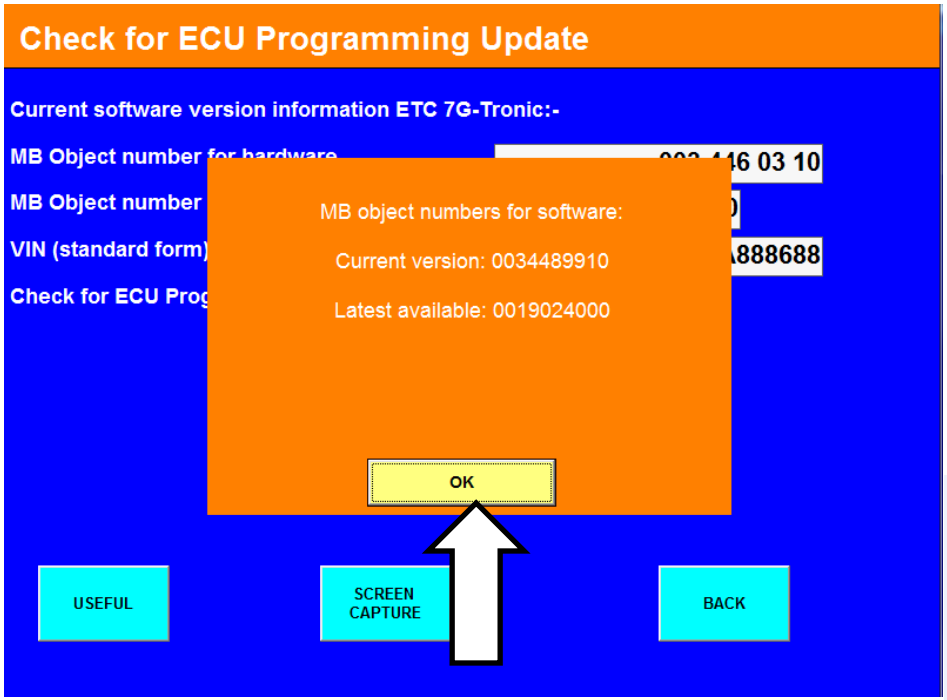
Electric plate / ECU replacement



Step 3
ECU programming

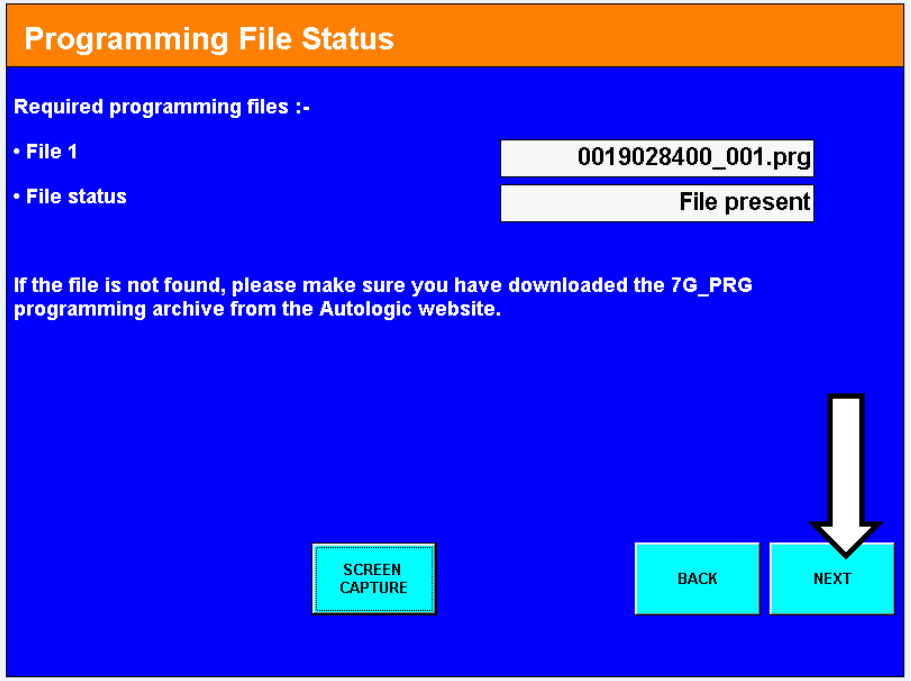


Electric plate / ECU replacement



Step 3
ECU programming

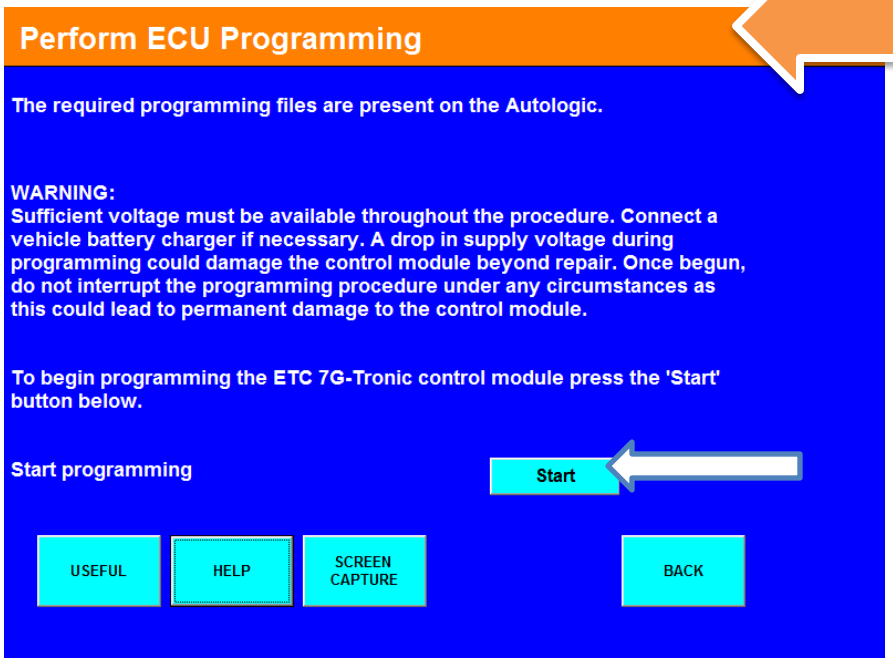
When the flash file is known to autologic the sequence /screen shots are as follows.

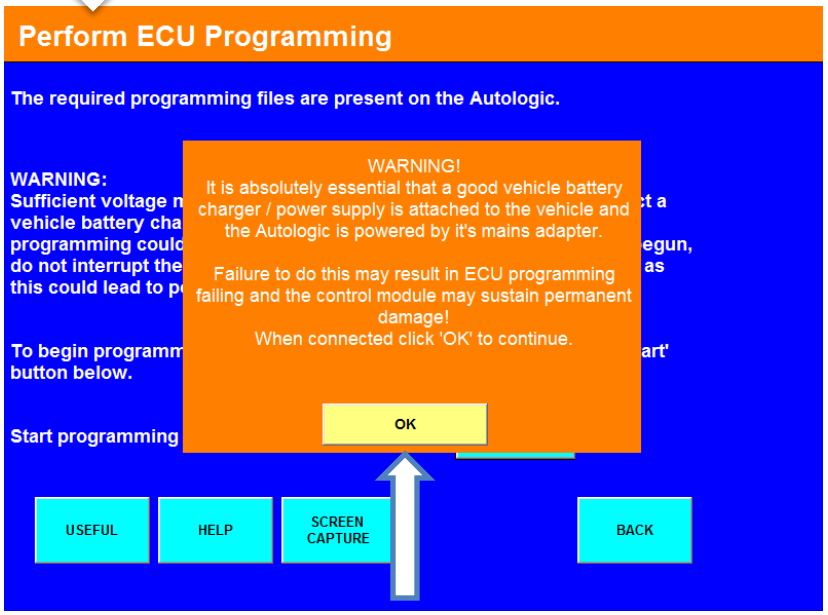


Remember a stable voltage is required Whilst flashing and SCN coding the control unit (failure to have stable voltage could result in failure and possible rendering the control unit un serviceable.

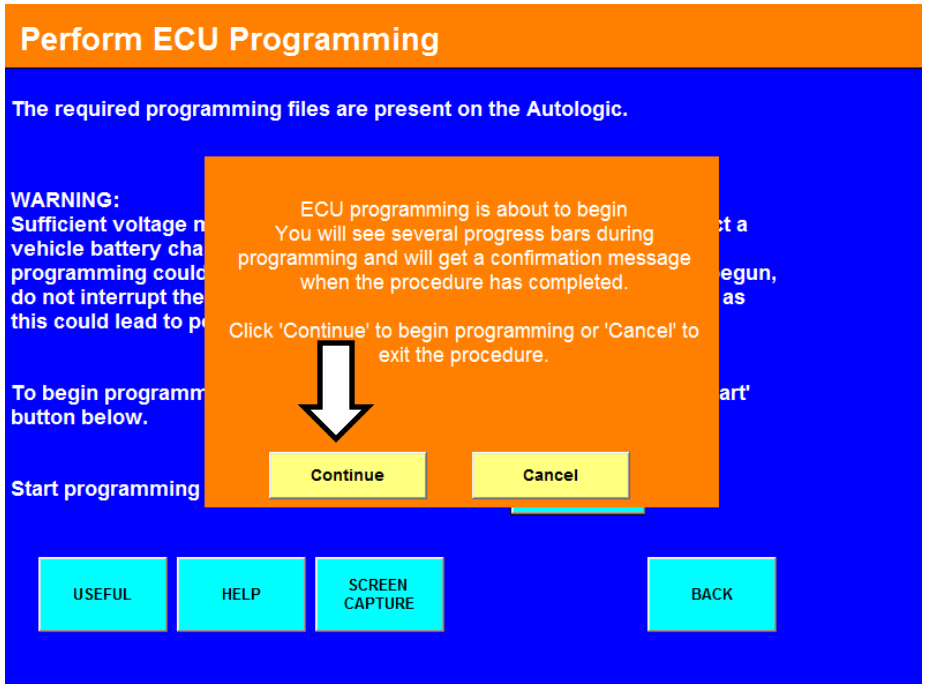
Electric plate / ECU replacement

Step 3
SD flash programming

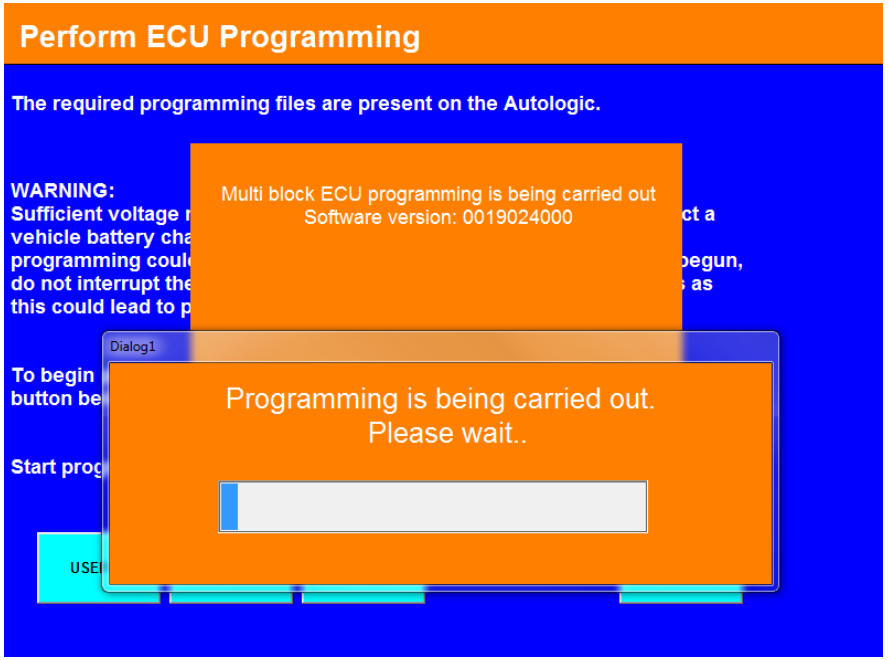




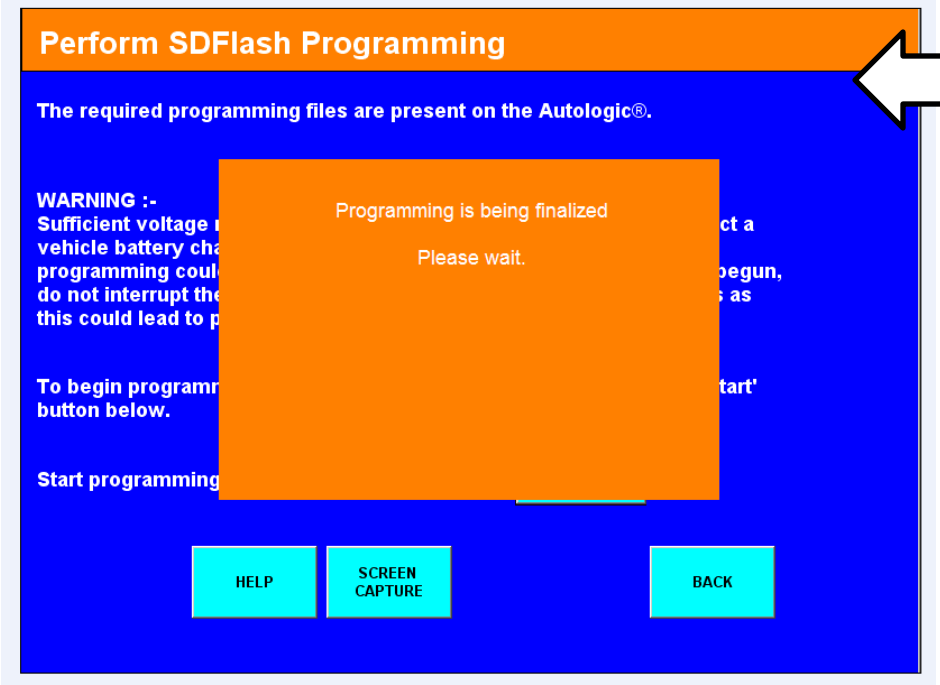
Electric plate / ECU replacement



Step 3
ECU programming

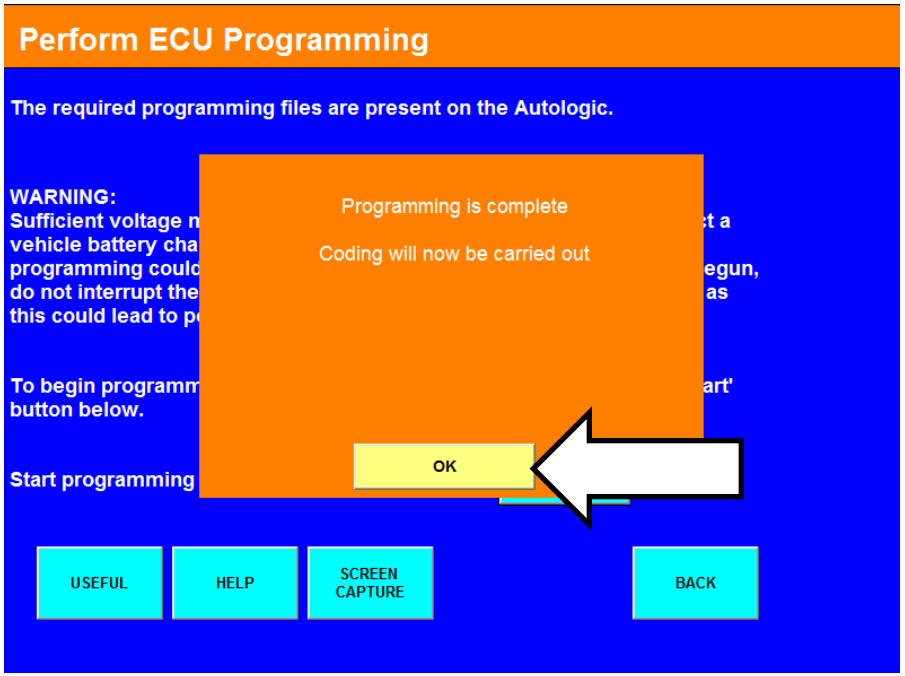


Electric plate / ECU replacement



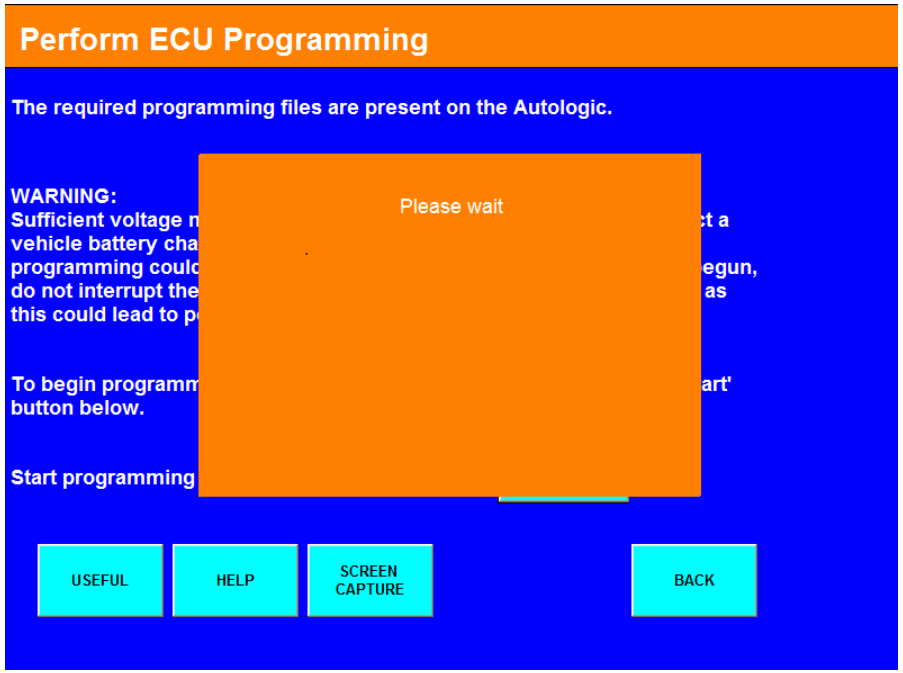
Step 3

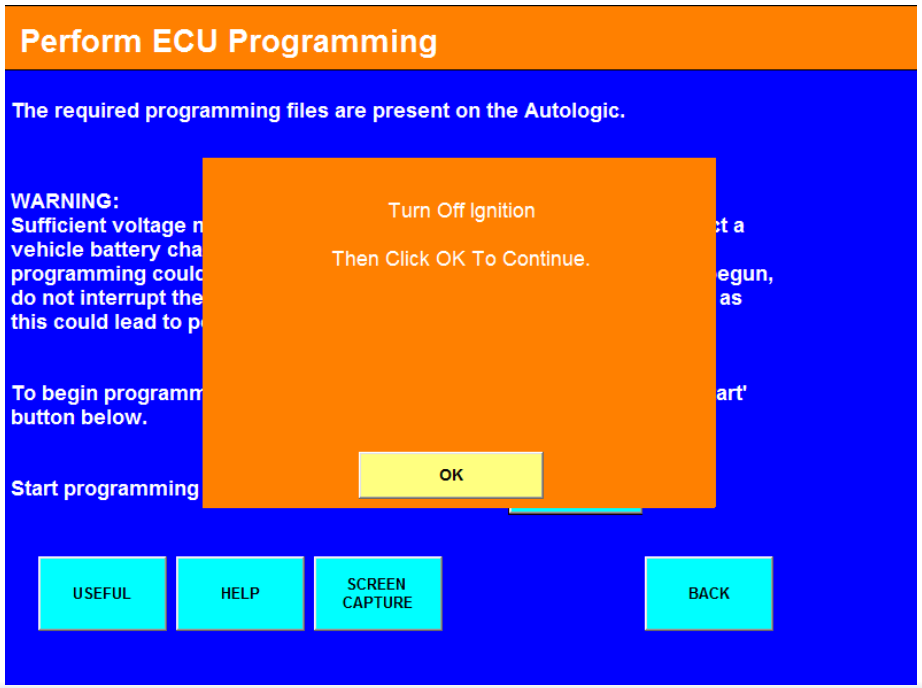
When ECU programming is complete CODING will be performed



Electric plate / ECU replacement

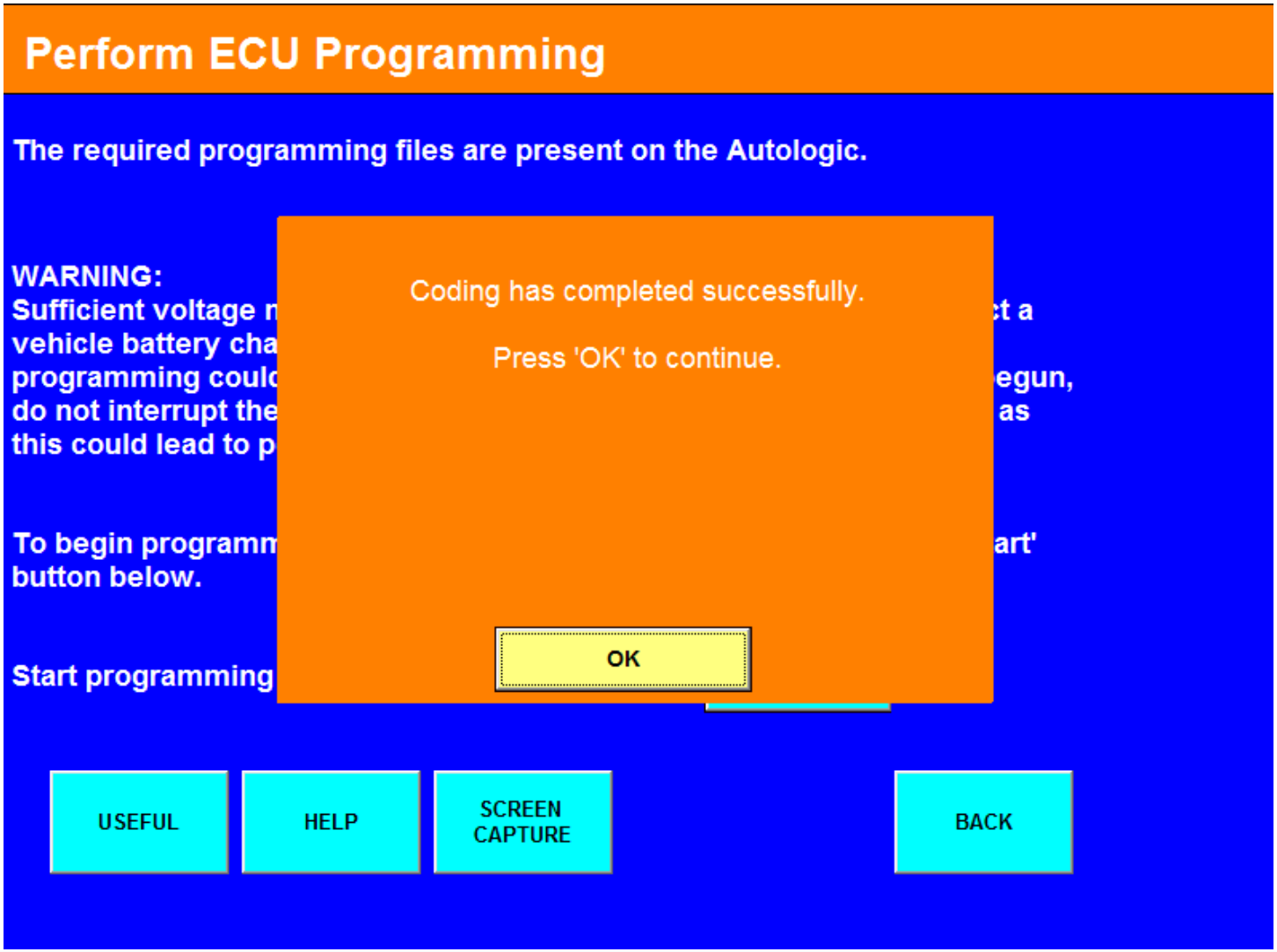
Step 3 Coding



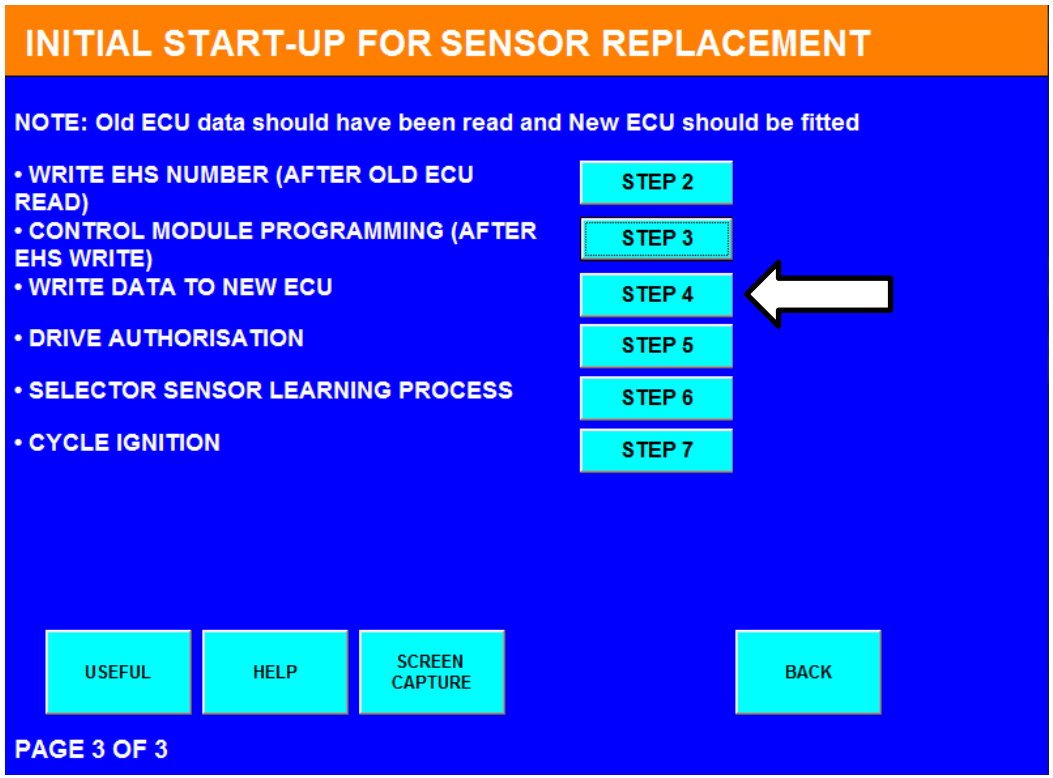


Electric plate / ECU replacement

Step 3 Coding



Electric plate / ECU replacement

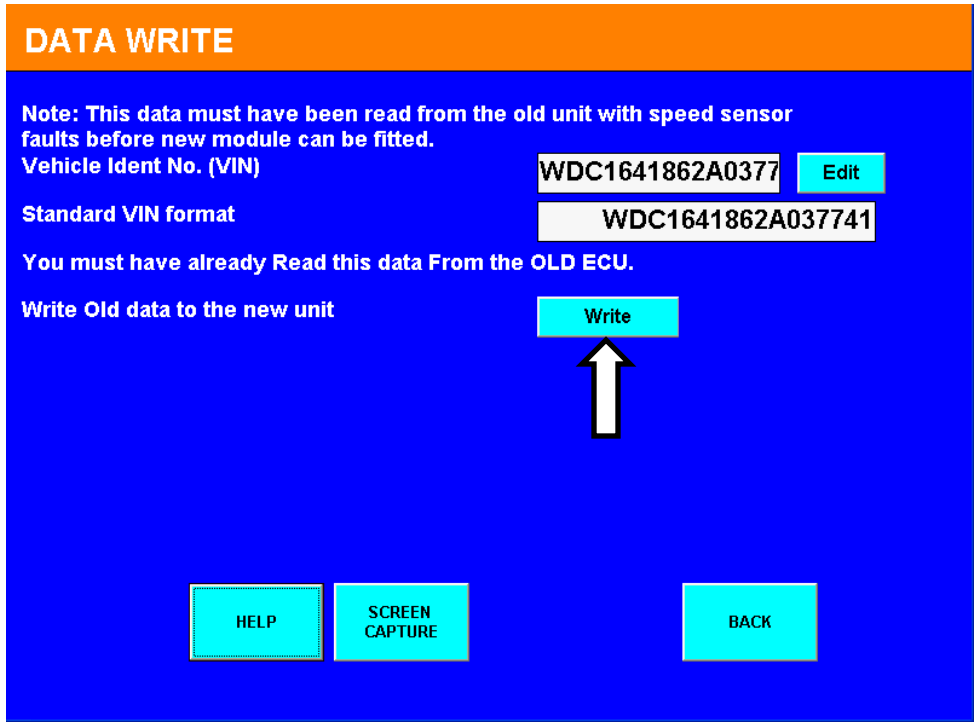


Step 4

This writes the adaption data from the old control unit stored in step 1 into the new control unit

Values transferred in **step 4** consist of
(the working and resistance values of the solenoid valves Stored from step 1)

Electric plate / ECU replacement



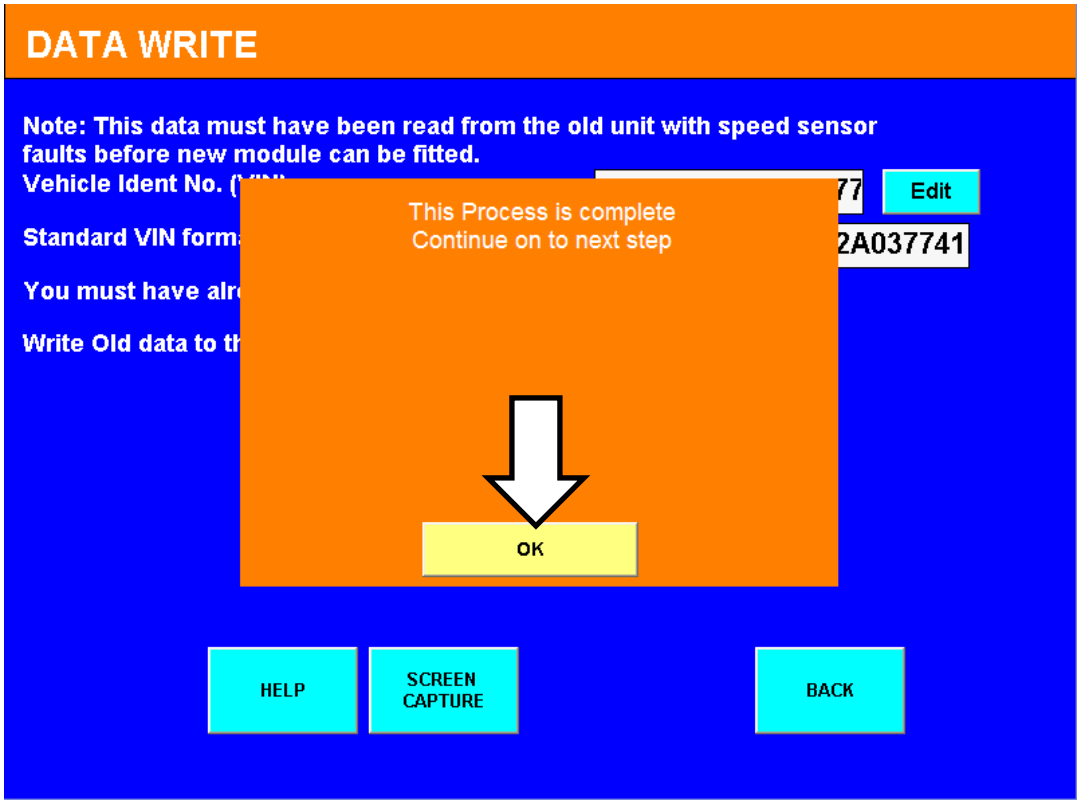
Step 4

This writes the data stored in step 1 into the new control unit(working and resistance values of the solenoid valves).

Electric plate / ECU replacement

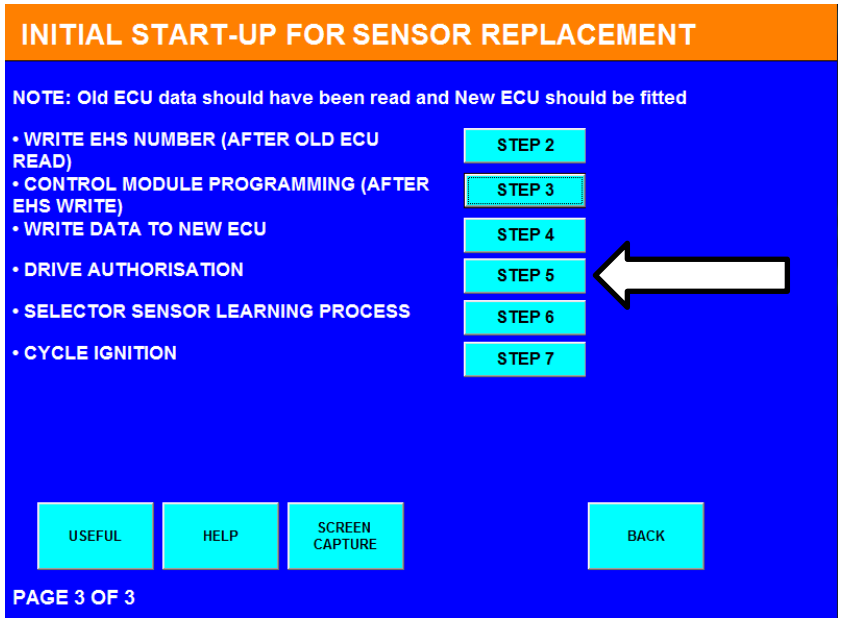
Step 4

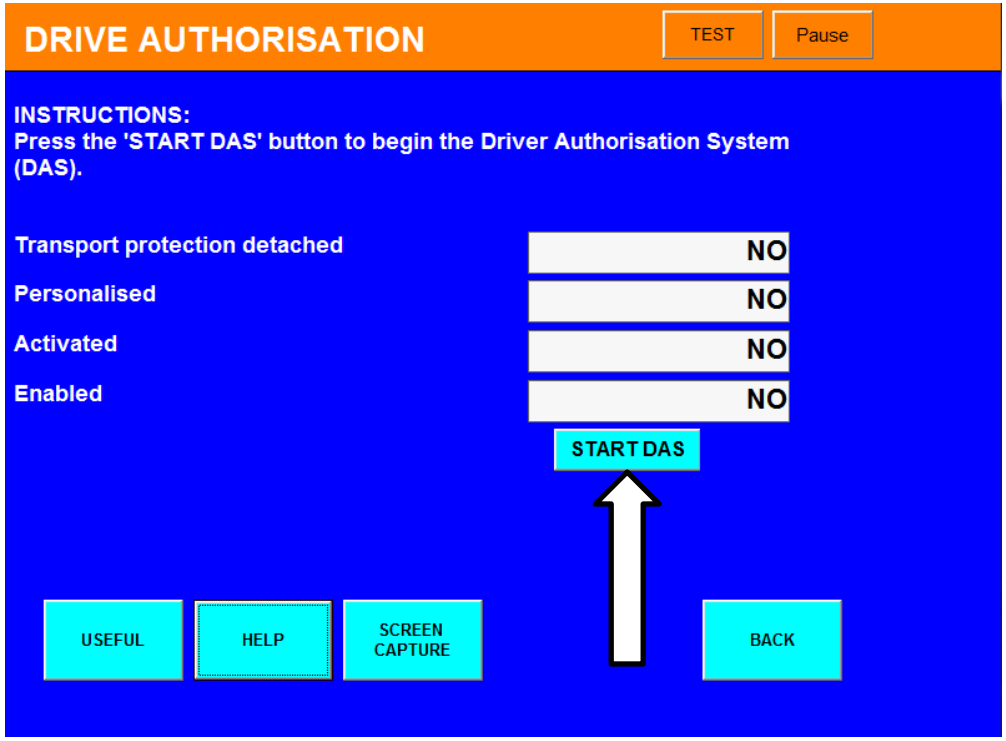
This writes the data stored in step 1 into the new control unit(working and resistance values of the solenoid valves).



Electric plate / ECU replacement

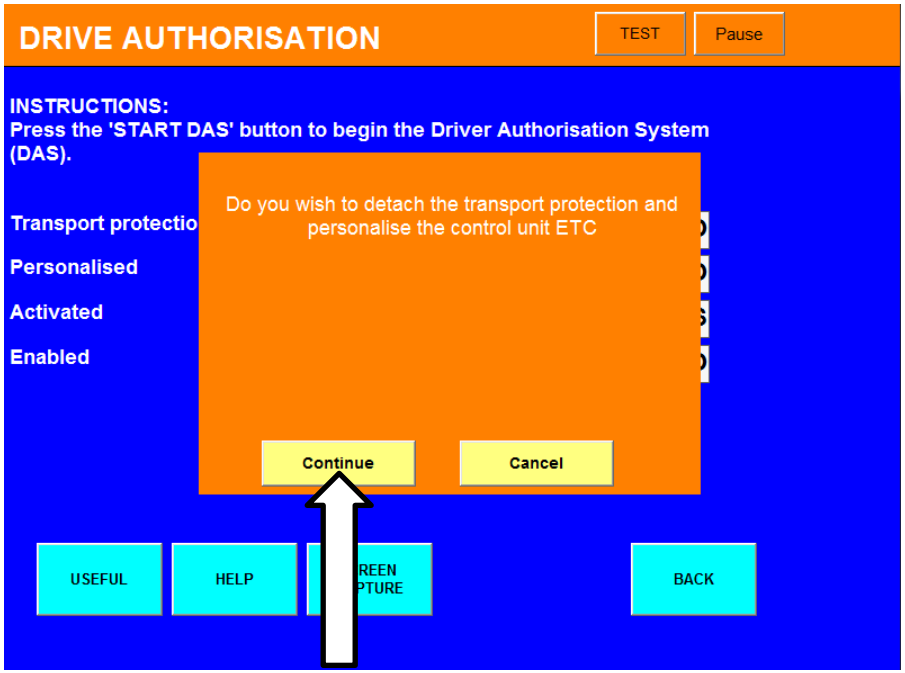
DRIVE AUTHORISATION step 5

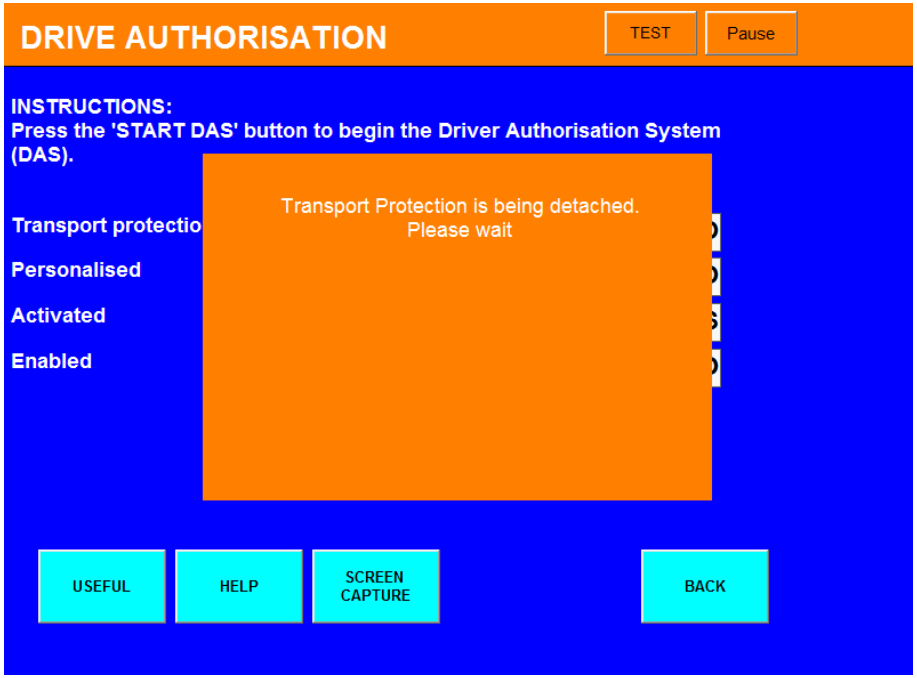




Electric plate / ECU replacement

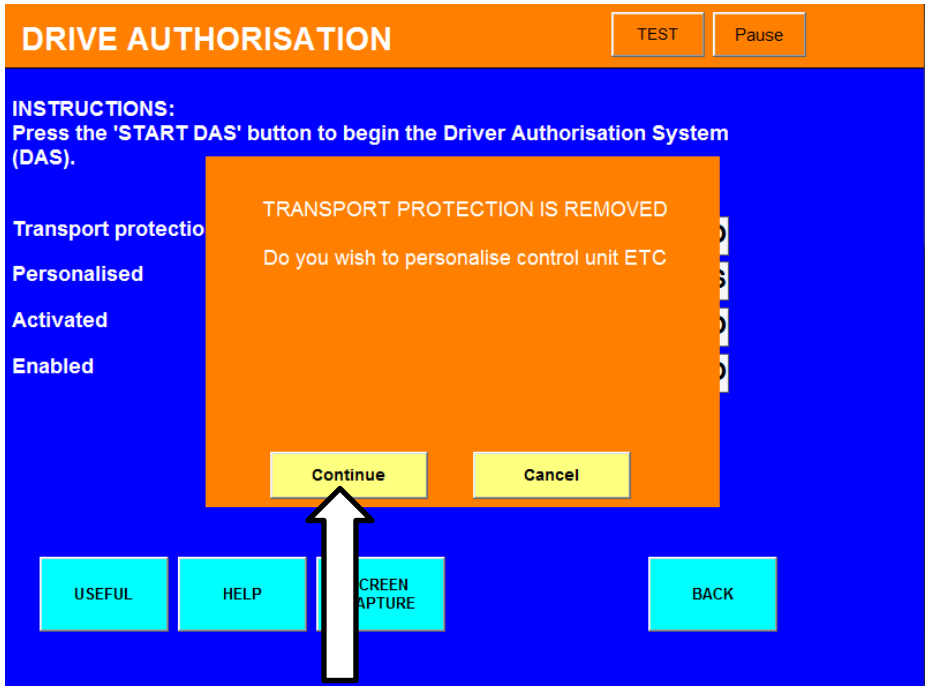
DRIVE AUTHORISATION step 5

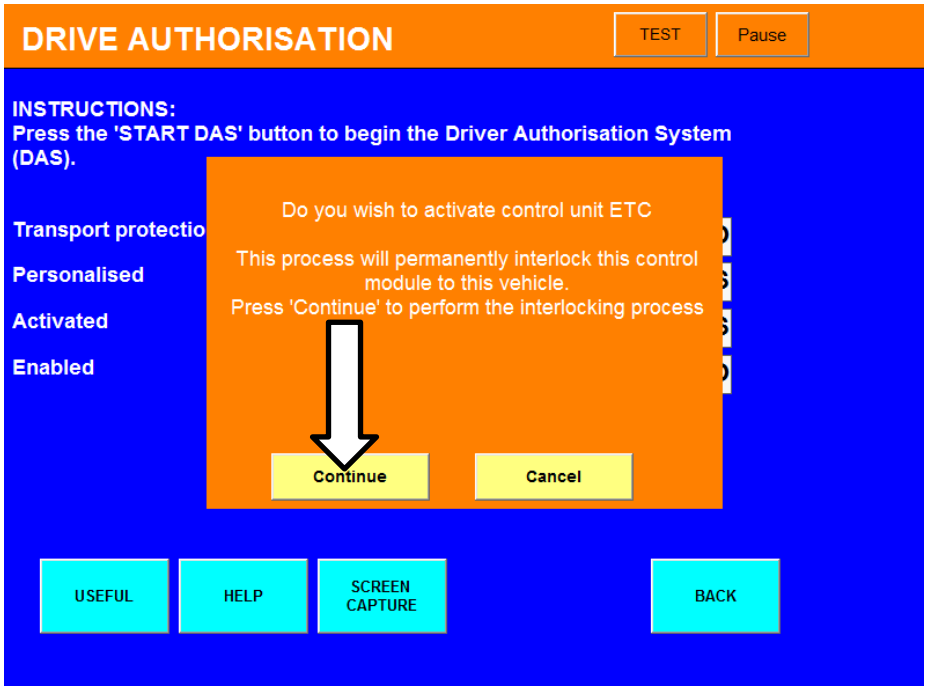




Electric plate / ECU replacement

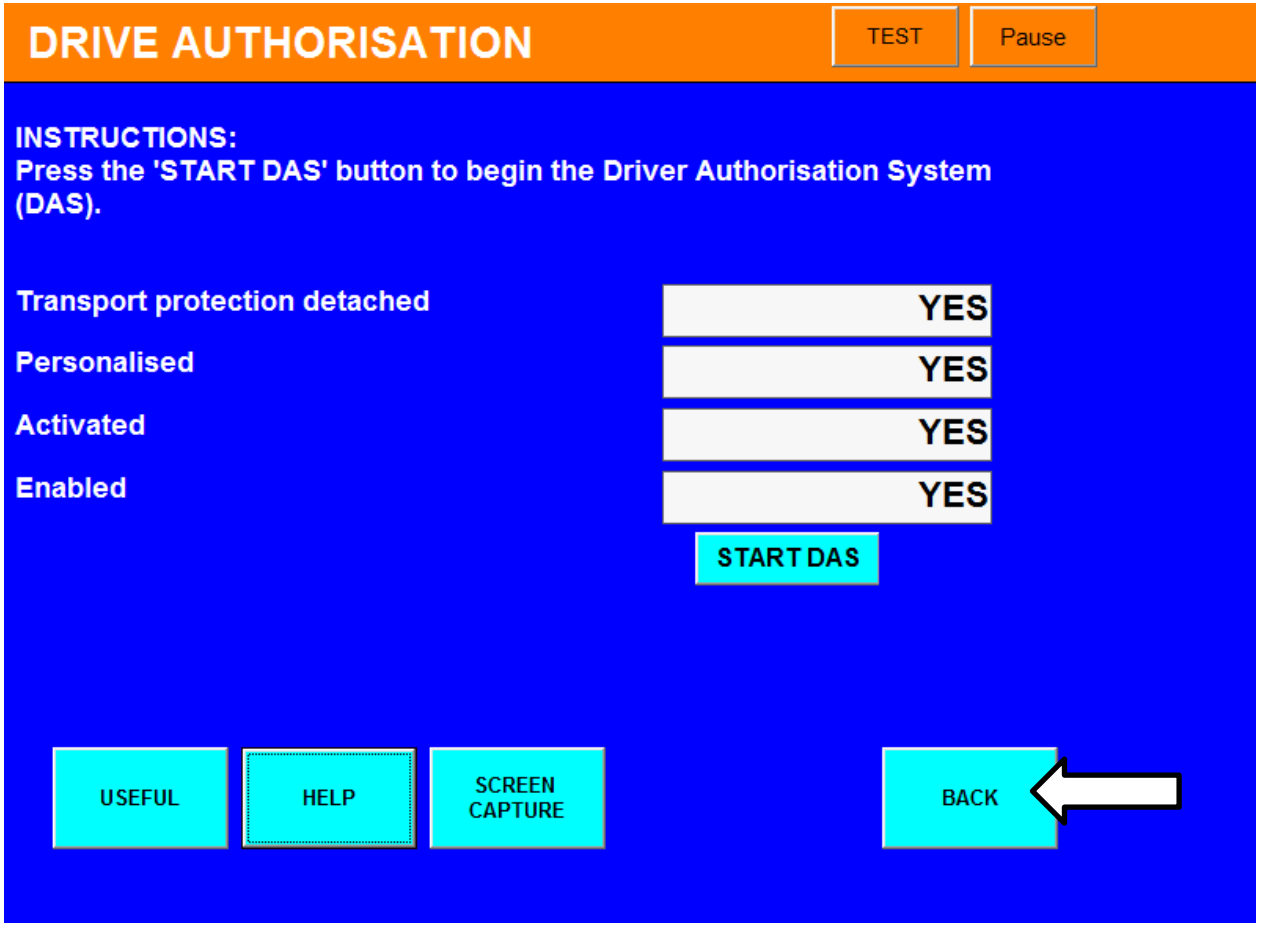
DRIVE AUTHORISATION step 5





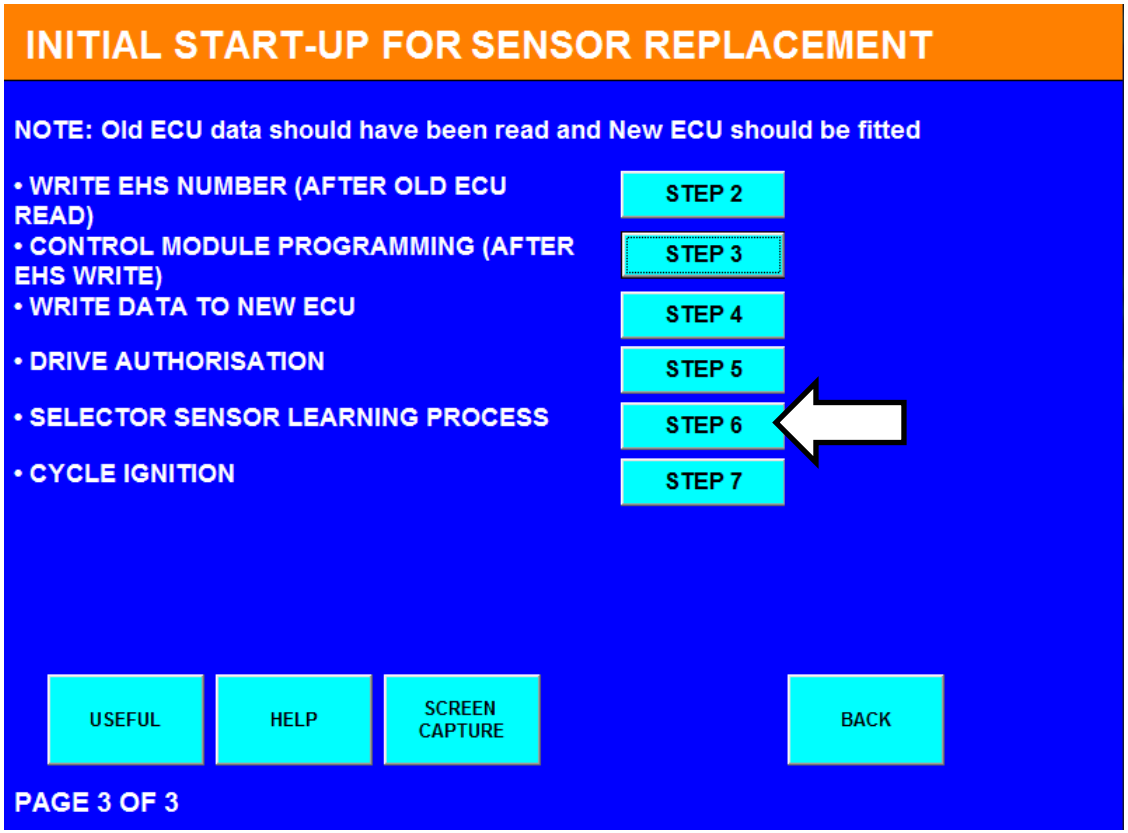
Electric plate / ECU replacement

DRIVE AUTHORISATION step 5



Electric plate / ECU replacement

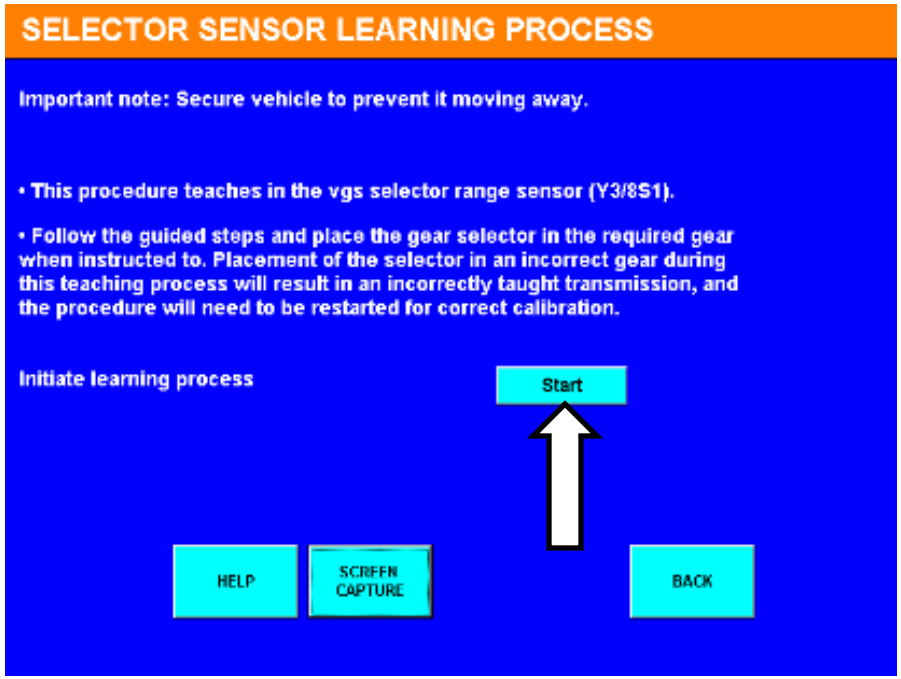
Selector sensor learning process Step 6



Once ok has been pressed you will be asked to place selector lever in various positions,

starting with park –reverse-neutral- drive - and process complete message .

Electric plate / ECU replacement



Selector sensor learning process Step 6

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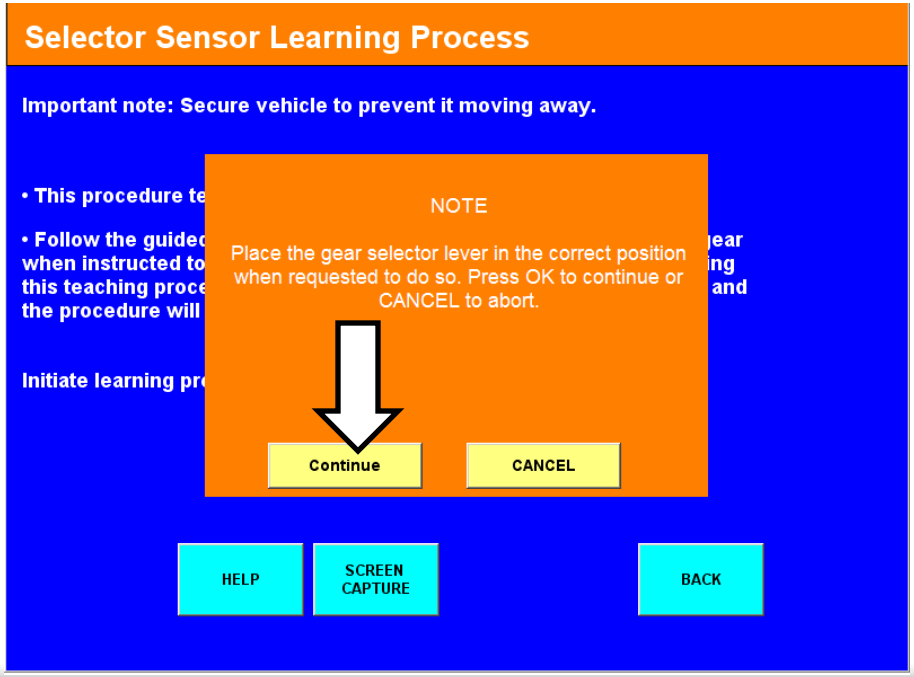
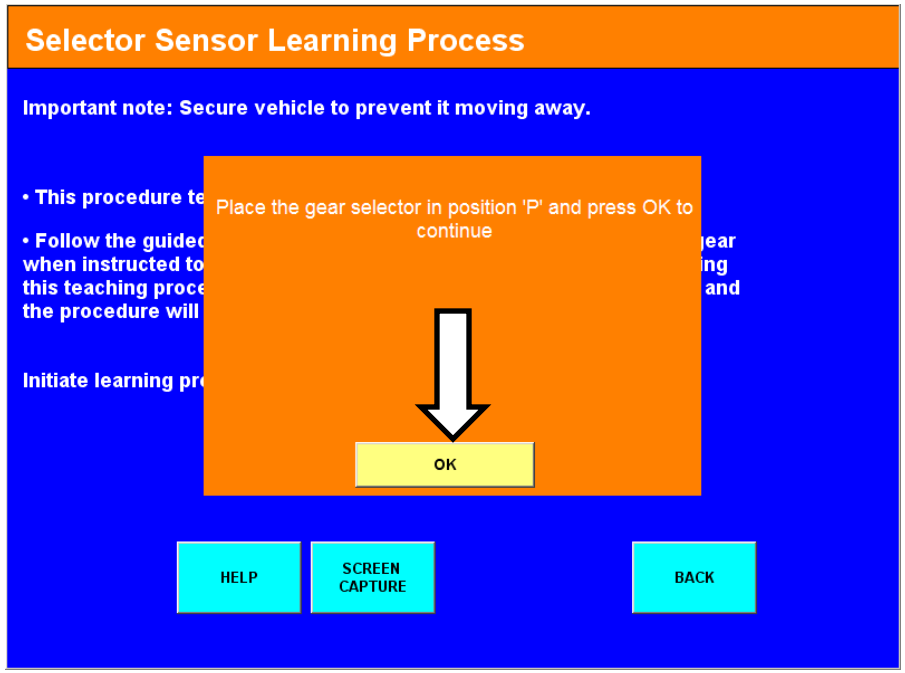
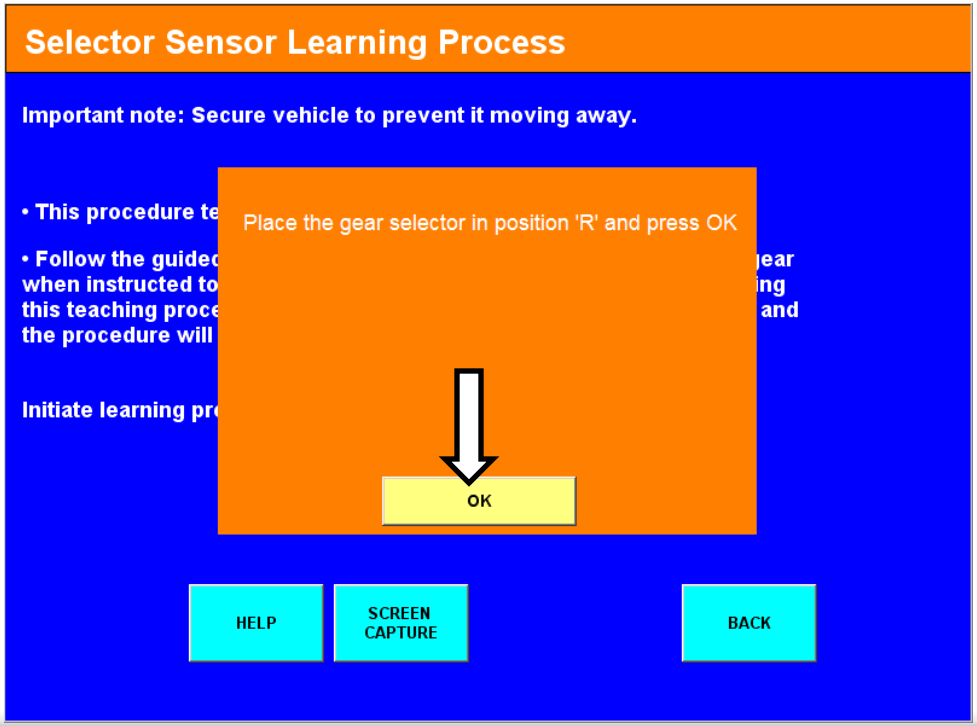


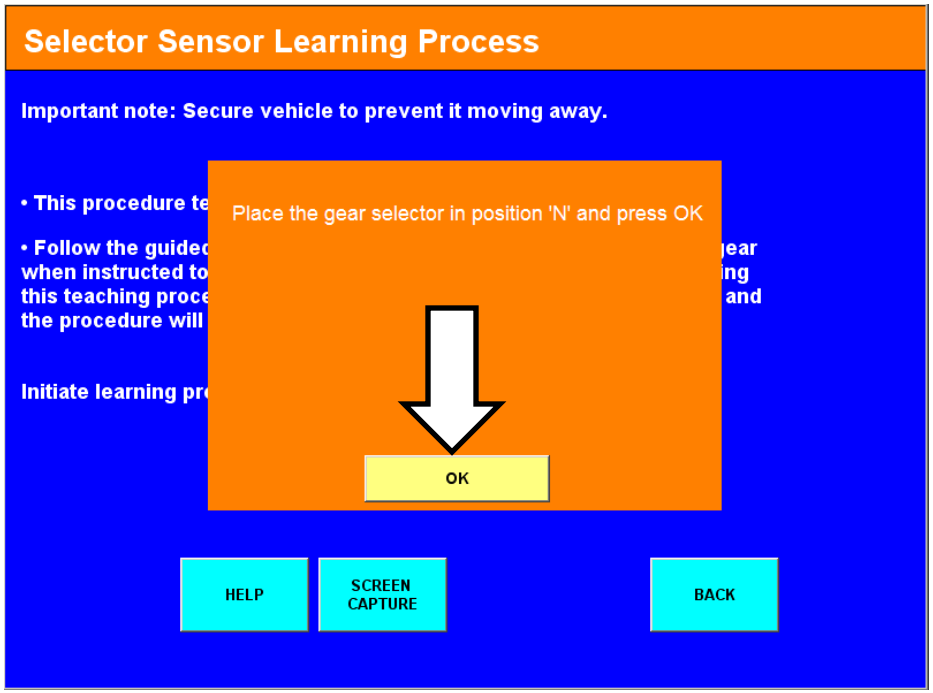
Electric plate / ECU replacement



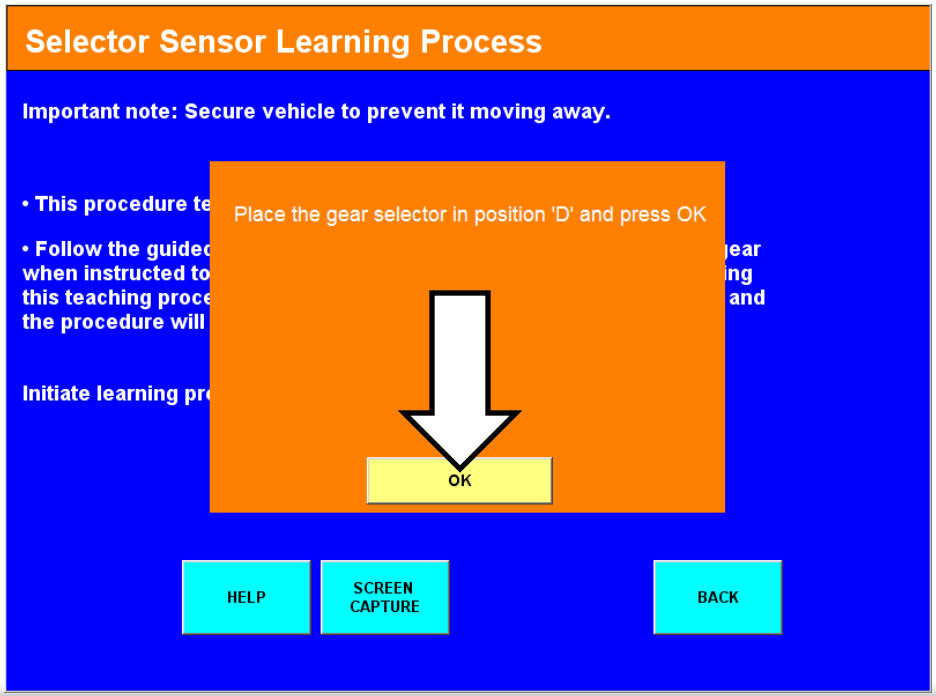
Selector sensor learning process Step 6



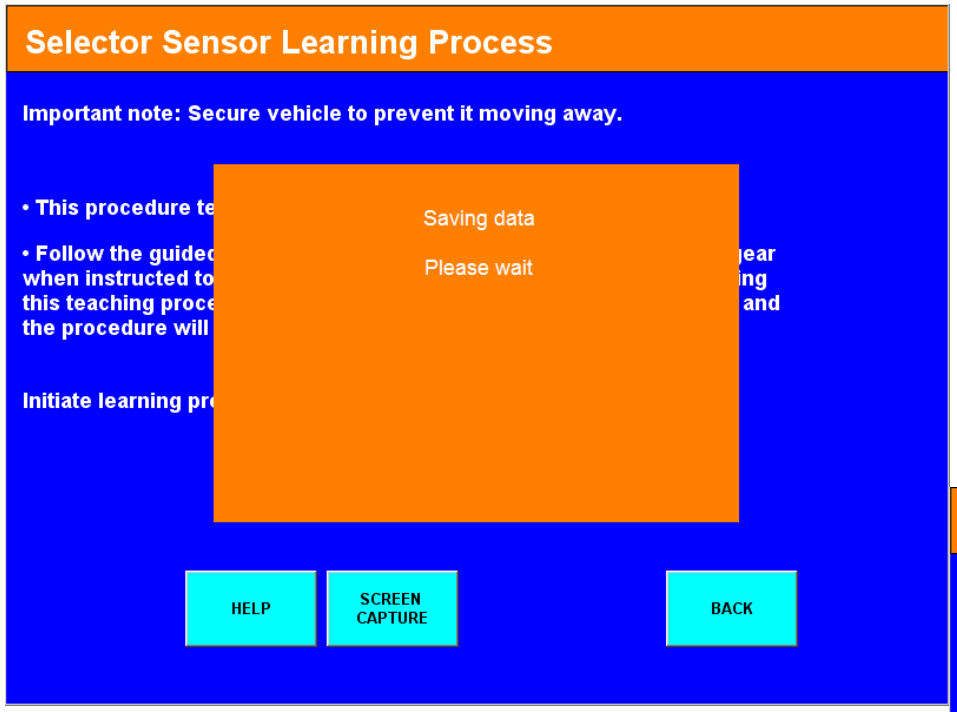
Electric plate / ECU replacement



Selector sensor learning process Step 6

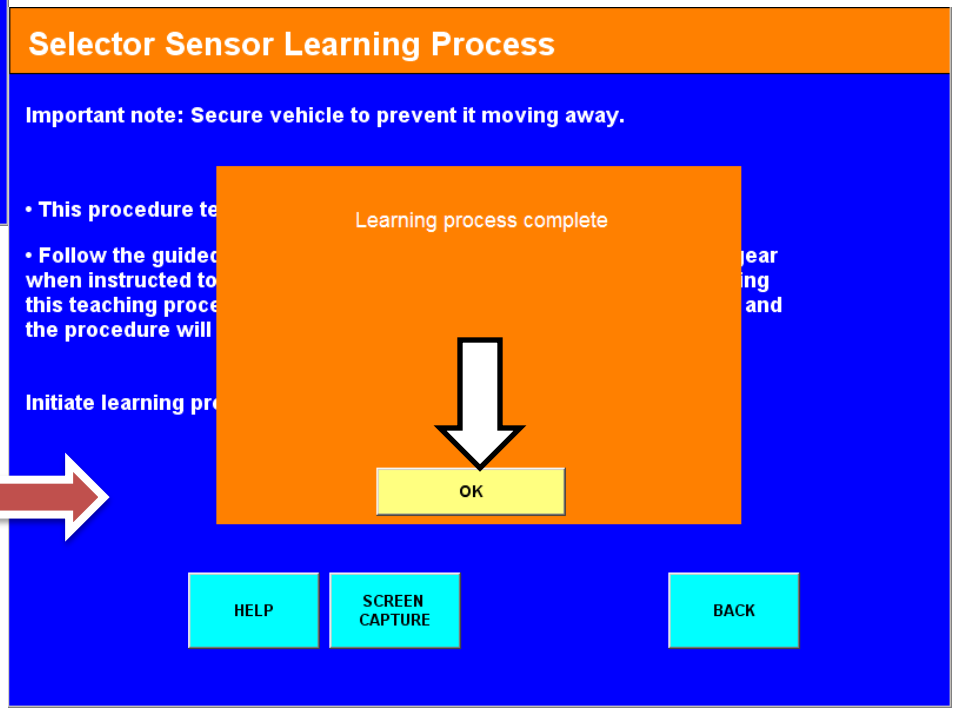


Electric plate / ECU replacement



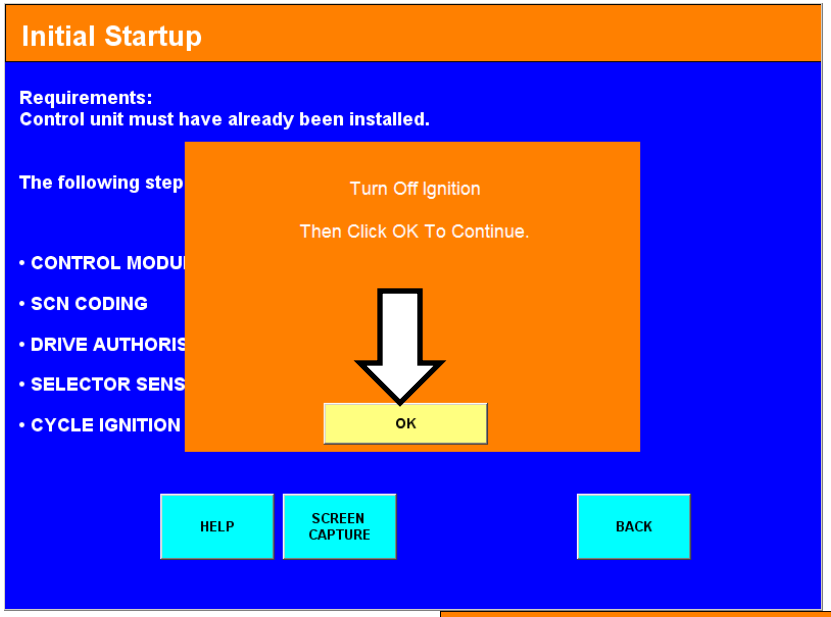
Selector sensor learning process Step 6

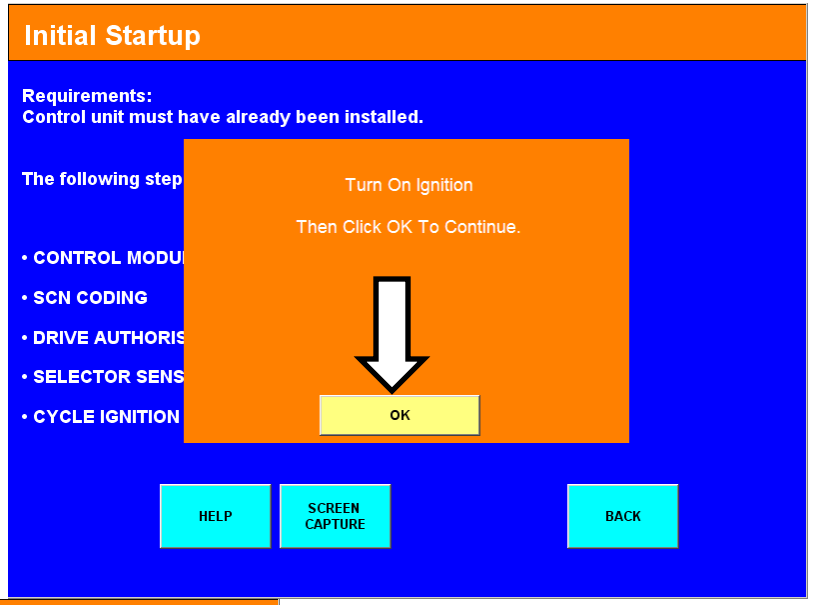
Selector sensor learning process Complete

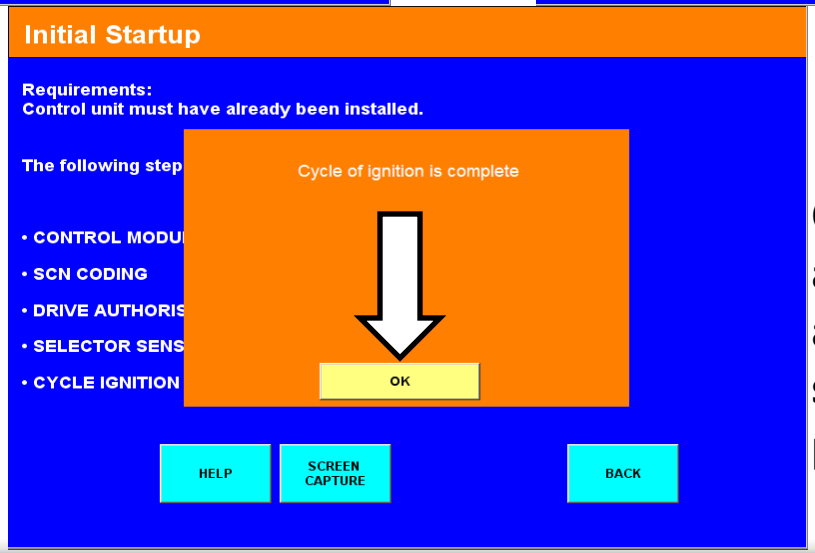


Electric plate / ECU replacement

cycle ignition step 7







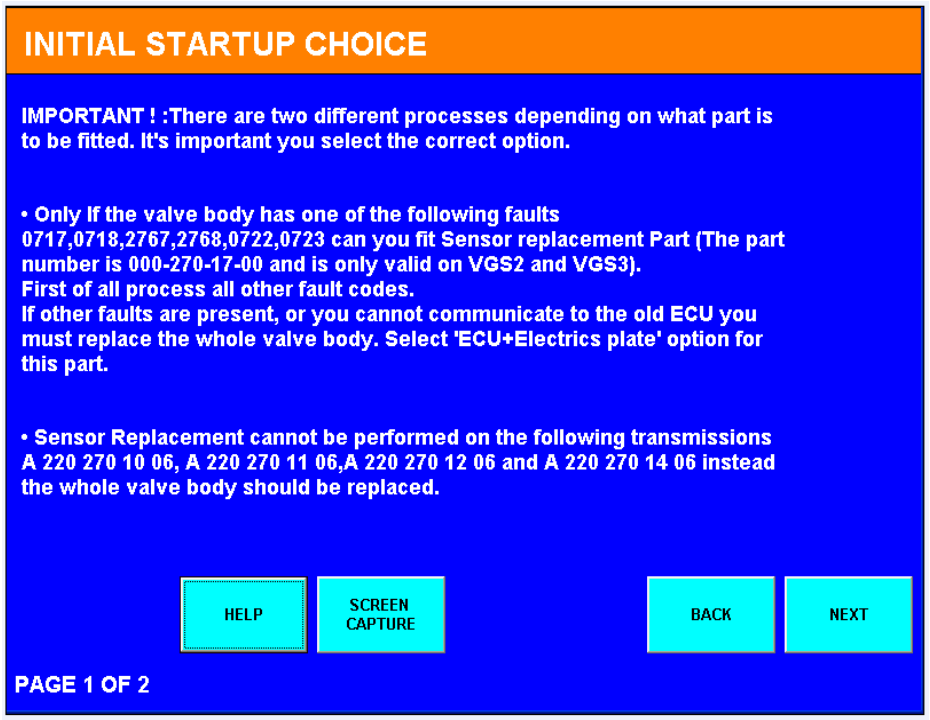
Clear error codes in vehicle and carry out gear change adaptation road test. After smooth changes adapted, the process is complete.

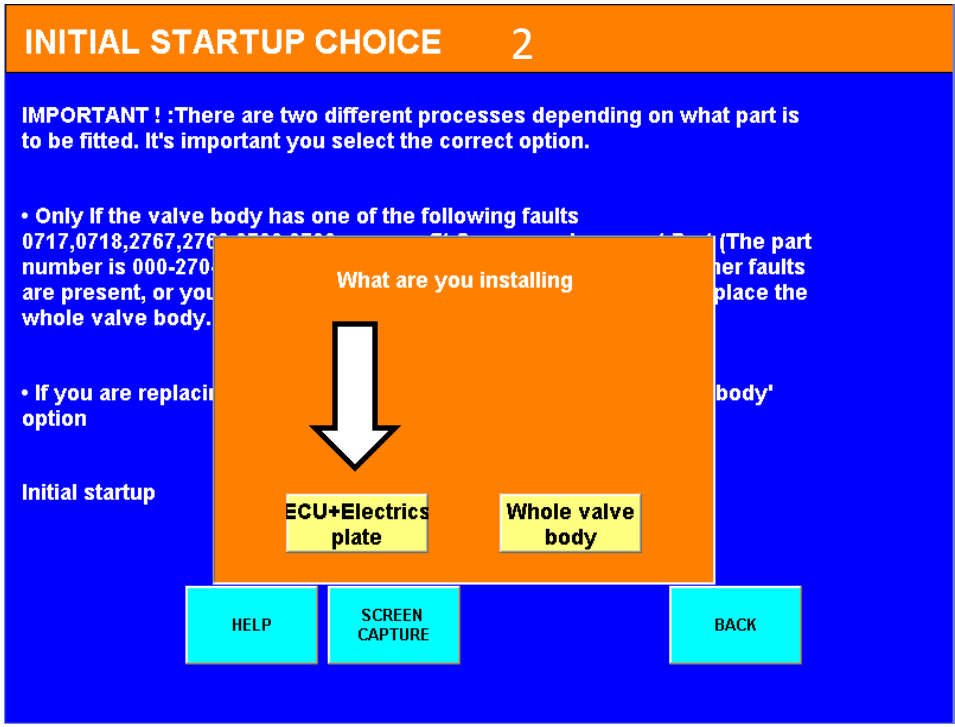
END OF ELECTRIC PLATE /CONTROL UNIT CODING INFORMATION

Possible problems when coding

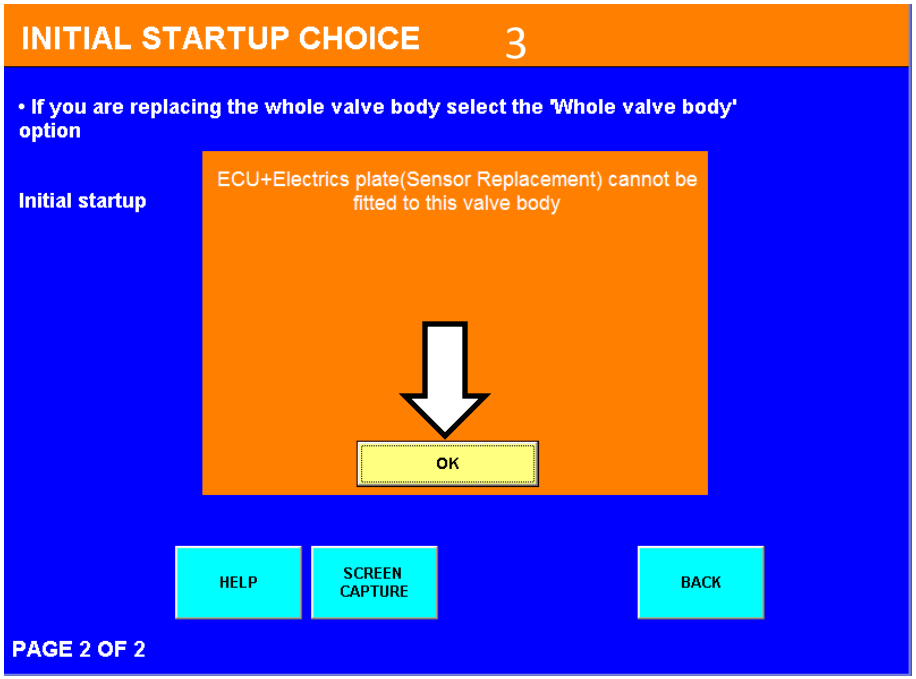
VGS 1 termination of programming

When trying to fit a new electric plate to an old valve body this is only possible if the old EHS is **not** a **VGS 1** valve body. VGS 1 part numbers **A 220 270 12 06 or A 220 270 14 06 or A220 270 10 06 or A220 270 11 06 (any of these numbers are a VGS 1 EHS controller)**
The autologic will automatically check this (**at step 1**) when you select ECU and electric plate repair at step 1 it will automatically check and if it is found to be VGS 1 then the following messages will occur , and the programming will be terminated.



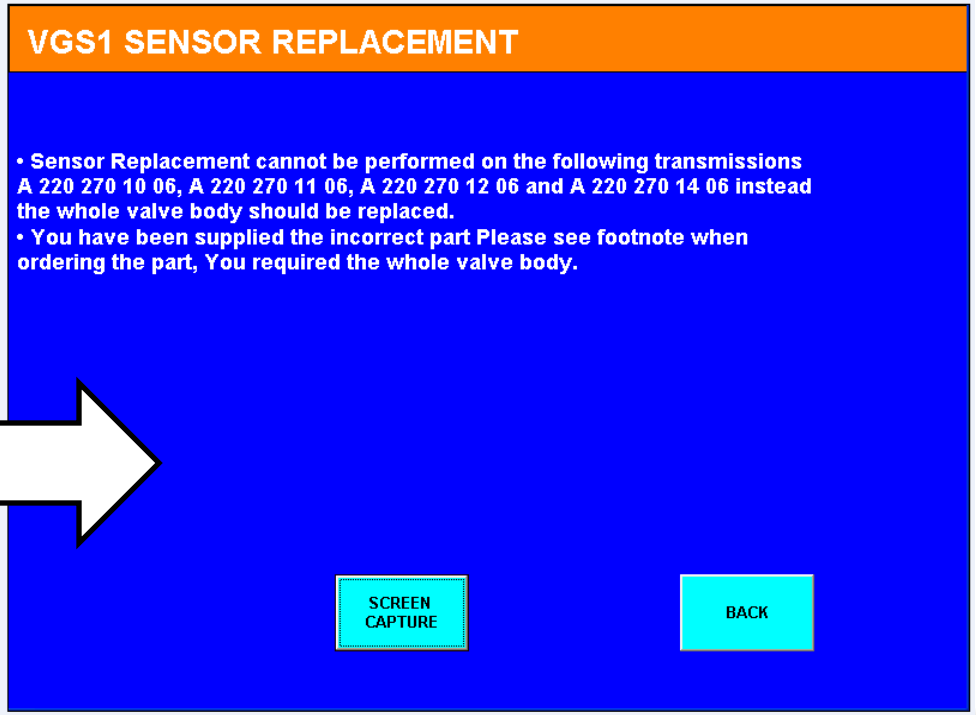


Possible problems when coding



This means the only option you have is to fit a new complete valve body

VGS 1 termination of programming continued



Possible problems when coding

7-g information

1/ To qualify for an electric plate only repair the vehicle must only have a speed sensor code of one or more of the following codes **0717-0718-0722-0723-2767-2768** Or any of the following fault codes (are also now included). **0705, 0604, 0605, 0641, 06A3, 0651, 1629, 1634, 1636, 0633, 062F, 0613, 0607, 0711, 1693, 1710, 1711, 1712, 0300, 060A, 1610, 0714, 0705, 0604, 0641, 06A3 -** can you fit an **electric plate/control unit replacement part .**

2/ If you **cannot** communicate with the old ECU you need to **fit a complete valve body**.

The repair kit is also **not** compatible with **AMG** vehicles.

3/ The EHS numbers **220 270 12 06 and 220 270 14 06 or A220 270 10 06 or A220 270 11 06** are all VGS 1 boxes and therefore do not come under the electrics plate repair as VGS 1 boxes are not compatible with the new plate
so if you had a VGS 2 or a VGS 3 box > 2005 onwards then all should be ok(these can be seen on page 2 of control unit version page with autologic)

4/ make sure a **stable** voltage is present throughout the coding procedure (a battery charger is recommended).

Possible problems when coding

5/ The brand new complete EHS valve body looks like it comes blank and just needs flashing and SCN coding and then all is ok. this is not the case ,

in fact it does have some values in from factory: IE :the resistance and working values from the solenoid valves , and as this is done at factory it is already pre set on the new (seemingly) blank EHS(complete valve body)

if you purchase a new electric plate (000 270 17 00) this obviously cannot be pre coded at factory as the working values of the solenoid valves for your vehicle are not known , so the Old ECU still needs to be fitted to the vehicle, then with autologic on vehicle establish communication with transmission/initial start up / and select ECU and electrics plate repair.

In step 1/ (read data) with autologic the old working values of the solenoid values are read and stored in autologic then remove valve body and fit the new electrics plate and re write the EHS number to latest number available and then carry out rest of process on autologic.

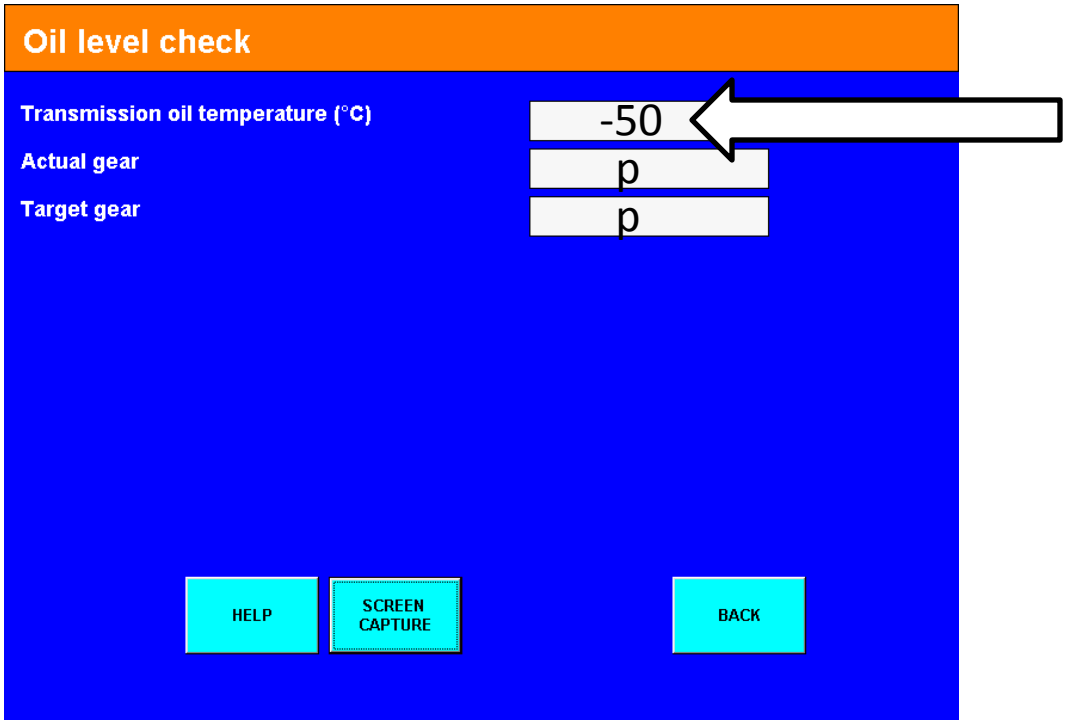
it seems the values that are retrieved from the old ECU are live data, and that is why the old valve body still has to be fitted to the vehicle for the values to be transferred correctly, if you just hang old unit on vehicle(with no solenoid valves fitted) this will transfer corrupt data and the gear change will be very harsh and unacceptable when programming is complete.

And will not adapt it self even if driven for a few weeks.

Possible problems when coding

note: If you ever have a problem after flashing the EHS(valve body) or a electrics plate repair and you are not sure if the process has completed correctly ?
(even if it seems to have completed the process via autologic)) a good way to check is have a look in actual values for gearbox and look at the transmission oil temperature, if the temp displayed is (**minus 50 degrees**) then something is wrong with the coding or it has not completed correctly.

(**note** : this is only possible to check when all the 5 steps have been completed).



It is also worth remembering that the control unit/ electric plate is coded to the vehicle and cannot be transferred to other vehicles once assigned to a vehicle .

New 7-g transmission

From June 2010 a modified 7-g transmission came into production.

This modified transmission requires a new transmission oil part number 001 989 78 03

This oil is a different colour from the older 7-g transmission

New oil = A 001 989 78 03 this new oil is blue in colour

Old oil = A001 989 68 03 old oil is red in colour

Note: the oils are **not** interchangeable

The two transmission types can be visually identified by the following :

1/ The New 7-g has 4x large moulded indent marks in underside of sump pan ,

In comparison the old type has 4 x smaller indents.

New 7-g transmission

2/ the front section of the new 7-g sump pan has two raised sections for cable brackets (as photo)which also makes it easier to identify.

3/ the new transmission also has a different internal filler pipe

new type which is green in colour

The old type was white in colour

New 7-g transmission

After carrying out the gearbox programming when replacing the 7-G control unit or Just updating the programming in the original 7-G control unit, it is possible to have a current and stored fault in the transmission.

Code

061B the internal torque computation performed in component y3/8n4 is faulty (This can be a current and stored fault code, in transmission control unit).

Reason: the torque interfaces of the engine control unit and the transmission control unit are not suited to each other. Torque control is not possible.

Remedy : flash and SCN code the engine ECU with new programming files.
Note: even if no newer software is found for the engine ECU, the SCN coding Should still be performed and fault codes deleted .

This fault mainly occurs on petrol vehicles ,

End of information